UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K
FOR ANNUAL AND TRANSITION REPORTS PURSUANT TO
SECTIONS 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

(Mark One)
☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022
OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 001-32600

Tucows Inc.

(Exact Name of Registrant as Specified in Its Charter)

Pennsylvania	**23-2707366**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
96 Mowat Avenue	
Toronto, Ontario, Canada	**M6K 3M1**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: **(416) 535-0123**

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common stock, no par value	TCX	NASDAQ Capital Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Securities Exchange Act of 1934.

Large accelerated filer ☐ Accelerated filer ☒ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards pursuant to Section 13(a) of the Securities Exchange Act of 1934. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b), indicate by check mark whether the financial statements of the registrant included in the filing reflect the correlation of an error to previously issued financial statements. Yes ☐ No ☐

Indicate by check mark whether any of such error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). Yes ☐ No ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of Act). Yes ☐ No ☒

As of June 30, 2022, (the last day of our most recently completed second quarter), the aggregate market value of the common stock held by non-affiliates of the registrant was approximately $283.9 million. Such aggregate market value was computed by reference to the closing sale price per share of $44.51 as reported on the NASDAQ Capital Market on such date. For purposes of making this calculation, the registrant has excluded each executive officer, each director and each beneficial owner of more than ten percent of the outstanding shares of common stock of the Company. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of shares outstanding of the registrant's common stock as of March 13, 2023, was 10,829,711.

TUCOWS INC.
ANNUAL REPORT ON FORM 10-K
For Fiscal Year Ended December 31, 2022

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TRADEMARKS, TRADE NAMES AND SERVICE MARKS

Tucows®, EPAG®, Hover®, OpenSRS®, Platypus®, Ting®, eNom®, Roam®, Roam Mobility®, Bulkregister®, Ascio®, Cedar®, YummyNames®, Simply Bits®, and Wavelo® are registered trademarks of Tucows Inc. or its subsidiaries. Other service marks, trademarks and trade names of Tucows Inc. or its subsidiaries may be used in this Annual Report on Form 10-K (this "Annual Report"). All other service marks, trademarks and trade names referred to in this Annual Report are the property of their respective owners. Solely for convenience, any trademarks referred to in this Annual Report may appear without the ® or TM symbol, but such references are not intended to indicate, in any way, that we or the owner of such trademark, as applicable, will not assert, to the fullest extent under applicable law, our or its rights, or the right of the applicable licensor, to these trademarks.

Information Concerning Forward-Looking Statements

This Annual Report on Form 10-K contains, in addition to historical information, forward-looking statements by Tucows Inc. (the “Company”, “we”, “us” “Tucows” or “our”) with regard to our expectations as to financial results and other aspects of our business that involve risks and uncertainties and may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “may,” “should,” “anticipate,” “believe,” “plan,” “estimate,” “expect,” and “intend,” and other similar expressions are intended to identify forward-looking statements. The forward-looking statements contained in this report include statements regarding, among other things, the competition we expect to encounter as our business develops and competes in a broader range of Internet services, the Company's foreign currency requirements, specifically for the Canadian dollar and Euro; Internet access subscriber growth and retention rates, the number of new, renewed and transferred-in domain names we register as our business develops and competes; the effect of a potential generic top level domain (“gTLD”) expansion by the Internet Corporation for Assigned Names and Numbers (“ICANN”) on the number of domains we register and the impact it may have on related revenues; our belief regarding the underlying platform for our domain services, our expectation regarding the trend of sales of domain names; our belief that, by increasing the number of services we offer, we will be able to generate higher revenues; our expectation regarding litigation; the potential impact of current and pending claims on our business; our valuations of certain deferred tax assets; our expectation to collect our outstanding receivables, net of our allowance for doubtful accounts; our expectation regarding fluctuations in certain expense and cost categories; our expectations to obtain additional financing to accelerate the Ting Internet footprint while sustaining liquidity; our expectations regarding our unrecognized tax; our expectations regarding cash from operations to fund our business; the impact of cancellations of or amendments to market development fund programs under which we receive funds, our expectation regarding our ability to manage realized gains/losses from foreign currency contracts; the impact of the COVID-19 pandemic on our business, operations and financial performance; and general business conditions and economic uncertainty. These statements are based on management’s current expectations and are subject to a number of uncertainties and risks that could cause actual results to differ materially from those described in the forward-looking statements. Many factors affect our ability to achieve our objectives and to successfully develop and commercialize our services including:

- Our ability to continue to generate sufficient working capital to meet our operating requirements;
- Our ability to further accelerate the expansion of the Ting Internet footprint, by obtaining additional financing;
- Our ability to service our debt commitments and preferred share commitments;
- Our ability to maintain a good working relationship with our vendors and customers;
- The ability of vendors to continue to supply our needs;
- Actions by our competitors;
- Our ability to attract and retain qualified personnel in our business;
- Our ability to effectively manage our business;
- The effects of any material impairment of our goodwill or other indefinite-lived intangible assets;
- Our ability to obtain and maintain approvals from regulatory authorities on regulatory issues;
- Our ability to invest in the build-out of fiber networks into selected towns and cities to provide Internet access services to residential and commercial customers while maintaining the development and sales of our established services;
- Adverse tax consequences such as those related to changes in tax laws or tax rates or their interpretations, including with respect to the impact of the Tax Cuts and Jobs Act of 2017 and the Organization for Economic Cooperation and Development ("OECD") model global minimum tax rules;
- The application of business judgment in determining our global provision for income taxes, deferred tax assets or liabilities or other tax liabilities given that the ultimate tax determination is uncertain;
- Our ability to effectively integrate acquisitions;
- Our ability to monitor, assess and respond to the rapidly changing impacts of the COVID-19 pandemic, geopolitical developments, economic impacts including rising inflation and interest rates. Our current assessment of expected impacts has been included below as part of the Opportunities, Challenges & Risks section;
- Our ability to collect anticipated payments from DISH in connection with the 10-year payment stream that is a function of the margin generated by the transferred subscribers over a 10-year period pursuant to the terms of the Asset Purchase Agreement dated August 1, 2020 between the Company and DISH Wireless LLC ("DISH") (the “DISH Purchase Agreement”);
- Our ability to meet the operational and financial drawdown milestones under the Unit Purchase Agreement with Generate TF Holdings, LLC, a Delaware limited liability company ("Generate"), which provides the Company with the ability to obtain additional financing to invest in the expansion of fiber networks;
- Pending or new litigation; and
- Factors set forth herein under the caption “Item 1A Risk Factors”.

This list of factors that may affect our future performance and financial and competitive position and the accuracy of forward-looking statements is illustrative, but it is by no means exhaustive. Accordingly, all forward-looking statements should be evaluated with the understanding of their inherent uncertainty. All forward-looking statements included in this document are based on information available to us as of the date of this document, and we assume no obligation to update these cautionary statements or any forward-looking statements, except as required by law. These statements are not guarantees of future performance.

We qualify all the forward-looking statements contained in this Annual Report on Form 10-K by the foregoing cautionary statements.

PART I

ITEM 1. BUSINESS

Overview

Our mission is to provide simple useful services that help people unlock the power of the Internet.

We accomplish this by reducing the complexity of our customers' experience as they access the Internet (at home or on the go) and while using Internet services such as domain name registration, email and other Internet services. In the prior year, we disclosed three operating and reportable segments: Fiber Internet Services, Domain Services and Mobile Services. During the first quarter of 2022, the Company completed a reorganization of its reporting structure into three operating and reportable segments: Fiber Internet Services, Platform Services and Domain Services. In the third quarter of 2022, the Company renamed its three operating and reportable segments to reflect their branded names: Ting, Wavelo and Tucows Domains. The change to our reportable operating segments was the result of a shift in our business and management structures that was completed during the first quarter of 2022. The operations supporting what was previously known as our Mobile Services segment have become increasingly operationally distinct between our mobile retail services and our platform services. As a result, commencing in the first quarter of 2022, our Chief Executive Officer ("CEO"), who is also our chief decision maker, reviews the operating results of Ting, Wavelo and Tucows Domains as three distinct segments in order to make key operating decisions as well as evaluate segment performance. Certain revenues and expenses disclosed under the Corporate category are excluded from segment earnings before interest, tax, depreciation and amortization ("EBITDA") results as they are centrally managed and not monitored by or reported to our CEO by segment, including Mobile Retail Services, eliminations of intercompany transactions, portions of Finance and Human Resources that are centrally managed, Legal and Corporate IT. We are now both organized and managed, and also report our financial results as three segments: Ting, Wavelo and Tucows Domains. The three segments are differentiated primarily by their services, the markets they serve and the regulatory environments in which they operate.

Our management regularly reviews our operating results on a consolidated basis, principally to make decisions about how we utilize our resources and to measure our consolidated operating performance. To assist us in forecasting growth and to help us monitor the effectiveness of our operational strategies, our management regularly reviews revenue for each of our service offerings in order to gain more depth and understanding of the key business metrics driving our business.

Ting

Ting and its wholly owned subsidiaries - Cedar and Simply Bits includes the provision of high-speed Internet access services to select towns throughout the United States, with further expansion underway to both new and existing markets. Our primary sales channel is through the Ting website. The primary focus of this segment is to provide reliable Fiber and Fixed Wireless Internet services to consumer and business customers. Revenues are all generated in the U.S. and are billed on a monthly basis and have no fixed contract terms.

As of December 31, 2022, Ting Internet had access to 96,000 owned infrastructure serviceable addresses, 20,000 partner infrastructure serviceable addresses and 35,000 active accounts under its management; compared to having access to 76,000 owned infrastructure serviceable addresses, 15,000 partner infrastructure serviceable addresses and 26,000 active accounts under its management as of December 31, 2021. These figures exclude the increase in serviceable addresses and accounts attributable to the Simply Bits acquisition.

Wavelo

Wavelo includes the provision of full-service platforms and professional services providing a variety of solutions that support Communication Services Providers ("CSPs"), including subscription and billing management, network orchestration and provisioning, and individual developer tools. Wavelo's focus is to provide accessible telecom software to CSPs globally, minimizing network and technical barriers and improving internet access worldwide. Wavelo's suite of flexible, cloud-based software simplifies the management of mobile and internet network access, enabling CSPs to better utilize their existing infrastructure, focus on customer experience and scale their businesses faster. Wavelo launched as a proven asset for CSPs, with DISH using Wavelo's Mobile Network Operating System ("MONOS") software to drive additional value within its Digital Operator Platform since 2021. More recently, Ting Internet has also integrated Wavelo's Internet Service Operating System ("ISOS") and Subscriber Management ("SM") software to enable faster subscriber growth and footprint expansion. The Wavelo segment also includes the Platypus brand and platform, our legacy billing solution for internet service providers (each an "ISP" and collectively, "ISPs"), that was previously reported under the Ting segment. Wavelo revenues from MONOS, ISOS, SM and professional services are all generated in the U.S. and our customer agreements have set contract lengths with the underlying CSP. Similarly, Platypus revenues are largely generated in the U.S., with a small portion earned in Canada and other countries.

Tucows Domains

Tucows Domains includes wholesale and retail domain name registration services, as well as value added services derived through our OpenSRS, eNom, Ascio, EPAG and Hover brands. We earn revenues primarily from the registration fees charged to resellers in connection with new, renewed and transferred domain name registrations. In addition, we earn revenues from the sale of retail domain name registration and email services to individuals and small businesses. Tucows Domains revenues are attributed to the country in which the contract originates, which is primarily in Canada and the U.S. for OpenSRS and eNom brands. Ascio domain services contracts and EPAG agreements primarily originate in Europe.

Our primary distribution channel is a global network of approximately 35,000 resellers that operate in over 150 countries and who typically provide their customers, the end-users of Internet-based services, with solutions for establishing and maintaining an online presence. Our primary focus is serving the needs of this network of resellers by providing the broadest portfolio of gTLD and the country code top-level domain options and related services, a white-label platform that facilitates the provisioning and management of domain names, a powerful Application Program Interface, easy-to-use interfaces, comprehensive management and reporting tools, and proactive and attentive customer service. Our services are integral to the solutions that our resellers deliver to their customers. We provide “second tier” support to our resellers by email, chat and phone in the event resellers experience issues or problems with our services. In addition, our Network Operating Center proactively monitors all services and network infrastructure to address deficiencies before customer services are impacted.

We believe that the underlying platforms for our services are among the most mature, reliable and functional reseller-oriented provisioning and management platforms in our industry, and we continue to refine, evolve and improve these services for both resellers and end-users. Our business model is characterized primarily by non-refundable, up-front payments, which lead to recurring revenue from renewals and positive operating cash flow.

Wholesale, primarily branded as OpenSRS, eNom, EPAG and Ascio, derives revenue from its domain registration service and from providing value-added services. The OpenSRS, eNom, EPAG and Ascio domain services manage 24 million domain names under the Tucows, eNom, EPAG and Ascio ICANN registrar accreditations and for other registrars under their own accreditations.

Value-added services include hosted email which provides email delivery and webmail access to millions of mailboxes, Internet security services, Internet hosting, WHOIS privacy, publishing tools and other value-added services. All of these services are made available to end-users through a network of 35,000 web hosts, ISPs and other resellers around the world. In addition, we also derive revenue by monetizing domain names which are near the end of their lifecycle through expiry auction sale.

Retail, primarily the Hover and eNom portfolio of websites, including eNom and eNom Central, derive revenues from the sale of domain name registration and email services to individuals and small businesses. Our retail domain services also include our Personal Names Service – based on over 36,000 surname domains – that allows roughly two-thirds of Americans to purchase an email address based on their last name. The retail segment now includes the sale of the rights to its portfolio of surname domains used in connection with our RealNames email service as well as our Exact Hosting Service, that provides Linux hosting services for individual and small business websites.

Additional information about segments can be found in “Note 19 – Segment Reporting” of the Notes to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report.

Intellectual Property

We believe that we are well positioned in the wholesale domain registration and email markets due in part to our highly-recognized “Tucows”, “OpenSRS”, “Ascio” and “eNom” brands and the respect they confer on us as a defender of end-user rights and reseller-friendly approaches to doing business. We were among the first group of 34 registrars to be accredited by ICANN in 1999, and we remain active in Internet governance issues.

Our success and ability to compete depend on our ability to develop and maintain the proprietary aspects of our brand name and technology. We rely on a combination of trademark, trade secret and copyright laws, as well as contractual restrictions to protect our intellectual property rights.

We have registered the Tucows trademark in the United States, Canada and the European Union and we register additional service marks and trademarks as appropriate and where such protection is available.

We seek to limit disclosure of our intellectual property by requiring all employees and consultants with access to our proprietary information to commit to confidentiality, non-disclosure and work-for-hire agreements. All of our employees are required to sign confidentiality and non-use agreements, which provide that any rights they may have in copyrightable works or patentable technologies accrue to us. Before entering into discussions with potential vendors and partners about our business and technologies, we require them to enter into a non-disclosure agreement. If these discussions result in a license or other business relationship, we also generally require that the agreement containing the parties’ rights and obligations include provisions for the protection of its intellectual property rights.

Customers

Within the Ting segment, customers are a very broad mix of consumers, small businesses and corporations seeking high-speed Internet Services. Wavelo offers services to a small number of CSPs focused in the U.S. along with their biggest external customer being DISH and internal customer being Ting, until such time we expand these offerings to other MVNOs or MNOs. The majority of the customers to whom we provide services as Tucows Domains are generally either web hosts or ISPs. A small number of customers are consultants and designers providing our services to their business clients, or retail consumers registering a personal domain name.

No customer represented more than 10% of our consolidated revenues in any of the last three fiscal years.

While our customers are capitalizing on the growth in Internet usage and the demand for new services, they also face significant competition from numerous other service providers with competitive or comparable offerings. This has led customers within our Wavelo and Tucows Domains segments to focus on core competencies, and increasingly seeking to outsource non-core services. Outsourcing enables these customers to better focus on customer acquisition and retention efforts by eliminating the need to own, develop and support non-core applications in-house. In the case of Tucows Domains, this supports our Value-Added Services offerings, and for Wavelo this supports our go-to-market efforts to offer full-service platforms providing a variety of solutions that support CSPs, including subscription and billing management, network orchestration and provisioning, and individual developer tools.

Seasonality

During the summer months and certain other times of the year, such as major holidays, Internet usage often declines. As a result, some of our services (such as OpenSRS, eNom, Ascio, and Hover) may experience reduced demand during these times. For example, our experience shows that new domain registrations decline during the summer months and around the year-end holidays. In addition, the first quarter of the fiscal year will often see higher billed revenues in regard to domain names due to most renewals occurring on January 1. The demand for Ting and Wavelo services is not impacted by seasonality. However, in certain Ting markets we operate in, construction activities associated with adding new serviceable addresses can be impacted by seasonal climate.

Competition

Our competitors may be divided into the following groups:

Ting

- U.S. Broadband providers such as AT&T, Comcast, Verizon and CenturyLink, who primarily compete with Ting Internet Services.

Tucows Domains

- Retail-oriented domain registrars, such as GoDaddy and Web.com, who compete with our Reseller customers in wholesale domain services and with Hover.

- Wholesale-oriented domain registrars, such as GoDaddy, who market services to resellers such as our customers.

- Wholesale Email Service providers, such as Google, Microsoft, Bluetie and MailTrust.

Wavelo

- Traditional BSS/OSS providers such as Amdocs, Netcracker, Ericsson, Optiva and Sonar Software, who primarily compete with Wavelo’s platforms and services.

We expect to continue to experience significant competition from the competitors identified above and, as our business continues to develop, we expect to encounter competition from other providers. Service providers, Internet portals, web hosting companies, email hosting companies, outsourced application companies, country code registries and major telecommunication firms may broaden their services to include services we offer.

We believe the primary competitive factors in Ting are:

- Providing a superior customer service experience;

- Providing a simple and friendly user experience through more usable web and application interfaces and more fair and transparent pricing;

- Being agnostic on internet hardware, including network routers; and

- Providing superior technology, speed and reliability with fiber to the home services.

We believe the primary competitive factors in Tucows Domains are:

- Providing superior customer service by anticipating the technical requirements and business objectives of resellers and providing them with technical advice to help them understand how our services can be customized to meet their particular needs;

- Providing cost savings over in-house solutions by relieving resellers of the expense of acquiring and maintaining hardware and software and the associated administrative burden;
- Enabling resellers to better manage their relationships with their end-users;
- Facilitating scalability through an infrastructure designed to support millions of transactions across millions of end-users; and
- Providing superior technology and infrastructure, consisting of industry-leading software and hardware that allow resellers to provide these services to their customers without having to make substantial investments in their own software or hardware.

We believe the primary competitive factors in Wavelo are:

- Event-based architecture is the foundation to our modern platforms, which means less network bandwidth consumption and less central processing unit ("CPU") utilization, cutting costs and speeding up delivery, enabling new features, functionality and better customer experiences;
- Wavelo's product suite can transform CSPs from top to bottom. Our product suite is modular by nature, so our platforms can work just as well together as they do independently, and alongside other best-in-class software - to fill specific gaps in operations, network provisioning, subscriber management, or anything in between; and
- CSPs are able to select the best of breed software and use it where they please, versus being forced into a traditional BSS/OSS software stack that forces them to use that providers' version of software to have full functionality.

Although we encounter pricing pressure in many markets in which we compete, we believe the effects of that pressure are mitigated by the fact that we deliver a high degree of value to our customers through our business and technical practices. We believe our status as a trusted supplier also allows us to mitigate the effects of this type of competition. We believe that the long-term relationships we have made with many customers results in a sense of certainty that would not be available to those customers through a competitor.

Human Capital Resources

Employee Profile

At Tucows, we strive to maintain a best-in-class workplace where our employees can proudly bring their whole selves to work. We believe that by creating an intentional, inclusive culture, our people have more opportunities to thrive every day.

As of December 31, 2022, we had approximately 1,020 full-time employees and 80 contracted employees globally. As a global Internet and technology company, we have a wide range of employees, including management professionals, technicians, engineers, and call center employees. None of our employees are currently represented by a labor union. We consider our relations with our employees to be good. Approximately 55% of our employees are based in Canada, followed by 35% based in the U.S., and the remaining 10% are spread across countries in Europe and other regions. Of our employees, approximately 450 support our Ting segment, 180 support our Wavelo segment, and approximately 260 support our Tucows Domains segment. The remaining 210 employees support corporate functions and shared technology services used across the Tucows group.

We offer competitive compensation in addition to employee stock options, physical and mental health benefits, learning allowances, future planning programs for employee Registered Retirement Savings Plans ("RRSP/401k") contributions, as well as generous vacation, maternity, paternity and adoption leaves for our employees.

As an organization, Tucows is proud to foster a flexible, remote-first work environment that empowers employees to find a work style that fits their individual circumstances. Some employees perform work in other environments, including fulfillment centers, customers’ homes or businesses to perform service installation, and in the field to build out our network facilities.

As a response to the COVID-19 pandemic, we have established a Fiber Internet install solution for our employees and customers that minimizes risks associated with person-to-person contact. We have also implemented a vaccination policy requiring those employees who work from a Company office, meet in person with customers or travel by plane or train for business purposes to be fully vaccinated.

Employee Wellness

Tucows has introduced a series of initiatives that prioritize the mental and personal well-being of our employees and destigmatize mental health conversations at work. These initiatives include daily mindfulness sessions open to all employees, as well as company-wide memberships to mindfulness tools that allow employees to prioritize their well-being whenever they need.

The Company also supports eight Employee Resource Groups ("ERGs") focused on 2SLGBTQ+, caregivers, women leadership, Canadian newcomers, neurodiversity, BIPOC, mental health and racial justice and equality. These volunteer groups connect employees with shared characteristics, life experiences and enable them to engage in activities that advance our culture and contribute to our success.

Diversity and Inclusion

As an organization, Tucows believes in the importance of driving meaningful change and impact; from its products to its people, everything is approached with intentionality. Our people philosophy is no different. To us, inclusion is not a standalone effort; it is intrinsically part of our employee experience, which helps us create a space where our team can proudly and comfortably bring their full selves to work. This principle is found throughout the entire company, and is especially apparent in Tucows’ benchmark-free people philosophy. The Company has invested in resources that build community and foster inclusivity within the organization.

Cybersecurity

Our industry is vulnerable to cybersecurity risks that are growing in both frequency and complexity. Tucows, along with our suppliers, employs systems and network infrastructure that are subject to cyberattacks, which may include theft of assets, unauthorized access to proprietary or sensitive information, destruction or corruption of data, ransomware attacks, or operational disruption. A significant cyberattack against our, or our suppliers', critical network infrastructure and supporting information systems could result in service disruptions, litigation, loss of customers, incurring significant costs, and/or reputational damage.

Our Board of Directors (the "Board") has primary oversight responsibility for all aspects of operational risk including cybersecurity. As part of its oversight role, the Board regularly reviews management's risk assessments as well as plans to prevent, detect and respond to ongoing security threats. Our ongoing success depends on protecting our sensitive data, including personal information about our customers and employees. We rely on security awareness training, policies, procedures and IT systems to protect this information.

Compliance with Government Regulations

Ting

Our Fiber Internet services are also subject to a number of regulations and commitments. The Federal Communications Commission ("FCC") frequently considers imposing new broadband-related regulations such as those relating to an Open Internet. States and localities also consider new broadband-related regulations, including those regarding government-owned broadband networks, net neutrality and connectivity during COVID-19. Additionally, as an ISP, we must implement certain network capabilities to assist law enforcement in conducting surveillance of persons suspected of criminal activity. From time to time, the FCC considers imposing new regulatory obligations on ISPs. We are committed to an Open Internet and do not block, throttle or engage in paid or affiliated prioritization, and have committed not to block, throttle or discriminate against lawful content.

Tucows Corporate - Mobile Services

The FCC and other federal, state and local, as well as international, governmental authorities have jurisdiction over our business. The licensing, construction, operation, sale and interconnection arrangements of wireless telecommunications systems are regulated by the FCC and, depending on the jurisdiction, international, state and local regulatory agencies. In particular, the FCC imposes significant regulation on licensees of wireless spectrum with respect to how radio spectrum is used by licensees, the nature of the services that licensees may offer and how the services may be offered, and resolution of issues of interference between spectrum bands.

Wavelo

Our Wavelo Segment is less subject to government regulations and commitments because it enables subscription and billing management, network orchestration and provisioning, and individual developer tools. Outside of *General Data Protection Regulation ("GDPR"),* which creates obligations around the procurement, processing, publication and sharing of personal data, there is limited regulation or commitment to government bodies for software.

Tucows Domains

Our Tucows Domains segment is subject to regulation ICANN, federal and state laws in the U.S. and the laws of other jurisdictions in which we do business. These include:

ICANN: The registration of domain names is governed by ICANN. ICANN is a multi-stakeholder private sector, not-for-profit corporation formed for the express purposes of overseeing a number of Internet related tasks, including management of the DNS, allocation of IP addresses, accreditation of domain name registrars and registries and the definition and coordination of policy development for all of these functions. Tucows, eNom, EPAG and Ascio are each individually accredited by ICANN as domain name registrars and thus our ability to offer domain name registration products is subject to our ongoing relationship with, and accreditation by, ICANN.

Country Code Top-Level Domain ("ccTLD") Authorities: The regulation of ccTLDs is governed by national regulatory agencies of the country underlying the specific ccTLDs, such as Canada (.ca). Our ability to sell ccTLDs is dependent on our ability to maintain accreditation in good standing with these various international authorities.

Communications Decency Act ("CDA"): The CDA generally protects online service providers, such as Tucows, from liability for certain activities of their customers, such as posting of defamatory or obscene content, unless the online service provider is participating in the unlawful conduct. Notwithstanding the general protections from liability under the CDA, we may nonetheless be forced to defend ourselves from claims of liability covered by the CDA, resulting in an increased cost of doing business.

Digital Millennium Copyright Act ("DMCA"): The DMCA provides recourse for owners of copyrighted material who believe that their rights under U.S. copyright law have been infringed on the Internet. Under the DMCA, we generally are not liable for infringing content posted by third parties. However, if we receive a proper notice from a copyright owner alleging infringement of its protected works by web pages for which we provide hosting services, and we fail to expeditiously remove or disable access to the allegedly infringing material, fail to post and enforce a digital rights management policy or a policy to terminate accounts of repeat infringers, or otherwise fail to meet the requirements of the safe harbor under the DMCA, the owner may seek to impose liability on us.

General Data Protection Regulation: GDPR creates obligations around the procurement, processing, publication and sharing of personal data. Potential fines for violations of certain provisions of GDPR reach as high as 4% of a company's annual total revenue, potentially including the revenue of its international affiliates. The solutions we develop for GDPR-compliance may not be adequate in the views of regulatory authorities or ICANN, which may cause the loss of WHOIS privacy revenue or increase our costs of developing compliant solutions or subject us to litigation, liability, civil penalties, or loss of market share. As the privacy laws and regulations around the world continue to evolve, these changes could adversely affect our business operations in similar ways.

Several bodies of law may be deemed to apply to us with respect to various customer activities. Because we operate in a relatively new and rapidly evolving industry and since our industry is characterized by rapid changes in technology and in new and growing illegal activity, these bodies of laws are constantly evolving. As a host of content through our Exact Hosting business, and to a lesser extent as a registrar of domain names services we may be subject to potential liability for illegal activities by our resellers' customers on their websites. We provide an automated service that enables users to register domain names. We do not monitor or review, nor does our accreditation agreement with ICANN require that we monitor or review, the appropriateness of the domain names we register for our customers or the content of their websites, and we have no control over the activities in which these customers engage. While we have policies in place to terminate domain names or to take other action if presented with evidence of illegal conduct, customers could nonetheless engage in prohibited activities without our knowledge.

Corporate Information

Our principal place of business is located in Canada.

We were incorporated under the laws of the Commonwealth of Pennsylvania in November 1992 under the name Infonautics, Inc. In August 2001, we completed our acquisition of Tucows Inc., a Delaware corporation, and we changed our name from Infonautics, Inc. to Tucows Inc. Our principal executive offices are located at 96 Mowat Avenue, Toronto, Ontario, M6K 3M1 Canada. Our telephone number is (416) 535-0123. We also have offices in Germany, Denmark and the U.S.

We are subject to the filing requirements of the Securities Exchange Act of 1934 (the "Exchange Act"). Therefore, we file annual reports, periodic reports, proxy statements and other information with the Securities and Exchange Commission (the "SEC"). The SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically at www.sec.gov.

Our website address is tucows.com. We make available through our website, free of charge, copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as amended as soon as reasonably practicable after filing such material electronically or otherwise furnishing it to the SEC. The information on the website listed above is not and should not be considered part of this Annual Report and is not incorporated by reference in this document.

Information about our Executive Officers and Key Employees

The following table sets forth the names, ages and titles of persons currently serving as our executive officers and key employees.

Name	Age	Title
Elliot Noss	60	President and Chief Executive Officer, Tucows Inc. and Ting
Davinder Singh	48	Chief Financial Officer
Dave Woroch	60	Chief Executive Officer of Tucows Domains
Bret Fausett	59	Chief Legal Officer
Michael Koenig	38	Chief Operating Officer
Justin Reilly	35	Chief Executive Officer, Wavelo

Elliot Noss has served as our President and Chief Executive Officer of Tucows Inc. since May 1999 and Ting since 2022 and served as Vice President of Corporate Services for Tucows Interactive Limited, which was acquired by Tucows in May 1999, from April 1997 to May 1999.

Davinder Singh has served as our Chief Financial Officer since 2017, having previously served as Vice President Finance since joining the Company in 2016. Prior to joining the Company, Mr. Singh spent eight years at KPMG LLP primarily focusing on public company audits in the technology field. After leaving KPMG LLP, Mr. Singh joined TELUS and held progressive roles, including Chief Financial Officer of TELUS International. Mr. Singh is a Chartered Professional Accountant with the Institute of Chartered Professional Accountants of British Columbia. Mr. Singh also sits on the Board of Hootsuite and serves as its audit committee chair. Hootsuite is a privately held social media management company.

David Woroch currently serves as our Chief Executive Officer of Tucows Domains Services and has led our Domains business since 2014 and oversees OpenSRS, eNom, Ascio and EPAG (wholesale), Hover (retail) and the premium domain portfolio. Mr. Woroch joined Tucows in March 2000 after thirteen years at IBM and has helped build Tucows' sales, marketing, business development, product management and technical support capabilities.

Bret Fausett joined Tucows in September 2017 as our Chief Legal Officer. Prior to joining Tucows, Mr. Fausett worked for Uniregistry, where he had served as General Counsel for six years. Prior to Uniregistry, Mr. Fausett worked as outside legal counsel to a number of domain industry related companies.

Michael Koenig joined Tucows in April 2022 as the Chief Revenue Officer of Wavelo before moving into Tucows' Chief Operating Officer role in October 2022. Prior to joining Tucows, Mr. Koenig served as the Chief Operating Officer of two organizations, Sweet and Time Doctor for five and two years, respectively.

Justin Reilly joined Tucows in September 2019 and currently serves as our Chief Executive Officer of Wavelo. Prior to joining Tucows, Justin was Head of Product & Customer Experience Innovation at Verizon, as well as founder of a number of companies with consumer grade product and machine learning at their core.

ITEM 1A. RISK FACTORS

Our business faces significant risks. Some of the following risks relate principally to our business and the industry and statutory and regulatory environment in which we operate, including those highlighted in this section and summarized below. Other risks relate principally to the securities markets and ownership of our stock. As a result, this risk factor summary together with a more comprehensive discussion of risks and uncertainties set forth following this section under the heading "Item 1A. Risk Factors" as well as elsewhere in this Annual Report on Form 10-K. The risks described below may not be the only risks we face. Additional risks that we do not yet know of or that we currently think are immaterial may also impair our business operations. If any of the events or circumstances described in the following risk factors actually occur, our business, financial condition or results of operations could suffer, and the trading price of our common stock could decline.

Risk Factor Summary

- If we do not continue to provide services that are useful to consumers, we may not remain competitive and be forced to reduce our prices, and our revenues and operating results could be adversely affected.
- Our service offerings may not be successful if we are unable to maintain existing customer relationships or establish new relationships.
- Our service offerings may be limited in ability to grow their respective businesses and customer base unless we can continue to manage our vendor relationships and supply chain to obtain valuable products and service options to offer to our customers.
- Our service offerings may experience a material adverse effect should the nature of the Internet fundamentally change or fail to grow and expand internationally as a viable medium for commerce. This includes changes in current navigation practices, technologies or marketing practices.
- Our ongoing investment in new businesses, services and technologies and divestment of old businesses and services is inherently risky, and could disrupt our current operations.
- Our ability to accurately forecast construction and marketing costs as well as manage the cost per serviceable address within expected targets will impact our return on investment on the Ting Internet footprint.
- The Company's success depends on our ability to keep pace with technological advances. Failure to respond to rapid technological changes in the industries we serve or difficulty in scaling or adapting existing architecture could result in the loss of customers and cause us to incur additional expenses.
- We rely on network operators, bandwidth providers, data centers and other vendors in providing services to our customers, and any system failure or interruption in the services provided by either our Company or third parties could harm our ability to operate our business and damage our reputation.
- We are parties to agreements with other unrelated parties for certain business operations and to license third-party technologies. Any claims against these unrelated parties that we rely upon for business operations and/or licensed technology could result in the need to incur substantial costs to replace technology or services which could delay and increase the cost of product and service developments.
- Our systems face security risks, and any compromise of the security of these systems could disrupt our business, damage our reputation and result in the disclosure of confidential information, legal liability for damages and loss of customers.
- Disputes concerning the ownership or rights to use intellectual property and litigation involving other rights of third parties could be costly and time-consuming to litigate, may distract management from operating the business, and may result in us paying significant damage awards, losing significant rights and our ability to operate all or a portion of our business.
- Our service offerings are exposed to risks associated with credit card and other online payment chargebacks, fraud and new payment methods.
- Our indebtedness could adversely affect our ability to raise additional capital to fund our operations, our ability to operate our business, execute our strategy, divert our cash flow from operations for debt payments, and prevent us from meeting our debt obligations.
- Our debt agreements impose significant operating and financial restrictions on us and our subsidiaries, which may prevent us from capitalizing on business opportunities across the Company. Breaching these agreements could have a materially adverse impact on the Company.
- Our preferred share unit financing arrangement could adversely affect our financial condition, our ability to operate our business, divert our cash flow from operations for debt payments, and prevent us from meeting our debt obligations. Our preferred share financing agreement imposes predetermined operational and financial drawdown milestones on our Ting segment, which may prevent us from obtaining additional financing under such preferred unit financing arrangement. In addition, the Company may need additional financing to further accelerate the expansion of the Ting Internet footprint.
- The international nature of our businesses and operations expose us to additional risks that could harm our business, operating results, and growth strategy; including risks related to taxation and foreign currencies fluctuations.
- Unanticipated changes in effective tax rates or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our operating results and financial condition.
- We could be subject to changes in tax rates, the adoption of new U.S. or international tax legislation, or exposure to additional tax liabilities. This could discourage the registration or renewal of domain names.
- We have identified a material weakness in our internal control over financial reporting that, if not properly remediated, could adversely affect our business and results of our operations.
- The Company's success depends on the continued service and availability of key personnel.
- Our business depends on our strong brands. If we are not able to maintain and enhance our brands, our ability to expand our customer base will be impaired and our business and operating results will be harmed.
- If we fail to maintain an effective system of disclosure controls and internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired which could, among other things, negatively impact our ability to raise financing.
- We are subject to minimum purchase commitments with our Mobile Services MNO partner and some Ting Internet partner network providers, which could significantly increase our cost of revenues should we be unable to grow our respective customer base.
- The use of ICANN's Oversight of Domain Name Registration System and domain name registration involve charges and fees. If these fees increase, this may have a significant impact on our operating results.
- Data protection regulations may impose legal obligations on us that we cannot meet or that conflict with our ICANN contractual requirements.
- The law relating to the use of and ownership of intellectual property on the internet as well as the liability of internet services companies for data and content carried on or disseminated through their network's websites is currently unsettled and could expose us to unforeseen liabilities. This could negatively affect the public's perception of our corporate image.
- Our service offerings may become subject to new government regulations that may be costly to adopt, and may adversely affect our business prospects, future growth or results of operations.
- Our Ting segment relies on Network Operators. Failure by a Network Operator to obtain the proper licenses and governmental approvals from regulatory authorities would cause us to be unable to successfully operate those businesses.
- We may experience unforeseen or potentially uninsured liabilities or losses in connection with our Domain Services business, including the risk that our standard agreements with customers may not be enforceable. This could negatively impact our financial results.
- Our share price may be volatile, which may make it difficult for shareholders to sell their shares of common stock when they want to, at an attractive price.
- We cannot guarantee that our recently announced stock buyback program will be partially or fully consummated or that such program will enhance the long-term value of our share price.
- Economic, political, and market conditions may adversely affect our businesses, financial condition, and operating results.
- Our business and financial performance could be adversely affected, directly or indirectly, by both global and local climate and environmental natural disasters, health crises and other disruptive activities.

RISKS RELATED TO OUR BUSINESS AND INDUSTRY

We face intense competition and consolidation in the industries and markets we serve. If we do not continue to provide services that are useful to users, we may not remain competitive and be forced to reduce our prices, and our revenues and operating results could be adversely affected.

The industries and markets we serve are characterized by intense competition and consolidation. Be it the U.S. Internet services industry serviced by our Ting segment, the U.S. wireless communications industry serviced by Tucows Corporate - Mobile Services, the BSS/OSS software industry serviced by our Wavelo segment or the Internet Services and domain registration market serviced by our Tucows Domains segment; these industries and markets have become extremely competitive and are characterized both by the entrance of new competitors or the expansion of services offered by existing competitors. Our brands compete with incumbent service providers and their affiliate brands. Most of our competitors have substantially greater financial, technical, personnel and marketing resources and a larger market share than we do in all of our segments, and we may not be able to compete successfully against them. Due to their size and bargaining power, they may obtain discounts for facilities, equipment, devices, content, and services, potentially placing us at a competitive disadvantage. As consolidation in these industries creates even larger competitors, our competitors' purchasing and cost structure advantages may increase further, hampering our efforts to attract and retain customers. They may use their significant market power and greater resources to introduce additional products and service features (or lower prices) that we are unable to offer at similar cost or price to the customer. This may impact our ability to win over significant market share from these competitors. To remain competitive, we may be compelled to reduce the prices for our services or augment our service offerings. Any subsidies or price reductions that we offer in order to remain competitive may reduce our margins and revenues, and may adversely affect our profitability and cash flows. Lower prices may also make our services more accessible to new, lower-value customers with less disposable income available to spend on our services. In addition, if prices decline, customers without long-term contracts may change their service providers more frequently, thereby increasing our churn and resulting in higher acquisition costs to replace those customers. A shift to lower value or less loyal customers could have an adverse impact on our results of operations and cash flows.

Our service offerings may not be successful if we are unable to maintain existing customer relationships or establish new relationships.

Maintaining our existing customer relationships and being able to establish new relationships is critical to our success across our segments, regardless if that customer is an end consumer wanting Gigabit Fiber or Fixed Wireless internet service to their home, a telecommunication provider, or a leading global domain reseller. Long-term success is dependent upon our sustained ability to generate sufficient revenue from our customers based on their use of our services and ability to respond to churn by retaining existing customers and adding new customers. With significant investments across our segments, be it in the continued build out of our Fiber Network across the United States, our development of our Wavelo or Domains Platforms, our performance and financial results could be negatively impacted if we are unable to realize the return on these investments by failing to attract customers or retain customers to the services we offer.

Our Retail Mobile Services has limited influence over the small subset of subscribers on the MNO contract retained by the Company as part of the DISH Purchase Agreement, and we may be unable to effectively respond to churn or attract a sufficient level of new customers to meet the minimum commitments with this MNO partner. This could incur significant and recurring penalties until such a time that the contract is complete. These penalties would negatively impact our operational performance and financial results if enforced by the MNO. Based on the size of the small subset of customers retained as part of the DISH Purchase Agreement and their limited network usage, the Company expects to incur MNO penalties through the majority of the year ending December 31, 2023 ("Fiscal 2023"), and thereafter.

Regarding Wavelo, DISH is our main customer and represents majority of our revenues until such time that we are able to scale our services to other customers interested in our enablement services. With all our majority of our revenues concentrated with one customer, we are exposed to significant risk if we are unable to maintain this customer relationship or establish new relationships with other MVNOs in the future. Additionally, our revenues are directly tied to the subscriber volumes of DISH's MVNO or MNO networks, so our profitability is contingent on the ability of DISH to continue to add subscribers onto our platform. If any of these events occur, our operational performance and financial results may be adversely affected.

Our service offerings may be limited in ability to grow their respective businesses and customer base unless we can continue to manage our vendor relationships and supply chain to obtain valuable products and service options to offer to our customers.

In order to remain competitive, we must provide a multitude of valuable products and services to our customers. To enable this, we need to continue to manage our vendor relationships and supply chain to ensure we are able to obtain valuable inventory, services and products across our segments. In particular, we need to obtain MNO network capacity for our Mobile Services, fiber optic cable, installation equipment, ONT and router inventory, third party network capacity for our Ting segments, as well as a multitude of domain name registration options in the form of TLDs/ccTLDs for our Tucows Domains segment. Any change in our ability, or the ability of third parties with whom we contract, to provide these products and services could adversely affect our operations and financial performance.

In our Retail Mobile Services, the fact that we now retain control over such a small subset of our historical subscriber base and that all of those customers are fixed to one MNO network could hinder our ability in the future to negotiate favorable rates and access to the mobile services mentioned above.

In our Tucows Domains segment, each registry typically imposes a fee in association with the registration of each domain name and any increases in fees could adversely impact our business. For example, Verisign, the registry for .com, presently charges a $8.97 fee for each .com registration and ICANN currently charges a $0.18 fee for each .com domain name registered in the gTLDs that fall within its purview. We have no control over these agencies and cannot predict when they may increase their respective fees. An amendment to the registry agreement between ICANN and Verisign was approved by the U.S. Department of Commerce in November 2018. The amendment confirms that Verisign will operate the .com registry until 2024 and permits Verisign to pursue with ICANN an up to 7 percent increase in the prices for .com domain names, in each of the last four years of the six-year term of the .com Registry Agreement. The changes also affirm that Verisign may not vertically integrate or operate as a registrar in the .com top level domain. Verisign acted on this ability to raise pricing during the year ended December 31, 2022 ("Fiscal 2022"), increasing our cost of .com registrations by 6.9 percent, relative to the prior year.

Our service offerings may experience a material adverse effect should the nature of the Internet fundamentally change or fail to grow and expand internationally as a viable medium for commerce. This includes changes in current navigation practices, technologies or marketing practices.

The success of all of our segments depends on the continued development, acceptance and widespread access to the Internet, and its existing domain system and infrastructure as a foundational resource for communication and commerce.

In our Ting segment, a number of factors could prevent the continued growth and acceptance of symmetrical gigabit Internet infrastructure and service as a medium for faster Internet communication, including (a) the unwillingness of companies and customers to shift their purchasing from traditional ISP vendors to alternative vendors like Ting Fiber; (b) Fiber infrastructure may not be able to support the demands placed on it, and its performance and reliability may decline as usage grows; or (c) where the development of alternative, wireless technologies (such as 5G) that could provide a similar or reasonably acceptable Internet speed and service without a fixed connection/physical network. Any of these issues could slow the growth of the adoption of Fiber Internet, which could limit our growth and revenues.

In our Tucows Domains segment, the domain name registration industry continues to develop and adapt to changing technology and the demands of individual governments. These developments may include changes in the administration or operation of the Internet, including (a) the creation and institution of alternate systems for directing Internet traffic without the use of the existing domain system or (b) systems under local government control that splinter from, or thwart the operation of, the Internet. Systems existing outside the domain name system are not subject to ICANN accreditation requirements and restrictions. Other competitors have attempted to introduce naming systems that use keywords rather than traditional domains. The widespread acceptance of any alternative systems and Internet navigation practices could eliminate the need to register a domain to establish an online presence and could materially adversely affect our business, financial condition and results of operations.

Additionally, we believe that a major source of growth for Internet-based companies will come from individuals and businesses outside the U.S. where Internet access and use is currently less prevalent. A substantial number of our resellers are currently based outside the U.S. and we plan to grow our business in other countries. If Internet usage in these jurisdictions does not increase as anticipated, or if governments prohibit the registration and use of domain names or certain classes of domain names, our revenues may not grow as anticipated.

Our ongoing investment in new businesses, services and technologies and divestment of old businesses and services is inherently risky, and could disrupt our current operations. We may not be able to realize the intended and anticipated benefits from our investments, acquisitions and agreements, which could affect the value of these decisions to our business and our ability to meet our financial obligations and targets in the short or medium term.

We have and expect to continue to acquire companies, assets or the rights to technologies in the future in order to develop new services or enhance existing services, to enhance our operating infrastructure, to fund expansion, to respond to competitive pressures or to acquire complementary businesses across all four of the segments we serve. Entering into these types of arrangements entails many risks, any of which could materially harm our business, including: the diversion of management’s attention from other business concerns; the failure to effectively integrate the acquired technology or company into our business; the incurring of significant acquisition costs; the loss of key employees from either our current business or the acquired business; the assumption of significant liabilities of the acquired company; inability to obtain the appropriate technical and operational resources; and unanticipated local or federal regulatory changes that could cause us to fail to realize the anticipated benefits of such investments. Any of the foregoing or other factors could harm our ability to achieve anticipated levels of profitability from acquired businesses or to realize other anticipated benefits of acquisitions or return of capital on our investments.

For example, in Corporate, as part of the DISH Purchase Agreement, the Company is entitled to a 10-year payment stream that is a function of the margin generated by the transferred subscribers over the 10-year period. With subscribers able to accept offers, plans or pricing from DISH, this consideration structure may not prove to be successful or profitable in the long-term to us if the existing subscriber base churns at an above average rate upon acquisition by DISH. Additionally, given DISH controls the revenues and costs incurred associated with the acquired subscribers, there could arise a situation where profitability for the subscriber base is diminished either by lower price points or cost inflation. If any of these events occur, our operational performance and financial results may be adversely affected.

We may not be able to identify or consummate any future acquisitions on favorable terms, or at all. If we do effect an acquisition, it is possible that the financial markets or investors will view the acquisition negatively. No assurance can be given that such investments will be successful and will not adversely affect our financial condition and operating results.

The Company's success depends on our ability to keep pace with technological advances. Failure to respond to rapid technological changes in the industries we serve or difficulty in scaling or adapting existing architecture could result in the loss of customers and cause us to incur additional expenses.

In our Ting segment, currently there is no Internet access technology that comes close to the speed, reliability, scalability and value of fiber-optics. However, it’s possible that another medium that’s either better or more economically/easily deployed could be developed in the longer term, or wireless could be improved enough to supplant the need for fiber in certain types of installations, like multi-family units, that would impact Ting Fiber’s ability to grow. To be successful as we continue to build out the Ting Fiber network in communities across the U.S. and bring customers onto the network we must ensure that our network infrastructure performs well and is reliable. The greater the user traffic and the greater the complexity of our services, the more computing power we will need. We have spent and expect to continue to spend substantial amounts on the purchase of equipment to enable our network infrastructure to handle increased traffic. This expansion is expensive and complex and could result in inefficiencies or operational failures. If we do not expand successfully, or if we experience inefficiencies and operational failures, the quality of our services and our customers’ experience could decline. This could damage our reputation and lead us to lose current and potential customers. Cost increases, loss of traffic or failure to accommodate new technologies or changing business requirements could harm our operating results and financial condition.

In our Wavelo segment, the U.S. wireless communications industry is experiencing rapid growth of new technologies, products and services. We cannot predict which of many possible future technologies, products, or services will be important to maintain our competitive position or what expenditures we will be required to make in order to develop and provide these technologies, products or services. To the extent we do not keep pace with technological advances or fail to timely respond to changes in the competitive environment affecting our industry, we could lose market share or experience a decline in revenue, cash flows and net income from our platform and other professional services (both retail and platform related services). As a result of the financial strength and benefits of scale enjoyed by some of our competitors, they may be able to offer services at lower prices than we can, thereby adversely affecting our revenues, growth and profitability.

In our Tucows Domains segment, the Internet and e-commerce are characterized by rapid technological change. Sudden changes in user and customer requirements and preferences, the frequent introduction of new applications and services embodying new technologies and the emergence of new industry standards and practices could make our applications, services and systems obsolete. The emerging nature of applications and services in the Internet application and services industry and their rapid evolution will require that we continually improve the performance, features and reliability of our applications and services. Our success will depend, in part, on our ability: to develop and license new applications, services and technologies that address the increasingly sophisticated and varied needs of our current and prospective customers; and to respond to technological advances and emerging industry standards and practices on a cost-effective and timely basis. The development of applications and services and other proprietary technology involves significant technological and business risks and requires substantial expenditures and lead-time. We may be unable to use new technologies effectively or adapt our internally developed technology and transaction-processing systems to customer requirements or emerging industry standards in a timely manner, or at all. Our internal development teams may also be unable to keep pace with new technological developments that affect the marketplace for our services. In addition, as we offer new services and functionality, we will need to ensure that any new services and functionality are well integrated with our current services, particularly as we offer an increasing number of our services as part of bundled suites. To the extent that any new services offered by us do not interoperate well with our existing services, our ability to market and sell those new services would be adversely affected and our revenue level and ability to achieve and sustain profitability might be harmed. Updating technology internally and licensing new technology from third parties may require us to incur significant additional capital expenditures.

Our ability to accurately forecast construction and marketing costs as well as manage the cost per serviceable address within expected targets will impact our return on investment on the Ting Internet footprint.

The build-out of our Fiber network requires significant costs to be incurred ahead of revenue generation, including design, procurement of materials, construction of primary infrastructure and customer installation. Our ability to accurately forecast these costs and execute an efficient construction plan will impact the returns that we are ultimately able to realize. Our costs to build out segments of the Ting Internet footprint are also impacted by factors outside of our control such as material prices, general price inflation, weather conditions, labor markets, local permitting and regulation changes. Our ability to generate sufficient investment returns is also dependent upon generating sufficient customer penetration on completed network segments over time, which also requires investments ahead of revenue generation in the form of marketing and other customer acquisition costs. We continuously monitor our expenditures and adjust accordingly to achieve our targets.

We rely on network operators, bandwidth providers, data centers and other vendors in providing services to our customers, and any system failure or interruption in the services provided by either our Company or third parties could harm our ability to operate our business and damage our reputation.

In our Ting segment, we rely on the continuing operation of our Fiber Network. Any damage to or failure of our network facilities could result in interruptions in our service, which could reduce our revenues and profits, and damage our brands. Our systems are vulnerable to damage or interruption from earthquakes, terrorist attacks, floods, fires, power loss, telecommunications failures, or other attempts to harm our systems. In any Ting town where we are not the underlying network operator and are utilizing the Fiber network of a third party, we rely on those third parties and their affiliates to maintain their network facilities, government authorizations and to comply with government policies and regulations. If they fail do to so, we may incur substantial losses. Some of our data centers are located in areas with a high risk of major earthquakes. Our data centers are also subject to break-ins, sabotage and intentional acts of vandalism, and to potential disruptions if the operators of these facilities have financial difficulties. The occurrence of a natural disaster, a decision to close a facility without adequate notice or other unanticipated problems at our data centers could result in lengthy interruptions in our service.

In our Wavelo segment, the availability of our platform services is reliant on data centers and public cloud providers such as AWS, to continue to operate. Wavelo also depends on key observability service providers that integrate with our platforms to be operating in order to alert us of an outage or issue without client's billing or provisioning services.

In our Tucows Corporate - Mobile Services segment, as provider of retail mobile services, we do not own or operate a physical network, but rather utilize the nationwide wireless communication networks of our Network Operator. We rely on them and their third-party affiliates to maintain their wireless facilities and government authorizations and to comply with government policies and regulations. If they fail to do so, we may incur substantial losses. Some of the risks related to their nationwide wireless communication networks and infrastructure include: major equipment failures, breaches of network or information technology security that affect their wireless networks, including transport facilities, communications switches, routers, microwave links, cell sites or other equipment or third-party owned local and long-distance networks on which we rely, power surges or outages, software defects and disruptions beyond their control, such as natural disasters and acts of terrorism, among others. The Master Services Agreement with our Network Operator does not contain any contractual indemnification provisions relating to network outages or other disruptions. Any impact on their nationwide wireless communication networks could disrupt our operations, require significant resources, result in a loss of subscribers or impair our ability to attract new subscribers, which in turn could have a material adverse effect on our business, results of operations and financial condition. Delays or failure to add network capacity, or increased costs of adding capacity or operating the network, could limit our ability to increase our customer base, limit our ability to increase our revenues, or cause a deterioration of our operating margin.

In our Tucows Domains segment, the availability of our Domain Name services depends on the continuing operation of our information technology and communications systems. Any damage to or failure of our systems could result in interruptions in our service, which could reduce our revenues and profits, and damage our brands. Our systems are vulnerable to damage or interruption from earthquakes, terrorist attacks, floods, fires, power loss, telecommunications failures, computer viruses, computer denial of service attacks or other attempts to harm our systems. Some of our data centers are located in areas with a high risk of major earthquakes. Our data centers are also subject to break-ins, sabotage and intentional acts of vandalism, and to potential disruptions if the operators of these facilities have financial difficulties. Some of our systems are not fully redundant, and our disaster recovery planning cannot account for all eventualities. The occurrence of a natural disaster, a decision to close a facility without adequate notice or other unanticipated problems at our data centers could result in lengthy interruptions in our service.

We are parties to agreements with other unrelated parties for certain business operations and to license third-party technologies. Any claims against these unrelated parties that we rely upon for business operations and/or licensed technology could result in the need to incur substantial costs to replace technology or services which could delay and increase the cost of product and service developments.

Across all three of our business segments, we have entered into agreements with third parties for licensing of certain technologies, the day-to-day execution of certain services, the development and maintenance of certain systems necessary for the operation of our businesses and for network equipment, handsets, devices and other equipment where appropriate. We expect our dependence on key suppliers to continue as more advanced technologies and services are developed. If we experience difficulties with regard to these arrangements or are unable to negotiate on commercially reasonable terms or at all with future vendors, it could result in additional expense, loss of customers and revenue, interruption of our services or a delay in the roll-out of new technology and services for our customers.

Our systems face security risks, and any compromise of the security of these systems could disrupt our business, damage our reputation and result in the disclosure of confidential information, legal liability for damages and loss of customers.

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners, and personally identifiable information of our customers and employees. Due to the fact that all of our services are Internet based, the amount of data we store for our users on our servers (including personal information) has been increasing. We make extensive use of online services and centralized data processing, including through third-party service providers. The secure maintenance and transmission of customer information is an important element of our operations.

From time to time, concerns have been expressed about whether our services compromise the privacy of our users and others. Concerns about our practices with regard to the collection, use, disclosure or security of personal information or other privacy-related matters, even if unfounded, could damage our reputation and operating results and expose us to litigation and possible liability, including claims for unauthorized purchases with credit card information, impersonation, or fraud claims and other claims relating to the misuse of personal information and unauthorized marketing purposes. While we strive to comply with all applicable data protection laws and regulations, as well as our own privacy policies, any failure or perceived failure to comply may result in proceedings or actions against us by government entities or others, which could potentially have an adverse effect on our business.

We have previously been the target of attempted attacks and must monitor and develop our systems to protect this data from misappropriation. Our information technology and other systems that maintain and transmit customer information, including location or personal information, or those of service providers, may be compromised by a malicious third-party penetration of our network security, or that of a third-party service provider, or impacted by advertent or inadvertent actions or inactions by our employees, or those of a third-party service provider. Cyber-attacks, which include the use of malware, computer viruses and other means for disruption or unauthorized access, have increased in frequency, scope and potential harm in recent years, including recently as retaliation for geo-political alliances, support and country imposed sanctions. While, to date, we have not been subject to any successful cyber-attacks or other cyber incidents which, individually or in the aggregate, have been material to our operations or financial condition, the preventive actions we take to reduce the risk of cyber incidents and protect our information technology and networks may be insufficient to repel a major cyber-attack in the future. As a result, our subscribers’ information may be lost, disclosed, accessed, used, corrupted, destroyed or taken without the subscribers’ consent.

Any major compromise of our data or network security, failure to prevent or mitigate the loss of our services or customer information and delays in detecting any such compromise or loss could disrupt our operations, impact our reputation and subscribers' willingness to purchase our services and subject us to additional costs and liabilities, including litigation, which could be material.

Disputes concerning the ownership or rights to use intellectual property and litigation involving other rights of third parties could be costly and time-consuming to litigate, may distract management from operating the business, and may result in us paying significant damage awards, losing significant rights and our ability to operate all or a portion of our business.

We rely upon copyright, trade secret and trademark law, confidentiality and nondisclosure agreements, invention assignment agreements and work-for-hire agreements to protect our proprietary technology, all of which offer only limited protection. Due to the global nature of our web-based businesses and services, we cannot ensure that our efforts to protect our proprietary information will be adequate to protect against infringement and misappropriation by third parties, particularly in foreign countries where laws or law enforcement practices may not protect proprietary rights as fully as in the U.S. and Canada.

We have licensed, and may in the future license, some of our trademarks and other proprietary rights to others. Third parties may also reproduce or use our intellectual property rights without seeking a license and thus benefit from our technology without paying for it. Third parties could also independently develop technology, processes or other intellectual property that are similar to or superior to those used by us. Actions by licensees, misappropriation of the intellectual property rights or independent development by others of similar or superior technology might diminish the value of our proprietary rights or damage our reputation. The unauthorized reproduction or other misappropriation of our intellectual property rights, including copying the look, feel and functionality of our website could enable third parties to benefit from our technology without us receiving any compensation. The enforcement of our intellectual property rights may depend on our taking legal action against these infringing parties, and we cannot be sure that these actions will be successful.

Defense of claims of infringement of intellectual property or other rights of third parties against us would require the resources of both our time and money. Third parties may assert claims of infringement of patents or other intellectual property rights against us concerning past, current or future technologies. Content obtained from third parties and distributed over the Internet by us may result in liability for defamation, negligence, intellectual property infringement, product or service liability and dissemination of computer viruses or other disruptive problems. We may also be subject to claims from third parties asserting trademark infringement, unfair competition and violation of publicity and privacy rights relating specifically to domains.

As a domain name registrar, we regularly become involved in disputes over registration of domain names. These disputes are typically resolved through the UDRP, ICANN’s administrative process for domain name dispute resolution, or less frequently through litigation under the Anti Cyber Squatting Consumer Protection Act "ACPA", or under general theories of trademark infringement or dilution. The UDRP generally does not impose liability on registrars, and the ACPA provides that registrars may not be held liable for registering or maintaining a domain name absent a showing of bad faith intent to profit or reckless disregard of a court order by the registrars. However, we may face liability if we fail to comply in a timely manner with procedural requirements under these rules. In addition, these processes typically require at least limited involvement by us, and therefore increase our cost of doing business. The volume of domain name registration disputes may increase in the future as the overall number of registered domain names increases.

We have substantial goodwill and other intangible assets, therefore to the extent that any intellectual property is deemed impaired we would be required to record a significant charge to earnings in our financial statements during the period in which any impairment of our goodwill or intangible assets is determined. Any impairment charges or changes to the estimated amortization periods could have a material adverse effect on our financial results.

Our service offerings are exposed to risks associated with credit card and other online payment chargebacks, fraud and new payment methods.

Across all three of our business segments, regardless if those services operate on a postpaid or prepaid basis, we are exposed to the risks associated with credit card and other online payment technologies, chargebacks and fraud associated with these payment types. A substantial majority of our revenue originates from online credit card transactions. Under current credit card industry practices, we are liable for fraudulent and disputed credit card transactions because we do not obtain the cardholder's signature at the time of the transaction, even though the financial institution issuing the credit card may have authorized the transaction. Under credit card association rules, penalties may be imposed at the discretion of the association. Any such potential penalties would be imposed on our credit card processor by the association. Under our contract with our processor, we are required to reimburse our processor for such penalties. Our current level of fraud protection, based on our fraudulent and disputed credit card transaction history, is within the guidelines established by the credit card associations. However, we face the risk that one or more credit card associations may, at any time, assess penalties against us or terminate our ability to accept credit card payments from customers, which would have a material adverse effect on our business, financial condition and results of operations.

Furthermore, for our postpaid businesses, namely the Tucows Corporate - Mobile Services and Ting segment, our success depends on our ability to manage credit risk while attracting new customers with profitable usage patterns. Both of these segments have relatively short operating histories and there can be no assurance that it will be able to manage credit risk or generate sufficient revenue to cover its postpaid-related expenses, including losses arising from its customers' failure to make payments when due. We manage credit risk exposure using techniques that are designed to set terms and limits for the credit risk it accepts. The techniques we use may not accurately predict future defaults due to, among other things, inaccurate assumptions or fraud. Our ability to manage credit risk may also be adversely affected by legal or regulatory changes, competitors' actions, consumer behavior, and inadequate collections staffing or techniques. While we continually seek to improve our assumptions and controls, the failure to manage credit risk appropriately may materially adversely affect our profitability and ability to grow.

Our indebtedness could adversely affect our ability to raise additional capital to fund our operations, our ability to operate our business, execute our strategy divert our cash flow from operations for debt payments, and prevent us from meeting our debt obligations.

The Company's wholly owned subsidiary, Ting LLC as well as Ting LLC's wholly owned subsidiaries are financed by Generate through the Unit Purchase Agreement ("UPA"). As of March 13, 2023 our outstanding preferred units purchased under the UPA was $117.5 million, with a further capital commitment of $82.5 million available to Ting, LLC through Milestone Fundings(1). The terms of the LLC Agreement with Generate prohibit Tucows from funding the operations or capital investments in Ting, LLC with funds generated by its subsidiaries outside of Ting, LLC or its wholly owned subsidiaries ("Excluding-Ting"). In order to continue the planned expansion of the Ting Internet footprint and fund future operating losses, we will need to access Milestone financing through the UPA as well as engage in equity and further debt financing. Our ability to achieve the Milestones to access the additional funding under the UPA will depend on our future performance, which will be affected by a range of economic, competitive and business factors as well as changes in government monetary or fiscal policy. Our financing partner Generate may not grant permission for Ting, LLC to engage in further debt or equity financing. Failure to access the additional funding, could have a material adverse effect on our business.

Excluding-Ting is financed by the Company's credit facility. As of March 13, 2023, our outstanding debt under our credit facility was $239.7 million with remaining committed funds of $0.3 million. Absent sufficient cash flows from operations, Excluding-Ting may need to engage in equity or debt financings to secure additional funds to meet our operating and capital needs. In the event that Excluding-Ting seeks additional financing, Excluding-Ting's trailing twelve month debt to adjusted EBITDA ratio of 3.978:1.00 as of December 31, 2022 may make obtaining additional financing difficult and our lenders under the Company's credit facility may not grant permission for the Company to engage in further debt or equity financing. On March 14, 2023 the Company entered into an Amending Agreement No.2 (the "Credit Agreement Amendment") to the Third Amended and Restated Senior Secured Credit Agreement (the "Amended Credit Agreement") with its existing syndicate of lenders. The Amended Credit Agreement continues to provide the Company with access to an aggregate of $240 million in committed funds, however there is a suspension to the $60 million accordion during the relief period (the "Leverage Step Up Period") which is defined as from Closing (March 14, 2023) to the date that the Company delivers a compliance certificate for the period ending on December 31, 2023 demonstrating compliance with financial covenants. Additionally, the Credit Agreement Amendment has extended the maturity of the Credit Facility to September 30, 2024. As a result of the closing of the Credit Agreement Amendment, the Company is subject to the following financial covenants at all times, with monthly testing during the Leverage Step Up Period and reverting to quarterly tests thereafter: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 from March 14, 2023 up to and including September 29, 2023; 4.00:1.00 from September 30, 2023 up to and including December 30, 2023; and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. The Company's credit facility expires on September 30, 2024 and the Company will be required to refinance the Amended Credit Agreement once it becomes due. On March 14, 2023 the Company made a repayment of $2.8 million on the Credit Facility.

In any situation where the Company is seeking such debt or equity financing, it may not be able to secure additional debt or equity financing on favorable terms, or at all, at the time when we need that funding. The Company does not currently have an effective "universal" shelf registration statement on Form S-3 on file with the SEC, which might delay the Company's ability to complete an equity financing. In addition, even though we may have sufficient cash flow, we may still elect to sell additional equity or debt securities or obtain credit facilities for other reasons. If we raise additional funds through further issuances of equity or convertible debt securities, our existing shareholders could suffer significant dilution in their percentage ownership of our company, and any new equity securities we issue could have rights, preferences and privileges senior to those of holders of our common stock. In addition, if we decide to raise funds through debt or convertible debt financings, we may be unable to meet our interest or principal payments. Our inability to generate sufficient cash flow from operations or obtain additional capital or alternative financing on acceptable terms could have a material adverse effect on our business, financial condition and results of operations.

(1) As defined in Note 13 - "Redeemable preferred shares" of the Company's Consolidated Financial Statements.

Our debt agreements impose significant operating and financial restrictions on us and our subsidiaries, which may prevent us from capitalizing on business opportunities across the Company. Breaching these agreements could have a materially adverse impact on the Company.

The agreements governing our current credit facility impose significant operating and financial restrictions on Excluding-Ting. These restrictions, subject in certain cases to customary baskets, exceptions, and incurrence-based ratio tests, may limit our or our subsidiaries' ability to engage in some transactions, including the following: incurring additional indebtedness and issuing stock; paying dividends, share repurchases or making other restricted payments or investments; selling assets, properties, or licenses that we have or in the future may procure; creating liens on assets; engaging in mergers, acquisitions, business combinations, or other transactions.

Excluding-Ting's trailing twelve month debt to adjusted EBITDA ratio was 3.978:1.00 as of December 31, 2022. Our covenants under the Company's credit facility required us to maintain a debt to adjusted EBITDA ratio of 4.00:1.00 until September 29, 2023. Our ability to remain in compliance with our operating restrictions, generate cash flow from operations to make principal, interest payments on our debt will depend on our future performance, which will be affected by a range of economic, competitive and business factors as well as changes in government monetary or fiscal policy. Failure to maintain compliance with the operating restrictions of our credit facility could result in default and could have a material adverse effect on our business. On March 14, 2023 the Company entered into the Credit Agreement Amendment with its existing syndicate of lenders. The Amended Credit Agreement continues to provide the Company with access to an aggregate of $240 million in committed funds, however there is a suspension to the $60 million accordion during the Leverage Step Up Period. Additionally, the Credit Agreement Amendment has extended the maturity of the Credit Facility to September 30, 2024. As a result of the closing of the Credit Agreement Amendment, the Company is subject to the following financial covenants at all times, with monthly testing during the Leverage Step Up Period and reverting to quarterly tests thereafter: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 from March 14, 2023 up to and including September 29, 2023; 4.00:1.00 from September 30, 2023 up to and including December 30, 2023; and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. On March 14, 2023 the Company made a repayment of $2.8 million on the Credit Facility.

With respect to the UPA, Ting, LLC is obligated to redeem Generate's equity interests for an amount equal to the outstanding capital balance plus the unsatisfied preferred return (and pay a make-whole premium if the redemption of the preferred shares occurs within the four years following the Transaction Close), upon certain conditions, including a material breach of any Tucows' credit agreement that is not cured, the failure to pay the preferred return in two consecutive quarters following the second anniversary of the Transaction Close, and the six year anniversary of the Transaction Close. These restrictions could limit our ability to react to changes in our operating environment or the economy. Triggering the make-whole provision could have a material adverse effect on our business.

Any future indebtedness that we incur may contain similar or more restrictive covenants. Any failure to comply with the restrictions of our debt agreements may result in an event of default under these agreements, which in turn may result in defaults or acceleration of obligations under these agreements and other agreements, giving our lenders the right to terminate any commitments they had made to provide us with further funds and to require us to repay all amounts then outstanding. Any of these events would have a material adverse effect on our business, financial condition, and operating results.

Our preferred share unit financing arrangement could adversely affect our financial condition, our ability to operate our business, divert our cash flow from operations for debt payments, and prevent us from meeting our debt obligations. Our preferred share financing agreement imposes predetermined operational and financial drawdown milestones on our Ting segment, which may prevent us from obtaining additional financing under such preferred unit financing arrangement. In addition, the Company may need additional financing to further accelerate the expansion of the Ting Internet footprint.

On August 8, 2022, Ting LLC entered into the UPA with Generate under which Ting LLC has committed to issue and sell $60 million of Series A Preferred Units at the Initial Funding, subject to customary closing conditions, and an additional aggregate of $140 million Series A Preferred Units if the Milestones are achieved over a three year period from the date of the Transaction Close. The Series A Preferred Units will accrue a preferred return of 15% per annum (subject to certain adjustments as described below) on a non-cash basis under the first 24 months under the Unit Purchase Agreement. Our ability to achieve the Milestones to access the additional funding, as well as to generate cash flow from operations to make the payments in respect of the preferred return, will depend on our future performance, which will be affected by a range of economic, competitive and business factors as well as changes in government monetary or fiscal policy. The failure to access the additional funding or pay the preferred return, could have a material adverse effect on our business. In addition, the Company is obligated to redeem Generate's equity interests for an amount equal to the outstanding capital balance plus the unsatisfied preferred return (and pay a make-whole premium if the redemption occurs within the four years following the Transaction Close), upon certain conditions, including a material breach of any Tucows' credit agreement that is not cured, the failure to pay the preferred return in two consecutive quarters following the second anniversary of the Transaction Close, and the six year anniversary of the Transaction Close.

In addition, in order to further accelerate the expansion of the Ting Internet footprint, the Company will seek additional financing, which may include an equity or debt issuance, a partnership or collaborating arrangement with another third party. We may not be able to secure additional financing on favorable terms, or at all, at the time when we need that funding, and if not available, could have a material adverse effect on our business. Moreover, any additional financing may be dilutive to existing investors.

The international nature of our businesses and operations expose us to additional risks that could harm our business, operating results, and growth strategy; including risks related to taxation and foreign currencies fluctuations.

We are a U.S. based multinational company. Expansion into international markets is a continued element of our growth strategy. Introducing and marketing our services internationally, developing direct and indirect international sales and support channels and managing foreign personnel and operations all require significant management attention and financial resources. We face a number of risks associated with expanding our businesses internationally that could negatively impact our results of operations, including the following:

- Foreign currency fluctuations and exchange rates: Our operating results are accordingly subject to fluctuations in foreign currency exchange rates, which could adversely affect our future operating results. We attempt to mitigate a portion of these risks through foreign currency hedging, based on our judgment of the appropriate trade-offs among risk, opportunity and expense. We generally use hedging programs to partially hedge our exposure to foreign currency exchange rate fluctuations for Canadian dollars, the currency in which we incur the majority of operating expenses. Although we regularly review our hedging program and make adjustments as necessary based on the judgment factors discussed above, our hedging activities may not offset more than a portion of the adverse financial impact resulting from unfavorable movement in foreign currency exchange rates, which could adversely affect our financial condition or results of operations.
- Potentially adverse tax consequences or an inability to realize tax benefits: Significant judgment is required in determining our provision for income taxes, deferred tax assets or liabilities and in evaluating our tax positions on a worldwide basis. While we believe our tax positions are consistent with the tax laws in the jurisdictions in which we conduct our business, it is possible that these positions may be overturned by jurisdictional tax authorities, which may have a significant impact on our provision for income taxes. Tax laws are dynamic and subject to change as new laws are passed and new interpretations of the law are issued or applied, including the Tax Cuts and Job Act of 2017. In addition, governmental tax authorities are increasingly scrutinizing the tax positions of companies. If U.S. or other foreign tax authorities change applicable tax laws, our overall taxes could increase, and our business, financial condition or results of operations may be adversely impacted.

- Management, communication and integration problems resulting from cultural differences and geographic dispersion.
- Compliance with foreign laws, accreditation and regulatory requirements in relation to provision of services, protection of intellectual property and third-party data in foreign jurisdictions.
- Competition from companies with international operations, including large international competitors and entrenched local companies.
- To the extent we choose to make acquisitions to enable our international expansion efforts, the identification of suitable acquisition targets in the markets into which we want to expand.
- Political and economic instability in some international markets
- Sufficiently qualified labor pools in various international markets
- We may not succeed in our efforts to continue to expand our international presence as a result of the factors described above or other factors that may have an adverse impact on our overall financial condition and results of operations.

Unanticipated changes in effective tax rates or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our operating results and financial condition.

We are subject to income and other taxes in a number of jurisdictions and our tax structure is subject to review by both domestic and foreign tax authorities. We must make significant assumptions, judgments and estimates to determine our current provision for income taxes, deferred tax assets and liabilities and any valuation allowance that may be recorded against our deferred tax assets. Although we believe that our estimates are reasonable, the ultimate determination of our tax liability is always subject to review by the applicable tax authorities. Any adverse outcome of such a review could have a negative effect on our operating results and financial condition in the period or periods for which such determination is made. Our current and future tax liabilities could be adversely affected by:

- international income tax authorities, including the Canada Revenue Agency and the U.S. Internal Revenue Service, challenging the validity of our arms-length related party transfer pricing policies or the validity of our contemporaneous documentation.
- changes in the valuation of our deferred tax assets; or
- changes in tax laws, regulations, accounting principles or the interpretations of such laws.

We could be subject to changes in tax rates, the adoption of new U.S. or international tax legislation, or exposure to additional tax liabilities. This could discourage the registration or renewal of domain names.

Due to the global nature of the Internet, it is possible that, although our services and the Internet transactions related to them typically originate in the United States, Canada, Denmark and Germany, governments of other states or foreign countries might attempt to regulate our transactions or levy sales, income or other taxes relating to our activities. Tax authorities at the international, federal, state and local levels are currently reviewing the appropriate treatment of companies engaged in Internet commerce. New or revised international, federal, state or local tax regulations may subject us or our customers to additional sales, income and other taxes. We cannot predict the effect of current attempts to impose sales, income or other taxes on commerce over the Internet on Tucows or on our customers. New or revised taxes and, in particular, sales taxes, would likely increase the cost of doing business online and decrease the attractiveness of advertising and selling goods and services over the Internet. New taxes could also create significant increases in internal costs necessary to capture data, and collect and remit taxes. Any of these events could have an adverse effect on our business and results of operations.

We have identified a material weakness in our internal control over financial reporting that, if not properly remediated, could adversely affect our business and results of operations.

In connection with the audit of our consolidated financial statements as of and for the year ended December 31, 2022, we have concluded that there is a material weakness relating to our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim consolidated financial statements will not be prevented or detected on a timely basis.

Specifically, as discussed in more detail in Item 9A of this Form 10-K, we identified a material weakness relating to the operation of internal controls over the capitalization of certain costs that have been identified and included in our assessment. Notwithstanding that we did not identify any material misstatements to the consolidated financial statements and there were no changes to the previously released results as a result of this material weakness, the control deficiencies created a reasonable possibility that a material misstatement to the consolidated financial statements would not be prevented or detected on a timely basis. As a result of this material weakness, management has determined that our disclosure controls and procedures and internal control over financial reporting were not effective as of December 31, 2022.

In light of the material weakness identified, we performed additional analysis and other post-closing procedures to ensure that our consolidated financial statements were prepared in accordance with GAAP and accurately reflected our financial position and results of its operations as of and for the year ended December 31, 2022. Subsequent to our December 31, 2022 fiscal year end, we began taking a number of actions, including designing and implementing new controls and revising existing controls as well as investment in additional technical accounting support, in order to remediate the material weakness described above. We expect to continue our remediation efforts, including testing of operating effectiveness of new controls, and expect to incur additional costs remediating this material weakness.

Although we believe we are taking appropriate actions to remediate the control deficiency we identified and to strengthen our internal control over financial reporting, we may need to take additional measures to fully mitigate the material weakness, and the measures we have taken, and expect to take, to improve our internal controls may not be sufficient to address the issues identified, to ensure that our internal controls are effective or to ensure that the identified material weakness will not result in a material misstatement of our annual or interim consolidated financial statements. In addition, other material weaknesses or deficiencies may be identified in the future. If we are unable to correct material weaknesses or deficiencies in internal controls in a timely manner, our ability to record, process, summarize and report financial information accurately and within the time periods specified in the rules and forms of the SEC will be adversely affected. This failure could negatively affect the market price and trading liquidity of our common stock, cause investors to lose confidence in our reported financial information, subject us to civil and criminal investigations and penalties, and generally materially and adversely impact our business and financial condition.

The Company’s success depends on the continued service and availability of key personnel.

Much of the Company’s future success depends on the continued availability and service of key personnel, including its Chief Executive Officer, executive team and other highly skilled employees. Experienced personnel in the technology industry are in high demand and competition for their talents is intense. We may not be able to retain our key employees or replace them when necessary.

Our business depends on our strong brands. If we are not able to maintain and enhance our brands, our ability to expand our customer base will be impaired and our business and operating results will be harmed.

In recognition of the evolving nature of the internet services market and to make it easier to clearly differentiate each service we offer from our competitors, we enhanced our branding by focusing our primary service offerings under six distinct brands namely “OpenSRS”, “eNom”, “Hover", "EPAG", "Ascio" and “Ting”. We also believe that maintaining and enhancing the “Tucows” corporate brand and our service brands is critical to expanding our customer base. We anticipate that, as our market becomes increasingly competitive, maintaining and enhancing our brands may become increasingly difficult and expensive. Maintaining and enhancing our brands will depend largely on our ability to be a technology leader providing high quality products and services, which we may not do successfully. To date, we have engaged in relatively little direct brand promotion activities. This enhances the risk that we may not successfully implement brand enhancement efforts in the future.

Additionally, as part of the DISH Purchase Agreement executed in the year ending December 31, 2020 ("Fiscal 2020"), the Company granted DISH the right to use the name "Ting" and its associated domain name over a 24-month period which was then subsequently extended until the end of 2023, after which DISH has an option to purchase the brand from the Company. If after this period DISH opts to purchase the Ting brand from the Company, we will need to rebrand our Ting Fiber Internet business. However, DISH has formally refused their option to purchase the Ting brand. Any actions taken by DISH as part of the transactions contemplated by the DISH Purchase Agreement may impact the Ting brand's reputation. These actions could range from poor service quality, bad customer experience, privacy concerns, data breaches, and other events that could negatively impact the Ting brand permanently. The Ting brand could then carry negative connotation with consumers and impact our ability to continue to grow our Fiber Internet business under the Ting brand. If any of these events occur, our operational performance and financial results, in particular those of our Fiber Internet business may be adversely affected.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

Section 404 of the Sarbanes-Oxley Act of 2002 requires us to evaluate the effectiveness of our internal control over financial reporting as of the end of each year, and to include a management report assessing the effectiveness of our internal control over financial reporting in each Annual Report on Form 10-K. Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. Over time, controls may become inadequate because changes in conditions or deterioration in the degree of compliance with policies or procedures may occur. Implementation of new technology related to the control system may result in misstatements due to errors that are not detected and corrected during testing. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and may not be detected.

We are subject to minimum purchase commitments with some partner network providers

In some Ting markets, our Ting segment operates Internet networks owned by third parties, such as municipalities or private entities (“Partner Network Providers”), rather than owning and constructing the Internet network ourselves. The Company pays a fee to Partner Network Providers in exchange for the use of the Internet network. Fees are commonly subject to minimum purchase commitments which can vary in their structure, but often increase as the Internet network is constructed and Ting is provided access to more serviceable addresses. In order to generate profit and avoid losses in these partner markets, we must generate enough revenue to offset our costs, including our minimum purchase commitments by attracting new customers and managing attrition.

RISKS RELATED TO LEGAL, GOVERNMENTAL AND REGULATORY MATTERS

The use of ICANN's Oversight of Domain Name Registration System and domain name registration involve charges and fees. If these fees increase, this may have a significant impact on our operating results.

ICANN is a private sector, not-for-profit corporation formed in 1998 by the U.S. Department of Commerce for the express purposes of overseeing a number of Internet related tasks previously performed directly on behalf of the U.S. government, including managing the domain name registration system. ICANN currently imposes a fee ($0.18) in association with the registration of each domain name. We have no control over ICANN and cannot predict when they may increase their respective fees. If we absorb such cost increases, or if surcharges act as a deterrent to registration, our profits may be adversely impacted by these third-party fees.

ICANN has been subject to strict scrutiny by the public and by the U.S. and other governments around the world with many of those governments becoming increasingly interested in Internet governance. For example, the U.S. Congress has held hearings to evaluate ICANN's selection process for new TLDs. In addition, ICANN faces significant questions regarding efficacy as a private sector entity. ICANN may continue to evolve both its long-term structure and mission to address perceived shortcomings such as a lack of accountability to the public and a failure to maintain a diverse representation of interests on its board of directors. We continue to face the risks that:

- the U.S. or any other government may reassess its decision to introduce competition into, or ICANN’s role in overseeing, the domain registration market;
- the Internet community or the U.S. Department of Commerce or U.S. Congress may refuse to recognize ICANN’s authority or support its policies, which could create instability in the domain registration system;
- some of ICANN’s policies and practices, and the policies and practices adopted by registries and registrars, could be found to conflict with the laws of one or more jurisdictions;
- ICANN may lose any one of the several claims pending against it in both the U.S. and international courts, in which case its credibility may suffer and its policies may be discredited;
- the terms of the Registrar Accreditation Agreement (the “RAA”), under which we are accredited as a registrar, could change in ways that are disadvantageous to us or under certain circumstances could be terminated by ICANN preventing us from operating our Registrar, or ICANN could adopt unilateral changes to the RAA that are unfavorable to us, that are inconsistent with our current or future plans, or that affect our competitive position;
- ICANN and, under their registry agreements, VeriSign and other registries may impose increased fees received for each ICANN accredited registrar and/or domain name registration managed by those registries;
- ICANN or any registries may implement policy changes that would impact our ability to run our current business practices throughout the various stages of the lifecycle of a domain name; and

- international regulatory or governing bodies, such as the International Telecommunications Union or the European Union, may gain increased influence over the management and regulation of the domain registration system, leading to increased regulation in areas such as taxation and privacy.
- If any of these events occur, they could create instability in the domain registration system. These events could also disrupt or suspend portions of our domain registration solution, which would result in reduced revenue.

Data protection regulations may impose legal obligations on us that we cannot meet or that conflict with our ICANN contractual requirements.

In 2018, the European Commission adopted the GDPR, which creates obligations around the procurement, processing, publication and sharing of personal data. Potential fines for violations of certain provisions of GDPR reach as high as 4% of a company's annual total revenue, potentially including the revenue of its international affiliates. The solutions we develop for GDPR-compliance may not be adequate in the views of regulatory authorities or ICANN, which may cause the loss of WHOIS privacy revenue or increase our costs of developing compliant solutions or subject us to litigation, liability, civil penalties, or loss of market share. As the privacy laws and regulations around the world continue to evolve, these changes could adversely affect our business operations in similar ways.

The law relating to the use of and ownership of intellectual property on the internet as well as the liability of internet services companies for data and content carried on or disseminated through their network's websites is currently unsettled and could expose us to unforeseen liabilities. This could negatively affect the public's perception of our corporate image.

As a host of content through our Exact Hosting business, and to a lesser extent as a registrar of domain names services, we may be subject to potential liability for illegal activities by our resellers' customers on their websites. We provide an automated service that enables users to register domain names. We do not monitor or review, nor does our accreditation agreement with ICANN require that we monitor or review, the appropriateness of the domain names we register for our customers or the content of their websites, and we have no control over the activities in which these customers engage. While we have policies in place to terminate domain names or to take other action if presented with evidence of illegal conduct, customers could nonetheless engage in prohibited activities without our knowledge.

Several bodies of law may be deemed to apply to us with respect to various customer activities. Because we operate in a relatively new and rapidly evolving industry and since our industry is characterized by rapid changes in technology and in new and growing illegal activity, these bodies of laws are constantly evolving. Some of the laws that apply to us with respect to certain customer activities include the following:

- The CDA generally protects online service providers, such as Tucows, from liability for certain activities of their customers, such as posting of defamatory or obscene content, unless the online service provider is participating in the unlawful conduct. Notwithstanding the general protections from liability under the CDA, we may nonetheless be forced to defend ourselves from claims of liability covered by the CDA, resulting in an increased cost of doing business.
- The DMCA, provides recourse for owners of copyrighted material who believe that their rights under U.S. copyright law have been infringed on the Internet. Under the DMCA, we generally are not liable for infringing content posted by third parties. However, if we receive a proper notice from a copyright owner alleging infringement of its protected works by web pages for which we provide hosting services, and we fail to expeditiously remove or disable access to the allegedly infringing material, fail to post and enforce a digital rights management policy or a policy to terminate accounts of repeat infringers, or otherwise fail to meet the requirements of the safe harbor under the DMCA, the owner may seek to impose liability on us.
- Although established statutory law and case law in these areas to date generally have shielded us from liability for customer activities, court rulings in pending or future litigation may serve to narrow the scope of protection afforded us under these laws. In addition, laws governing these activities are unsettled in many international jurisdictions, or may prove difficult or impossible for us to comply with in some international jurisdictions. Also, notwithstanding the exculpatory language of these bodies of law, we may be embroiled in complaints and lawsuits which, even if ultimately resolved in our favor, add cost to our doing business and may divert management's time and attention. Finally, other existing bodies of law, including the criminal laws of various states, may be deemed to apply or new statutes or regulations may be adopted in the future. Our insurance may not be adequate to compensate or may not cover us at all in the event we incur liability for damages due to data and content carried on or disseminated through our network. Any costs not covered by insurance that are incurred as a result of this liability or alleged liability, including any damages awarded and costs of litigation, could harm our business and prospects.
- Domain name registrars also face potential tort law liability for their role in wrongful transfers of domain names. The safeguards and procedures we have adopted may not be successful in insulating us against liability from such claims in the future. In addition, we face potential liability for other forms of "domain name hijacking," including misappropriation by third parties of our network of customer domain names and attempts by third parties to operate websites on these domain names or to extort the customer whose domain name and website were misappropriated. Furthermore, our risk of incurring liability for a security breach on a customer website would increase if the security breach were to occur following our sale to a customer of an SSL certificate that proved ineffectual in preventing it. Finally, we are exposed to potential liability as a result of our private domain name registration service, wherein we become the domain name registrant, on a proxy basis, on behalf of our customers. While we have a policy of providing the underlying information and reserve the right to cancel privacy services on domain names giving rise to domain name disputes including when we receive reasonable evidence of an actionable harm, the safeguards we have in place may not be sufficient to avoid liability in the future, which could increase our costs of doing business.
- There have been ongoing legislative developments and judicial decisions concerning trademark infringement claims, unfair competition claims and dispute resolution policies relating to the registration of domains. To help protect ourselves from liability in the face of these ongoing legal developments, we have taken the following precautions:
- our standard registration agreement requires that each registrant indemnify, defend and hold us harmless for any dispute arising from the registration or use of a domain registered in that person's name; and
- since December 1, 1999, we have required our resellers to ensure that all registrants are bound to the UDRP as approved by ICANN.

Despite these precautions, we cannot be assured that our indemnity and dispute resolution policies will be sufficient to protect us against claims asserted by various third parties, including claims of trademark infringement and unfair competition.

New laws or regulations concerning domains and registrars may be adopted at any time. Our responses to uncertainty in the industry or new regulations could increase our costs or prevent us from delivering our domain registration services over the Internet, which could delay growth in demand for our services and limit the growth of our revenues. New and existing laws may cover issues such as:

- pricing controls;
- the creation of additional generic top-level domains and country code domains;
- consumer protection;
- cross-border domain registrations;
- trademark, copyright and patent infringement;
- domain dispute resolution; and
- the nature or content of domains and domain registration.

An example of legislation passed in response to novel intellectual property concerns created by the Internet is the ACPA enacted by the United States government in November 1999. This law seeks to curtail a practice commonly known in the domain registration industry as cybersquatting. A cyber squatter is generally defined in the ACPA as one who registers a domain that is identical or similar to another party's trademark, or the name of another living person, with the bad faith intent to profit from use of the domain. The ACPA states that registrars may not be held liable for registration or maintenance of a domain for another person absent a showing of the registrar's bad faith intent to profit from the use of the domain. Registrars may be held liable, however, if they do not comply promptly with procedural provisions of the ACPA. For example, if there is litigation involving a domain, the registrar is required to deposit a certificate representing the domain registration with the court. If we are held liable under the ACPA, any liability could have a material adverse effect on our business, financial condition and results of operations.

Our service offerings may become subject to new government regulations that may be costly to adopt, and may adversely affect our business prospects, future growth or results of operations.

The FCC grants wireless licenses for terms of generally ten years that are subject to renewal and revocation. There is no guarantee that our Network Operator's license will be renewed. Failure to comply with FCC requirements applicable to a given license could result in revocation of that license and, depending on the nature of the non-compliance, other licenses.

Various states are considering regulations over terms and conditions of service, including certain billing practices, privacy, and consumer-related issues that may not be pre-empted by federal law. If imposed, these regulations could make it more difficult and expensive to implement national sales and marketing programs and could increase the costs of our operations.

Specifically regarding our Tucows Domains segment, to date, government regulations have not materially restricted use of the Internet in most parts of the world. The legal and regulatory environment pertaining to the Internet, however, is uncertain and may change. New laws may be passed, existing but previously inapplicable laws may be deemed to apply to the Internet, or existing legal safe harbors may be narrowed, both by U.S. federal or state governments and by governments of foreign jurisdictions. These changes could affect:

- the liability of online resellers for actions by customers, including fraud, illegal content, spam, phishing, libel and defamation, infringement of third-party intellectual property and other abusive conduct;
- other claims based on the nature and content of Internet materials, such as pornography;
- user privacy and security issues;
- consumer protection;
- sales and other taxes, including the value-added tax of the European Union member states;
- characteristics and quality of services; and
- cross-border commerce.

The adoption of any new laws or regulations, or the application or interpretation of existing laws or regulations to the Internet, could hinder growth in use of the Internet and online services generally, and decrease acceptance of the Internet and online services as a means of communications, commerce and advertising. In addition, such changes in laws could increase our costs of doing business, subject our business to increased liability or prevent us from delivering our services over the Internet, thereby harming our business and results of operations.

Our Fiber Internet businesses rely on Network Operators. Failure by a Network Operator to obtain the proper licenses and governmental approvals from regulatory authorities would cause us to be unable to successfully operate those businesses.

The FCC licenses currently held by our Network Operators and their third-party affiliates to provide wireless services are subject to renewal and revocation. There is no guarantee that their wireless or network licenses will be renewed. The FCC requires all licensee to meet certain requirements, including so-called "build-out" requirements, to retain their licenses. Their failure to comply with certain FCC requirements in a given license area could result in the revocation of their license for that geographic area. As Ting expands its Internet business, enters new markets, and considers offering regulated telecommunications services, it takes on additional local, state and federal regulatory and compliance obligations that require additional diligence and resources.

We may experience unforeseen or potentially uninsured liabilities or losses in connection with our Domain Services business, including the risk that our standard agreements with customers may not be enforceable. This could negatively impact our financial results.

We operate on a global basis and all of our customers must execute our standard agreements that govern the terms of the services we provide to our customers. These agreements contain provisions intended to limit our potential liability arising from the provision of services to our customers. As most of our customers purchase our services online, execution of our agreements by resellers occurs electronically or, in the case of our terms of use, is deemed to occur because of a user's continued use of the website/internet service following notice of those terms. We believe that our reliance on these agreements is consistent with the practices in our industry, but if a domestic, foreign or international court were to find that either one of these methods of execution is invalid or that key provisions of our services agreements are unenforceable, we could be subject to liability that has a material adverse effect on our business or we could be required to change our business practices in a way that increases our cost of doing business.

Although we maintain general liability insurance, claims could exceed the coverage obtained or might not be covered by our insurance. While we typically obtain representations from our technology and content providers and contractual partners concerning the ownership of licensed technology and informational content and obtain indemnification to cover any breach of these representations, we still may not receive accurate representations or adequate compensation for any breach of these representations. We may have to pay a substantial amount of money for claims that are not covered by insurance or indemnification or for claims where the existing scope or adequacy of insurance or indemnification is disputed or insufficient.

RISKS RELATED TO OWNERSHIP OF OUR STOCK

Our share price may be volatile, which may make it difficult for shareholders to sell their shares of common stock when they want to, at an attractive price.

Our share price has varied recently and the price of our common stock may decrease in the future, regardless of our operating performance. Investors may be unable to resell their common stock following periods of volatility because of the market's adverse reaction to this volatility.

The following factors may contribute to this volatility: actual or anticipated variations in our quarterly operating results; interruptions in our services; seasonality of the markets and businesses of our customers; announcements of new technologies or new services by our company or our competitors; our ability to accurately select appropriate business models and strategies; the operating and stock price performance of other companies that investors may view as comparable to us; analyst or short-seller reports; news relating to our company or industry as a whole; and news relating to trends in our markets.

The stock market in general and the market for Internet-related companies in particular, including our company, has experienced volatility.

We cannot guarantee that our recently announced stock buyback program will be fully consummated or that such program will enhance the long-term value of our share price.

On February 9, 2023, the Company announced that its Board had approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 10, 2023 and is expected to terminate on February 9, 2024. Although the Company has repurchased shares under previous programs, there is no obligation for the Company to continue to repurchase or to repurchase any specific dollar amount of stock. The stock buyback program could affect the price of our stock and increase volatility in the market. We cannot guarantee that this program will be fully consummated or that such program will enhance the long-term value of our share price.

GENERAL RISK FACTORS

Economic, political, and market conditions may adversely affect our businesses, financial condition, and operating results.

The financial results of our business are both directly and indirectly dependent upon economic conditions throughout the world, which in turn can be impacted by conditions in the global financial markets. Uncertainty about global economic conditions may lead businesses to postpone spending in response to tighter credit and reductions in income or asset values. Weak economic activity may lead government customers to cut back on services. Factors such as the availability of credit, changes in laws (including laws relating to taxation), trade barriers, currency exchange rates and controls, and national and international political circumstances (including wars, terrorist acts or security operations) could have a material adverse effect on our business and investments, which could reduce our revenue, profitability and value of our assets. These factors may also adversely affect the business, liquidity and financial condition of our customers. In addition, periods of poor economic conditions could increase our ongoing exposure to credit risks on our accounts receivable balances. This could have a material adverse effect on our business, financial condition and results of operations.

In addition, our exposure to interest rate fluctuations relate primarily to our Third Amended and Restated Senior Secured Credit Agreement, entered into on August 8, 2022 (the "Amended Credit Agreement").

The Amended Credit Agreement contains SOFR loans as a form of advance available under the Credit Facility (as defined below) to replace LIBOR rate advances, and such SOFR loans may bear interest based on Adjusted Daily Simple SOFR (defined to be the applicable SOFR rate published by the Federal Reserve Bank of New York plus 0.10% per annum subject to a floor of zero) or Adjusted Term SOFR (defined to be the applicable SOFR rate published by CME Group Benchmark Administration Limited plus 0.10% for one-month, 0.15% for three-months, and 0.25% for six-months per annum). The Company's interest rates are now based on SOFR. In May 2020, the Company entered into a pay-fixed, receive-variable interest rate swap with a Canadian chartered bank to limit the potential interest rate fluctuations incurred on its future cash flows related to the variable interest payments on the credit facility. The Company does not use the interest rate swap for trading or speculative purposes. The interest rate swap contract matures in June 2023.

Rising inflation and interest rates may adversely affect our businesses, financial condition, and operating results.

The Company continues to operate in a challenging macro environment as inflation and interest rates continue to rise globally. The impact of these issues on our business will vary by geographic market and operating segment. We continue to monitor economic conditions closely, as well as segment revenues, cash position, cash flow from operations, interest rates and other factors. Across our three operating segments - Ting, Wavelo and Tucows Domains, personnel costs were impacted by wage inflation in the current period, with issued increases in excess of 5% to align with economic conditions and market rates. These increases were necessary in order to remain competitive to attract and retain the best talent. The Company continues to monitor and assess wage inflation and is managing it against offsets in hiring plans and contractor mix. Outside of wage inflation, the operating segment most impacted by inflation overall is Ting, as sustained levels of inflation increase our Fiber Network build costs across both materials and contracted labor. We continue to assess ways to reduce build costs through more efficient management of our build design, build efficiency and real-time tracking of build costs to more effectively manage total cost estimates against actual spends. We are also managing our significant vendor relationships closely to mitigate supply chain disruptions and ensure optimal pricing. However, there can be no assurance as to the effectiveness of our efforts to mitigate our efforts any impact of the current and future adverse economic conditions, and other unknown developments.

Our business and financial performance could be adversely affected, directly or indirectly, by both global and local climate and environmental natural disasters, health crises and other disruptive activities.

Neither the occurrence nor the potential impact of global and local climate and environmental natural disasters, health crises and other disruptive activities can be predicted. However, these occurrences could impact us directly as a result of damage or by preventing us from conducting our business in the ordinary course, or indirectly as a result of their impact on our customers, suppliers or other counterparties. We could also suffer adverse consequences to the extent that such occurrences affect the financial markets or the economy in general or in any particular region or globally. Our ability to mitigate the adverse consequences of such occurrences is in part dependent on the quality of our resiliency planning, and our ability, if any, to anticipate the nature of any such event that occurs. The adverse impact of such occurrences also could be increased to the extent that there is a lack of preparedness on the part of international, national or regional emergency responders or on the part of other organizations and businesses that we deal with, particularly those that we depend upon but have no control over.

The ongoing global COVID-19 pandemic continued to characterize Fiscal 2022, however the financial and operational impacts from COVID-19 on our business have been limited. Over the past year, we've monitored the situation and its impacts on our business but have ultimately seen trends stabilize, with continued recovery in U.S. markets due to large-scale vaccination programs. Management continues to assess the impact regularly but expects limited financial and operational impact through the upcoming fiscal year, should the COVID-19 pandemic persist. While the spread of COVID-19 may eventually be contained or mitigated, there is no guarantee that a future outbreak or any other widespread pandemics, epidemics or other health crises will not occur, or that the global economy will recover, either of which could seriously harm our business.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our principal administrative, engineering, marketing and sales office is located in Toronto, Ontario, and consists of approximately 28,000 square feet. We lease satellite offices in various cities across the U.S. as well as internationally in Germany and Denmark. The Toronto, Ontario office supports all of our segments. Leased satellite offices across the U.S. support the Ting segment, while European offices support Tucows Domains.

The Company has acquired real property in Centennial, Colorado where it has constructed an office, warehouse and data center to support our local logistical operations and our North American colocation needs. This property primarily supports the Ting segment.

Currently, substantially all of our computer and communications hardware is located at our facilities or at server hosting facilities in Toronto, Ontario, California, Centennial, Colorado, Ashburn, Virginia, Charlottesville, Virginia, Durango, Colorado and Moncure, North Carolina.

Recent Sales of Unregistered Securities

None.

ITEM 3. LEGAL PROCEEDINGS

We are involved in various investigations, claims and lawsuits arising in the normal conduct of our business, none of which, individually or in aggregate in our opinion, will materially harm our business. We cannot assure you that we will prevail in any litigation. Regardless of the outcome, any litigation may require us to incur significant litigation expense and may result in significant diversion of management attention.

In addition, pursuant to Item 103(c)(3)(iii) of Regulation S-K under the Exchange Act, the Company is required to disclose certain information about environmental proceedings to which governmental authority is a party if the Company reasonably believes such proceedings may result in monetary sanctions, exclusive of interest and costs, above a stated threshold. The Company has elected to apply a threshold of $1 million for purposes of determining whether disclosure of any such proceedings is required.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Price Range of Common stock

Our common stock is traded on the NASDAQ Capital Market under the symbol "TCX". Our common stock is also traded on the Toronto Stock Exchange under the symbol "TC".

As of March 13, 2023, Tucows had 74 shareholders of record.

We have not declared or paid any cash dividends on our common stock during the fiscal years ended December 31, 2022 and December 31, 2021, and we do not intend to do so in the immediate future, but we may decide to do so in the future depending on ongoing market conditions. Our ability to pay any cash dividends on our common stock, should our Board decide to do so, is also dependent on our earnings and cash requirements and may, from time to time, be governed by the terms of our credit agreements.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

2023 Stock Buyback Program:

On February 9, 2023, the Company announced that its Board had approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 10, 2023 and is expected to terminate on February 9, 2024.

2022 Stock Buyback Program:

On February 10, 2022, the Company announced that its Board had approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 11, 2023 and terminated on February 9, 2022. The Company repurchased no shares under this program.

2021 Stock Buyback Program:

On February 9, 2021, the Company announced that its Board had approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 10, 2021 and terminated on February 9, 2022. The Company repurchased no shares under this program.

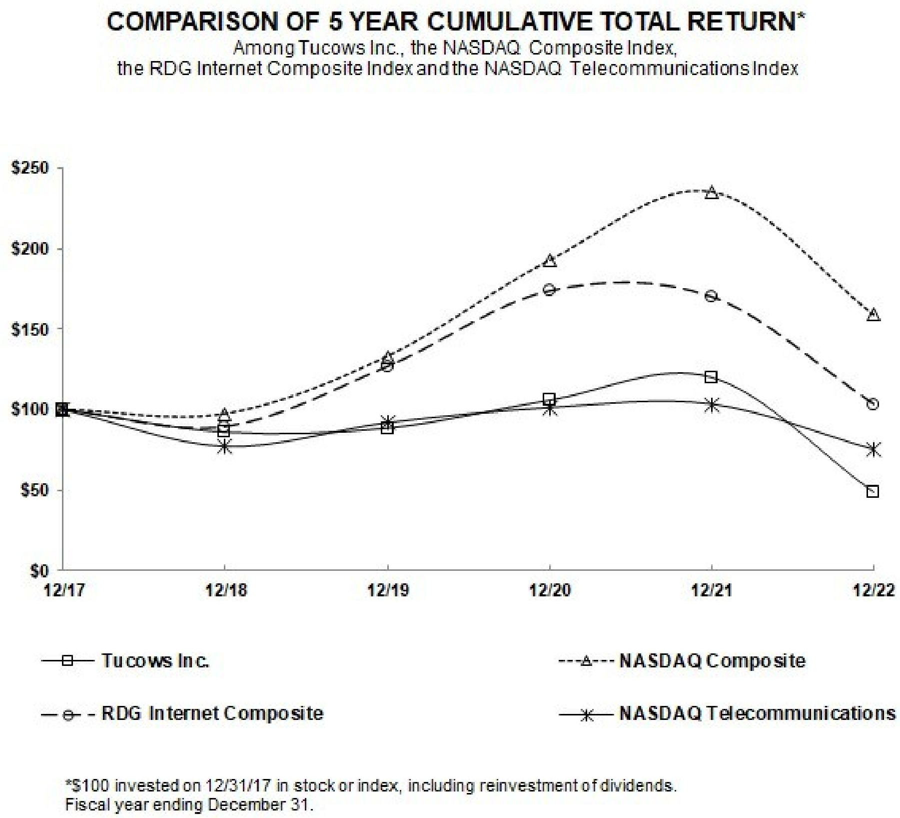
Net Exercise of Stock Options:

Our current equity-based compensation plans include provisions that allow for the "net exercise" of stock options by all plan participants. In a net exercise, any required payroll taxes, federal withholding taxes and exercise price of the shares due from the option holder can be paid for by having the option holder tender back to the Company a number of shares at fair value equal to the amounts due. These transactions are accounted for by the Company as a purchase and retirement of shares and are included in the table below as common stock received in connection with share-based compensation.

	Year Ended December 31,		
	2022	**2021**	**2020**
Common stock repurchased on the open market or through tender offer			
Number of shares	-	-	70,238
Aggregate market value of shares (in thousands)	$ -	$ -	$ 3,281
Average price per share	$ -	$ -	$ 46.70
Common stock received in connection with share-based compensation			
Number of shares	3,053	45,824	48,013
Aggregate market value of shares (in thousands)	$ 197	$ 3,669	$ 2,957
Average price per share	$ 64.67	$ 80.07	$ 61.58

STOCK PERFORMANCE GRAPH

The following graph and table compares the Company's stock performance to three stock indices over a five-year period assuming a $100 investment was made on the last day of fiscal year 2017.



ITEM 6. RESERVED.

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

OVERVIEW

Our mission is to provide simple useful services that help people unlock the power of the Internet.

We accomplish our mission by reducing the complexity of our customers’ experience as they access the Internet (at home or on the go) and while using Internet services such as domain name registration, email and other Internet related services. During the first quarter of 2022, the Company completed a reorganization of its reporting structure into three operating and reportable segments: Ting, Wavelo and Tucows Domains. Previously, we disclosed the three operating and reportable segments: Fiber Internet Services, Mobile Services and Domain Services. The change to our reportable operating segments was the result of a shift in our business and management structures that was initiated in 2021 and completed during the first quarter of 2022. The operations supporting what was previously known as our Mobile Services segment have become increasingly operationally distinct between our mobile retail services and our platform services. Through the reorganization of our reporting structure, the Mobile Services segment was changed to the Wavelo segment, which no longer includes the 10-year payment stream on transferred legacy subscribers earned as part of the DISH Purchase Agreement as well as the retail sale of mobile phones, retail telephony services and transition services, all of which are no longer reviewed separately by our Group Chief Executive Officer (CEO), who is also our chief operating decision maker for the purposes of making resource allocation decisions. The Wavelo segment includes our platform and professional services offerings, as well as the billing solutions to Internet services providers ("ISPs") (branded as Platypus), that was previously reported under the Ting segment. The Ting segment now only contains the operating results of our retail high speed Internet access operations, excluding the billing solutions moved to the new Wavelo segment. The product offerings included in the Tucows Domains segment remains unchanged. The three segments are differentiated primarily by their services, the markets they serve and the regulatory environments in which they operate

Our management regularly reviews our operating results on a consolidated basis, principally to make decisions about how we utilize our resources and to measure our consolidated operating performance. To assist us in forecasting growth and to help us monitor the effectiveness of our operational strategies, our management regularly reviews revenues, operating results and performance for each of our service offerings in order to gain more depth and understanding of the key business metrics driving our business. Commencing in the first quarter of 2022, our Group CEO, who is also our chief operating decision maker, reviews the operating results of Ting, Wavelo and Tucows Domains as three distinct segments in order to make key operating decisions as well as evaluate segment performance. Accordingly, effective January 1, 2022 we report Ting, Wavelo and Tucows Domains revenue separately. The 10-year payment stream on transferred legacy subscribers as well as retail sale of mobile phones, retail telephony services and transition services will be excluded from segment EBITDA results as they are no longer centrally managed and not monitored by or reported to our CEO by segment.

For the years ended December 31, 2022, 2021 and 2020, we reported revenue of $321 million, $304 million and $311 million, respectively.

On August 8, 2022, the Company entered into the Amended Credit Agreement with its existing syndicate of lenders ("the Lenders"). The Amended Credit Agreement continued to provide the Company with access to an aggregate of $240 million in committed funds ("the Credit Facility"). Under the Amended Credit Agreement, and in connection with the Unit Purchase Agreement the Lenders agreed that Ting Fiber, Inc. (converted to Ting LLC) and its wholly owned subsidiaries shall cease to be Guarantors under the Credit Facility and shall automatically be released from their respective guarantee and security documents, including a release of Lenders' security interests and liens upon the assets of such entities. Additionally, the Amended Credit Agreement extended the maturity of the Credit Facility to June 14, 2024. The Company was subject to the following financial covenants at all times, which are to be calculated on a rolling four quarter basis: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4:00:1:00 until September 29, 2023 and 3.75:1:00 thereafter; and (ii) minimum Interest Coverage Ratio of 3:00:1:00. The financial covenant calculations will exclude the financial results of Ting Fiber Inc. (converted to Ting LLC) and its wholly owned subsidiaries. The Amended Credit Agreement added SOFR Loans as a form of advance available under the Credit Facility to replace LIBOR rate advances, and such SOFR loans may bear interest based on Adjusted Daily Simple SOFR (defined to be the applicable SOFR rate published by the Federal Reserve Bank of New York plus 0.10% per annum subject to a floor of zero) or Adjusted Term SOFR (defined to be the applicable SOFR rate published by CME Group Benchmark Administration Limited plus 0.10% for one-month, 0.15% for three months; and 0.25% for six-months per annum).

On March 14, 2023 the Company entered into an Amendment No.2 (the "Credit Agreement Amendment") to the third Amended and Restated Senior Secured Credit Agreement (the "Amended Credit Agreement") with its existing syndicate of lenders. The Amended Credit Agreement continues to provide the Company with access to an aggregate of $240 million in committed funds, however there is a suspension to the $60 million accordion during the relief period (the "Leverage Step Up Period") which is defined as from Closing (March 14, 2023) to the date that the Company delivers a compliance certificate for the period ending on December 31, 2023 demonstrating compliance with financial covenants. Additionally, the Credit Agreement Amendment has extended the maturity of the Credit Facility to September 30, 2024. As a result of the closing of the Credit Agreement Amendment, the Company is subject to the following financial covenants at all times, with monthly testing during the Leverage Step Up Period and reverting to quarterly tests thereafter: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 from March 14, 2023 up to and including September 29, 2023; 4.00:1.00 from September 30, 2023 up to and including December 30, 2023; and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. On March 14, 2023 the Company made a repayment of $2.8 million on the Credit Facility.

Ting

Ting and its wholly owned subsidiaries, Cedar and Simply Bits includes the provision of high-speed Internet access services to select towns throughout the United States, with further expansion underway to both new and existing markets. Our primary sales channel is through the Ting website. The primary focus of this segment is to provide reliable Gigabit Fiber and Fixed Wireless Internet services to consumer and business customers. Revenues from Ting Internet are all generated in the U.S. and are billed on a monthly basis. Ting Internet services have no fixed contract terms.

As of December 31, 2022, Ting Internet had access to 96,000 owned infrastructure serviceable addresses, 20,000 partner infrastructure serviceable addresses and 35,000 active accounts under its management; compared to having access to 76,000 owned infrastructure serviceable addresses, 15,000 partner infrastructure serviceable addresses and 26,000 active accounts under its management as of December 31, 2021. These figures exclude the increase in serviceable addresses and accounts attributable to the Simply Bits acquisition.

Wavelo

Wavelo includes the provision of full-service platforms and professional services providing a variety of solutions that support CSPs, including subscription and billing management, network orchestration and provisioning, and individual developer tools. Wavelo's focus is to provide accessible telecom software to CSPs globally, minimizing network and technical barriers and improving internet access worldwide. Wavelo's suite of flexible, cloud-based software simplifies the management of mobile and internet network access, enabling CSPs to better utilize their existing infrastructure, focus on customer experience and scale their businesses faster. Wavelo launched as a proven asset for CSPs, with DISH using Wavelo's MONOS software to drive additional value within its Digital Operator Platform since 2021. More recently, Ting Internet has also integrated Wavelo's ISOS and SM software to enable faster subscriber growth and footprint expansion. The Wavelo segment also includes the Platypus brand and platform, our legacy billing solution for ISPs, that was previously reported under the Ting segment. Wavelo revenues from MONOS, ISOS, SM and professional services are all generated in the U.S. and our customer agreements have set contract lengths with the underlying CSP. Similarly, Platypus revenues are largely generated in the U.S., with a small portion earned in Canada and other countries.

Domain Services

Tucows Domains includes wholesale and retail domain name registration services, as well as value added services derived through our OpenSRS, eNom, Ascio, EPAG and Hover brands. We earn revenues primarily from the registration fees charged to resellers in connection with new, renewed and transferred domain name registrations. In addition, we earn revenues from the sale of retail domain name registration and email services to individuals and small businesses. Tucows Domains revenues are attributed to the country in which the contract originates, which is primarily in Canada and the U.S for OpenSRS and eNom brands. Ascio domain services contracts and EPAG agreements primarily originate in Europe.

Our primary distribution channel is a global network of approximately 35,000 resellers that operate in over 150 countries and who typically provide their customers, the end-users of Internet-based services, with solutions for establishing and maintaining an online presence. Our primary focus is serving the needs of this network of resellers by providing the broadest portfolio of gTLD and the country code top-level domain options and related services, a white-label platform that facilitates the provisioning and management of domain names, a powerful Application Program Interface, easy-to-use interfaces, comprehensive management and reporting tools, and proactive and attentive customer service. Our services are integral to the solutions that our resellers deliver to their customers. We provide "second tier" support to our resellers by email, chat and phone in the event resellers experience issues or problems with our services. In addition, our Network Operating Center proactively monitors all services and network infrastructure to address deficiencies before customer services are impacted.

Wholesale, primarily branded as OpenSRS, eNom, EPAG and Ascio, derives revenue from its domain name registration service. Together the OpenSRS, eNom, EPAG and Ascio Domain Services manage 24.4 million domain names under the Tucows, eNom, EPAG and Ascio ICANN registrar accreditations and for other registrars under their own accreditations. Domains under management has decreased by 0.8 million domain names since December 31, 2021. The decrease is driven by lower renewal rates from the normalization of registration growth back to pre-pandemic levels, along with the continued erosion of registrations related to non-core customers from our eNom brand.

Value-Added Services include hosted email which provides email delivery and webmail access to millions of mailboxes, Internet security services, WHOIS privacy, publishing tools and other value-added services. All of these services are made available to end-users through a network of 35,000 web hosts, ISPs, and other resellers around the world. In addition, we also derive revenue by monetizing domain names which are near the end of their lifecycle through expiry auction sale.

Retail, primarily the Hover and eNom portfolio of websites, including eNom, and eNom Central, derive revenues from the sale of domain name registration and email services to individuals and small businesses. Our retail domain services also include our Personal Names Service – based on over 36,000 surname domains – that allows roughly two-thirds of Americans to purchase an email address based on their last name. The retail segment now includes the sale of the rights to its portfolio of surname domains used in connection with our RealNames email service and our Exact Hosting Service, that provides Linux hosting services for individual and small business websites.

KEY BUSINESS METRICS AND NON-GAAP MEASURES

We regularly review a number of business metrics, including the following key metrics and non-GAAP measures, to assist us in evaluating our business, measure the performance of our business model, identify trends impacting our business, determine resource allocations, formulate financial projections and make strategic business decisions. Following the sale of substantially all of the Ting Mobile customers as part of the Purchase Agreement, we have ceased reporting Ting Mobile subscribers and accounts under management. The following tables set forth the key business metrics which we believe are the primary indicators of our performance for the periods presented:

Adjusted EBITDA

Tucows reports all financial information in accordance with United States generally accepted accounting principles ("GAAP"). Along with this information, to assist financial statement users in an assessment of our historical performance, we typically disclose and discuss a non-GAAP financial measure, adjusted EBITDA, on investor conference calls and related events that excludes certain non-cash and other charges as we believe that the non-GAAP information enhances investors' overall understanding of our financial performance. Please see discussion of adjusted EBITDA in the Results of Operations section below.

Ting Internet	**For the year ended December 31,**		
	2022	**2021**	**2020**
		(in '000's)	
Ting Internet accounts under management	35	26	15
Ting Internet owned infrastructure serviceable addresses (1)	96	76	49
Ting Internet partner infrastructure serviceable addresses (1)	20	15	10

(1) Defined as premises to which Ting has the capability to provide a customer connection in a service area.

Tucows Domains	As of December 31,		
	2022	2021	2020
Total new, renewed and transferred-in domain name registrations provisioned(1)	21,774	22,530	23,032
Domains under management:			
Registered using Registrar Accreditation belonging to the Tucows Group	17,921	18,909	19,685
Registered using Registrar Accreditation belonging to Resellers	6,469	6,254	5,692
Total domain names under management	24,390	25,163	25,377

(1) For a discussion of these period-to-period changes in the domains provisioned and domains under management and how they impacted our financial results see the Net Revenues discussion below.

OPPORTUNITIES, CHALLENGES AND RISKS

Our revenue is primarily realized in U.S. dollars and a major portion of our operating expenses are paid in Canadian dollars. Fluctuations in the exchange rate between the U.S. dollar and the Canadian dollar may have a material effect on our business, financial condition and results from operations. In particular, we may be adversely affected by a significant weakening of the U.S. dollar against the Canadian dollar on a quarterly and an annual basis. Our policy with respect to foreign currency exposure is to manage our financial exposure to certain foreign exchange fluctuations with the objective of neutralizing some or all of the impact of foreign currency exchange movements by entering into foreign exchange forward contracts to mitigate the exchange risk on a portion of our Canadian dollar exposure. We may not always enter into such forward contracts and such contracts may not always be available and economical for us. Additionally, the forward rates established by the contracts may be less advantageous than the market rate upon settlement.

Ting

As an ISP, we have invested and expect to continue to invest in new fiber to the home ("FTTH") deployments in select markets in the United States. The investments are a reflection of our ongoing efforts to build FTTH network via public-private partnerships in communities we identify as having strong, unmet demand for FTTH services. Given the significant upfront build and operational investments for these FTTH deployments, there is risk that future technological and regulatory changes as well as competitive responses from incumbent local providers, may result in us not fully recovering these investments.

The communications industry continues to compete on the basis of network reach and performance, types of services and devices offered, and price.

Wavelo

Wavelo launched as a proven asset for CSPs, with DISH using Wavelo's MONOS software to drive additional value within its Digital Operator Platform since 2021. More recently, Ting Internet has also integrated Wavelo's ISOS software to enable faster subscriber growth and footprint expansion. With our external platform and professional services revenues concentrated to one customer in DISH, we are exposed to significant risk if we are unable to maintain this customer relationship or establish new relationships for any our Platforms in the future. Additionally, our revenues as a platform provider are directly tied to the subscriber volumes of DISH's MVNO or MNO networks, and our profitability is contingent on the ability of DISH to continue to add subscribers, either from organic growth or from migration off legacy systems, onto our platforms.

Domain Services

The increased competition in the market for Internet services in recent years, which we expect will continue to intensify in the short and long term, poses a material risk for us. As new registrars are introduced, existing competitors expand service offerings and competitors offer price discounts to gain market share, we face pricing pressure, which can adversely impact our revenues and profitability. To address these risks, we have focused on leveraging the scalability of our infrastructure and our ability to provide proactive and attentive customer service to aggressively compete to attract new customers and to maintain existing customers.

Substantially all of our Tucows Domains revenue is derived from domain name registrations and related value-added services from wholesale and retail customers using our provisioning and management platforms. The market for wholesale registrar services is both price sensitive and competitive and is evolving with the introduction of new gTLDs, particularly for large volume customers, such as large web hosting companies and owners of large portfolios of domain names. We have a relatively limited ability to increase the pricing of domain name registrations without negatively impacting our ability to maintain or grow our customer base. Growth in our Tucows Domains revenue is dependent upon our ability to continue to attract and retain customers by maintaining consistent domain name registration and value-added service renewal rates and to grow our customer relationships through refining, evolving and improving our provisioning platforms and customer service for both resellers and end-users. In addition, Tucows Domains also generate revenues through the sale of names from our portfolio of domain names and through the OpenSRS, eNom, and Ascio Domain Expiry Stream. The revenue associated with names sales and advertising has recently experienced flat to declining trends due to the uncertainty around the implementation of ICANN's New gTLD Program, lower traffic and advertising yields in the marketplace, which we expect to continue.

From time-to-time certain of our vendors provide us with market development funds to expand or maintain the market position for their services. Any decision by these vendors to cancel or amend these programs for any reason may result in payments in future periods not being commensurate with what we have achieved during past periods.

Other opportunities, challenges and risks

The Company is entitled to a long-term payment stream that is a function of the margin generated by the transferred Ting Mobile subscribers over the 10-year term of the DISH Purchase Agreement executed in Fiscal 2020. This consideration structure may not prove to be successful or profitable in the long-term to us if the existing subscriber base churns at an above average rate. Additionally, given DISH controls the revenues and costs incurred associated with the acquired subscribers, there could arise a situation where profitability for the subscriber base is diminished either by lower price points or cost inflation. Additionally, as part of the DISH Purchase agreement, the Company retained a small number of customer accounts associated with one MNO agreement that was not reassigned to DISH at time of sale. We continue to be subject to the minimum revenue commitments previously agreed to with this excluded MNO agreement. The Company is able to continue adding customers under the excluded MNO network. However, with no direct ability to change customer pricing and limited ability to renegotiate contract costs or significant terms, the Company may be unable to meet the minimum commitments with this MNO partner and could incur significant and recurring penalties until such a time that the contract is complete. These penalties would negatively impact our operational performance and financial results if enforced by the MNO. As a result of a successful negotiation with the MNO partner in Fiscal 2022, the Company was able to defer the impact of the penalties into Fiscal 2023 and beyond. The Company expects to incur penalties starting in Fiscal 2023 and thereafter until the contract is complete. The expected penalties in Fiscal 2023 are $0.5 million and the penalties could increase until the end of the contract in 2025.

An in-depth assessment of the risk factors impacting our businesses has been discussed at length above in Part I under the caption "Item 1A Risk Factors" in this Annual Report on Form 10-K.

Critical Accounting Estimates

The following is a discussion of our critical accounting estimates. Critical accounting estimates are defined as those that are both important to the portrayal of our financial condition and results of operations and are reflective of significant judgments and uncertainties made by management that may result in materially different results under different assumptions and conditions. "Note 2 – Significant Accounting Policies" of the Notes to the Consolidated Financial Statements for Fiscal 2022 included in Part II, Item 8 of this Annual Report, includes further information on the significant accounting policies and methods used in the preparation of our consolidated financial statements.

The preparation of the consolidated financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. Management bases its estimates on historical experience, available market information as applicable, and on various other assumptions that are believed to be reasonable under the circumstances at the time they are made. Under different assumptions or conditions, the actual results will differ, potentially materially, from those previously estimated. Many of the conditions impacting these assumptions and estimates are outside of the Company's control. Management evaluates its estimates on an on-going basis.

Contracts with multiple performance obligations

Our platform service contract contains multiple performance obligations with DISH. We are required to allocate the transaction price between performance obligations - Platform Services and Professional Services, which impacts the timing of revenue recognition. We determine the stand-alone selling price of Platform Services using the residual method, which requires us to make estimates of future consideration earned during the entire term of the mobile platform service contract as well as the stand-alone selling price of Professional Services. Changes in assumptions could cause an increase or decrease in the amount of revenue that we report in a particular period.

Acquired customer relationships

For acquired customer relationships, the Company estimates the fair value based on the income approach. The income approach is a valuation technique that calculates the fair value of an intangible asset based on the present value of future cash flows expected to be generated over the remaining useful life of the asset. This valuation involves significant subjectivity and estimation uncertainty, including assumptions related to future revenues attributable to acquired customer relationships, attrition rates and discount rates.

Loss contingencies

We are sometimes subject to claims, suits, regulatory and government investigations, and other proceedings involving competition, intellectual property, privacy, tax and related compliance, labor and employment, commercial disputes, and other matters. Certain of these matters include speculative claims for substantial or indeterminate amounts of damages. We record a liability when we believe that it is probable that a loss has been incurred and the amount can be reasonably estimated.

We evaluate, on a regular basis, developments in our legal matters that could affect the amount of liability that has been previously accrued, and the matters and related reasonably possible losses disclosed, and make adjustments and changes to our disclosures as appropriate. Significant judgment is required to determine both the likelihood and the estimated amount of a loss related to such matters. Until the final resolution of such matters, there may be an exposure to loss in excess of the amount recorded, and such amounts could be material.

Impairment of Goodwill and intangibles

We evaluate factors such as macro-economic, industry and market conditions including the capital markets, the competitive environment, in addition to other internal factors including changes to our market capitalization, cash inflows, obligations and access to capital of our segments. We concluded that there were no indications of impairment under the qualitative approach. The analysis was consistent with the approach we utilized in our analysis performed in prior years.

Any changes to our key assumptions about our businesses and our prospects, or changes in market conditions, could cause the fair value of our operating segments to fall below its carrying value, resulting in a potential impairment charge. In addition, changes in our organizational structure or how our management allocates resources and assesses performance, could result in a change in our operating segments, requiring a reallocation and updated impairment analysis of goodwill and indefinite life intangible assets.

Changes in estimates

There were no material changes to our critical accounting estimates during Fiscal 2022.

Revenue Recognition Policy

The Company's revenues are derived from (a) the provisioning of retail fiber Internet services in our Ting segment, (b) the provisioning of CSP focused platform services and professional services in our Wavelo segment; and from (c) domain name registration contracts, other domain related value-added services, domain sale contracts, and other advertising revenue in our Tucows Domains segment. Amounts received in advance of meeting the revenue recognition criteria described below are recorded as deferred revenue. All products are generally sold without the right of return or refund.

Revenue is measured based on consideration specified in a contract with a customer and excludes any sales incentives and amounts collected on behalf of third parties. The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to a customer.

Nature of goods and services

The following is a description of principal activities – separated by reportable segments – from which the Company generates its revenue. For more detailed information about reportable segments. See "Note 20 – Segment Reporting" of the Notes to the Consolidated Financial Statements included in this report for more information.

(a) Ting

Ting and its subsidiaries - Cedar, and Simply Bits includes the provision of high-speed Internet access services to select towns throughout the United States, with further expansion underway to both new and existing markets. Our primary sales channel is through the Ting website. The primary focus of this segment is to provide reliable Gigabit Fiber and Fixed Wireless Internet services to consumer and business customers. Revenues are all generated in the U.S., have no fixed contract terms and are billed on a monthly basis, with unlimited bandwidth based on a fixed price.

The Company's billing cycle for all Ting Internet customers is computed based on the customer's activation date. Since consideration is collected before the service period, revenue is initially deferred and recognized as the Company performs its obligation to provide Internet access within each reporting period. In addition, revenues associated with the sale of Internet hardware to subscribers are recognized when title and risk of loss is transferred to the subscriber and shipment has occurred. Incentive marketing credits given to customers are recorded as a reduction of revenue.

In those cases where payment is not received at the time of sale, as is the case for service requiring installation, then revenue is not recognized until a customer's service is activated. The Company records costs that reflect expected refunds, rebates and credit card charge-backs as a reduction of revenues at the time of the sale based on historical experiences and current expectations.

(b) Wavelo

Platform Services

Tucows' Platform Services include the following full-service platforms from Wavelo, including MONOS, ISOS, SM and our legacy Platypus ISP Billing software. Under each of these platforms there are a variety of solutions that support CSPs, including subscription and billing management, network orchestration and provisioning, and individual developer tools. Wavelo launches as a proven asset for CSPs, with DISH using Wavelo's MONOS software to drive additional value within its Digital Operator Platform since 2021. More recently, Ting has also integrated Wavelo's ISOS and SM software to enable faster subscriber growth and footprint expansion. Wavelo's customers are billed monthly, on a postpaid basis. The monthly fees are variable, based on the volume of their subscribers utilizing the platform during a given month, to which minimums may apply. Customers may also be billed fixed platform fees and granted fixed credits as part of the consideration for long-term contracts. Consideration received is allocated to platform services and bundled professional services and recognized as each service obligation is fulfilled. Any fixed fees for Wavelo are recognized into revenue evenly over the service period, while variable usage fees are recognized each month as they are consumed. Professional services revenue is recognized as the hours of professional services granted to the customer are used or expire. When consideration for these platform services is received before the service is delivered, the revenue is initially deferred and recognized only as the Company performs its obligation to provide services. Likewise, if platform services are delivered before the Company has the unconditional right to invoice the customer, revenue is recognized as a Contract Asset.

Other Professional Services

This revenue stream includes any other professional services earned in connection with the Wavelo business from the provision of standalone technology services development work. These are billed to our customers monthly at set and established rates for services provided in period. The Company recognizes revenue over this revenue stream as the Company satisfies its obligations to provide professional services.

(c) Tucows Domains

Wholesale - Domain Services

Domain registration contracts, which can be purchased for terms of one to ten years, provide our resellers and retail registrant customers with the exclusive right to a personalized internet address from which to build an online presence. The Company enters into domain registration contracts in connection with each new, renewed and transferred-in domain registration. At the inception of the contract, the Company charges and collects the registration fee for the entire registration period. Though fees are collected upfront, revenue from domain registrations are recognized ratably over the registration period as domain registration contracts contain a 'right to access' license of IP, which is a distinct performance obligation measured over time. The registration period begins once the Company has confirmed that the requested domain name has been appropriately recorded in the registry under contractual performance standards.

Historically, our wholesale domain service has constituted the largest portion of our business and encompasses all of our services as an accredited registrar related to the registration, renewal, transfer and management of domain names. In addition, this service fuels other revenue categories as it often is the initial service for which a reseller will engage us, enabling us to follow on with other services and allowing us to add to our portfolio by purchasing names registered through us upon their expiration. Tucows Domains will continue to be the largest portion of our business and will further fuel our ability to sell add-on services.

The Company is an ICANN accredited registrar. Thus, the Company is the primary obligor with our reseller and retail registrant customers and is responsible for the fulfillment of our registrar services to those parties. As a result, the Company reports revenue in the amount of the fees we receive directly from our reseller and retail registrant customers. Our reseller customers maintain the primary obligor relationship with their retail customers, establish pricing and retain credit risk to those customers. Accordingly, the Company does not recognize any revenue related to transactions between our reseller customers and their ultimate retail customers.

Wholesale – Value-Added Services

We derive revenue from domain related value-added services like digital certifications, WHOIS privacy and hosted email and by providing our resellers and retail registrant customers with tools and additional functionality to be used in conjunction with domain registrations. All domain related value-added services are considered distinct performance obligations which transfer the promised service to the customer over the contracted term. Fees charged to customers for domain related value-added services are collected at the inception of the contract, and revenue is recognized on a straight-line basis over the contracted term, consistent with the satisfaction of the performance obligations.

We also derive revenue from other value-added services, which primarily consists of proceeds from the OpenSRS, eNom and Ascio domain expiry streams.

Retail

We derive revenues mainly from Hover and eNom's retail properties through the sale of retail domain name registration and email services to individuals and small businesses. The retail segment now includes the sale of the rights to its portfolio of surname domains used in connection with our RealNames email and Linux hosting services for websites through our Exact Hosting brand.

For information about geographic areas, see "Note 20– Segment Reporting" of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report.

(d) Tucows Corporate - Mobile Services and Eliminations

Although we still provide mobile telephony services to a small subset of customers retained through the Ting Mobile brand as part of the DISH Purchase Agreement executed in Fiscal 2020; this revenue stream no longer represents the Company's strategic focus going forward. Instead we have transitioned towards being a platform provider for CSPs globally via our Wavelo segment. Where these retail mobile services revenues were previously disclosed as part of a Mobile Services segment in the prior year, effective January 1, 2022 we have decided to exclude retail telephony services and transition services revenues from segment EBITDA results as they are no longer centrally managed and not monitored by or reported to our CEO by segment.

Ting Mobile wireless usage contracts grant customers access to standard talk, text and data mobile services. Ting Mobile contracts are billed based on the customer's selected rate plan, which can either be usage based or an unlimited plan. All rate plan options are charged to customers on a postpaid, monthly basis at the end of their billing cycle. All future revenues associated with Retail Mobile Services stream will only be for this subset of customers retained by the Company, as mentioned above. Ting Mobile services are primarily contracted through the Ting website, for one month at a time and contain no commitment to renew the contract following each customer's monthly billing cycle. The Company's billing cycle for all Ting Mobile customers is computed based on the customer's activation date. In order to recognize revenue as the Company satisfies its obligations, we compute the amount of revenues earned but not billed from the end of each billing cycle to the end of each reporting period. In addition, revenues associated with the sale of wireless devices and accessories are recognized when title and risk of loss is transferred to the customer and shipment has occurred. Incentive marketing credits given to customers are recorded as a reduction of revenue.

These Mobile Services revenue streams also includes transitional services provided to DISH. These are billed monthly at set and established rates for services provided in period and include the provision of sales, marketing, customer support, order fulfillment, and data analytics related to the legacy customer base sold to DISH. The Company recognizes revenue as the Company satisfies its obligations to provide transitional services.

As a form of consideration for the sale of the customer relationships, the Company receives a payout on the margin associated with the legacy customer base sold to DISH, over a period of 10 years. This has been classified as Other Income and not considered revenue in the current period.

Valuation of Goodwill, Intangible Assets and Long-Lived Assets

The excess of the purchase price over the fair values of the identifiable assets and liabilities from our acquisitions is recorded as goodwill. At December 31, 2022, we had $130.4 million in goodwill related to our acquisitions and $39.8 million in intangible assets comprised of indefinite life intangibles of $12.3 million and finite life intangible assets of $27.5 million. At December 31, 2021, we had $130.4 million in goodwill related to our acquisitions and $50.4 million in intangible assets comprised of indefinite life intangibles of $12.3 million and finite life intangible assets of $38.1 million. As described above, we report our financial results as three operating segments, Ting, Wavelo and Tucows Domains. The goodwill balance is built up of $107.7 million (83%) related to Tucows Domains and $22.7 million (17%) related to Ting. Of our goodwill balance, $90.3 million is not deductible for tax purposes. Seventy-one percent of intangible assets relate to our Tucows Domains operating segment and 29% of intangible assets relate to our Ting segment.

We account for goodwill and indefinite life intangible assets in accordance with the Financial Accounting Standards Board ("FASB")'s authoritative guidance, which requires that goodwill and indefinite life intangible assets are not amortized, but are subject to an annual impairment test. We complete our impairment test on an annual basis, during the fourth quarter of our fiscal year, or more frequently, if changes in facts and circumstances indicate that impairment indicators are present.

Our indefinite life intangible assets consist of surname domain names and direct navigation domain names. In order to maintain our rights to these domain names, we pay annual renewal fees to the applicable domain name registries. Over the course of time, we sometimes decide not to renew certain under-performing domain names and incur an impairment charge associated with such non-renewal. There was no impairment recorded on indefinite-life intangible assets during 2022, 2021 and 2020.

With regard to long-lived assets comprised of property and equipment and finite life intangible assets, we continually evaluate whether events or circumstances have occurred that indicate the remaining estimated useful lives of our definite-life intangible assets may warrant revision or whether the carrying amount of such assets may not be recoverable and exceed their fair value. We use an estimate of the related undiscounted cash flows over the remaining life of the asset in measuring whether the asset is recoverable. During Fiscal 2022 and 2021 there was no impairment recorded on definite-life intangible assets and property and equipment. In 2020 there was a $1.4 million impairment recorded on definite-life intangible assets associated with the shutdown of the Roam Mobility brands.

We performed a qualitative assessment to determine whether there were events or circumstances which would lead to a determination, whether it is more likely than not, that goodwill and indefinite life intangible assets have been impaired. In performing the qualitative testing, we made an evaluation of the impact of various factors to the expected future cash flows attributable to our operating segments and to the assumed discount rate which would be used to present value those cash flows. Consideration was given to factors such as macro-economic, industry and market conditions including the capital markets, the competitive environment, in addition to other internal factors including changes to our market capitalization, cash inflows, obligations and access to capital of our segments. We concluded that there were no indications of impairment under the qualitative approach. The analysis was consistent with the approach we utilized in our analysis performed in prior years.

In connection with business acquisitions that we have completed, we identify and estimate the fair value of net assets acquired, including certain identifiable intangible assets (other than goodwill) and liabilities assumed. The determination of acquisition date fair values requires us to make significant estimates and assumptions regarding projected revenues, costs, earnings before interest, taxes, depreciation and amortization, attrition rates and discount rates. Changes to these assumptions may result in material differences depending on the size of the acquisition completed.

Any changes to our key assumptions about our businesses and our prospects, or changes in market conditions, could cause the fair value of our operating segments to fall below its carrying value, resulting in a potential impairment charge. In addition, changes in our organizational structure or how our management allocates resources and assesses performance, could result in a change in our operating segments, requiring a reallocation and updated impairment analysis of goodwill and indefinite life intangible assets. A goodwill or intangible asset impairment charge could have a material effect on our consolidated financial statements because of the significance of goodwill and intangible assets to our consolidated balance sheet. There was no further impairment of goodwill or intangible assets, both definite and indefinite life, as a result of the annual impairment tests completed during the fourth quarters of 2022, 2021 or 2020.

Accounting for Income Taxes

We operate in various tax jurisdictions, and accordingly, our income is subject to varying rates of tax. Losses incurred in one jurisdiction cannot be used to offset income taxes payable in another jurisdiction. Our ability to use income tax loss carry forwards and future income tax deductions is dependent upon our operations in the tax jurisdictions in which such losses or deductions arise. Significant judgment is required in determining our provision for income taxes and evaluating our uncertain tax positions.

We account for income taxes under the asset and liability method, which recognizes the deferred tax assets or liabilities for the anticipated future tax effects of temporary differences between the financial statement basis and the tax basis of our assets and liabilities. Valuation allowances are established to reduce deferred tax assets when it is more likely than not that the benefit from the deferred tax assets will not be realized. In assessing the need for valuation allowance, historical and future levels of income, expectations and risks associated with estimates of future taxable income and tax planning strategies are considered. As at December 31, 2022, the valuation allowance of $17.6 million was related to foreign tax credits that we are not expected to realize.

We apply a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if on the weight of available evidence, it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit that is more than 50% likely to be realized upon settlement. As at December 31, 2022, we did not recognize any uncertain tax provisions within the provision for income taxes.

See Note 9 to the Consolidated Financial Statements for further information regarding income taxes included in Part II, Item 8 of this Annual Report.

Recently Issued Accounting Standards

See “Note 2 – Significant Accounting Policies” of the Notes to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report for information regarding recently issued accounting standards.

Current COVID-19 response and expected impacts

The global COVID-19 pandemic continued to persist through Fiscal 2022, however the financial and operational impacts from COVID-19 on our business have been limited. Management continues to assess the impact regularly but expects limited financial and operational impact through the upcoming fiscal year, should the COVID-19 pandemic persist. While the spread of COVID-19 may eventually be contained or mitigated, there is no guarantee that a future outbreak will not occur as evidenced by numerous variants of the virus emerging. As a Company, we have transitioned to defining ourselves as a remote-first organization, and continue to enforce a full vaccination policy for any employees working from a Company office, meeting in person with customers or travel by plane or train for business purposes. We have not experienced any productivity issues, material resource constraints nor do we foresee requiring any material expenditures to continue to implement our business continuity plans described above. Likewise, we have not experienced nor do we foresee any future impacts to our liquidity position, credit risk, internal controls or impacts to our accounting policies as a result of the COVID-19 pandemic.

RESULTS OF OPERATIONS FOR THE YEAR ENDED DECEMBER 31, 2022 AS COMPARED TO THE YEAR ENDED DECEMBER 31 2021

NET REVENUES

Ting

Ting and its subsidiaries - Cedar, and Simply Bits includes the provision of high-speed Internet access services to select towns throughout the United States, with further expansion underway to both new and existing markets. Our primary sales channel is through the Ting website. The primary focus of this segment is to provide reliable Gigabit Fiber and Fixed Wireless Internet services to consumer and business customers. Revenues are all generated in the U.S., have no fixed contract terms and are billed on a monthly basis, with unlimited bandwidth based on a fixed price.

The Company's billing cycle for all Ting Internet customers is computed based on the customer's activation date. Since consideration is collected before the service period, revenue is initially deferred and recognized as the Company performs its obligation to provide Internet access within each reporting period. In addition, revenues associated with the sale of Internet hardware to subscribers are recognized when title and risk of loss is transferred to the subscriber and shipment has occurred. Incentive marketing credits given to customers are recorded as a reduction of revenue.

In those cases where payment is not received at the time of sale, as is the case for service requiring installation, then revenue is not recognized until a customer's service is activated. The Company records costs that reflect expected refunds, rebates and credit card charge-backs as a reduction of revenues at the time of the sale based on historical experiences and current expectations.

Wavelo

Platform Services

Tucows' Platform Services include the following full-service platforms from Wavelo, including MONOS, ISOS, SM and our legacy Platypus ISP Billing software. Under each of these platforms there are a variety of solutions that support CSPs, including subscription and billing management, network orchestration and provisioning, and individual developer tools. Wavelo launches as a proven asset for CSPs, with DISH using Wavelo's MONOS software to drive additional value within its Digital Operator Platform since 2021. More recently, Ting has also integrated Wavelo's ISOS and SM software to enable faster subscriber growth and footprint expansion. Wavelo's customers are billed monthly, on a postpaid basis. The monthly fees are variable, based on the volume of their subscribers utilizing the platform during a given month, to which minimums may apply. Customers may also be billed fixed platform fees and granted fixed credits as part of the consideration for long-term contracts. Consideration received is allocated to platform services and bundled professional services and recognized as each service obligation is fulfilled. Any fixed fees for Wavelo are recognized into revenue evenly over the service period, while variable usage fees are recognized each month as they are consumed. Professional services revenue is recognized as the hours of professional services granted to the customer are used or expire. When consideration for these platform services is received before the service is delivered, the revenue is initially deferred and recognized only as the Company performs its obligation to provide services. Likewise, if platform services are delivered before the Company has the unconditional right to invoice the customer, revenue is recognized as a Contract Asset.

Other Professional Services

This revenue stream includes any other professional services earned in connection with the Wavelo business from the provision of standalone technology services development work. These are billed to our customers monthly at set and established rates for services provided in period. The Company recognizes revenue over this new revenue stream as the Company satisfies its obligations to provide professional services.

Tucows Domains

Wholesale - Domain Services

Domain registration contracts, which can be purchased for terms of one to ten years, provide our resellers and retail registrant customers with the exclusive right to a personalized internet address from which to build an online presence. The Company enters into domain registration contracts in connection with each new, renewed and transferred-in domain registration. At the inception of the contract, the Company charges and collects the registration fee for the entire registration period. Though fees are collected upfront, revenue from domain registrations are recognized ratably over the registration period as domain registration contracts contain a 'right to access' license of IP, which is a distinct performance obligation measured over time. The registration period begins once the Company has confirmed that the requested domain name has been appropriately recorded in the registry under contractual performance standards.

Historically, our wholesale domain service has constituted the largest portion of our business and encompasses all of our services as an accredited registrar related to the registration, renewal, transfer and management of domain names. In addition, this service fuels other revenue categories as it often is the initial service for which a reseller will engage us, enabling us to follow on with other services and allowing us to add to our portfolio by purchasing names registered through us upon their expiration. We expect Domain services will continue to be the largest portion of our business and will continue to enable us to sell add-on services.

The Company is an ICANN accredited registrar. Thus, the Company is the primary obligor with our reseller and retail registrant customers and is responsible for the fulfillment of our registrar services to those parties. As a result, the Company reports revenue in the amount of the fees we receive directly from our reseller and retail registrant customers. Our reseller customers maintain the primary obligor relationship with their retail customers, establish pricing and retain credit risk to those customers. Accordingly, the Company does not recognize any revenue related to transactions between our reseller customers and their ultimate retail customers.

Wholesale – Value-Added Services

We derive revenue from domain related value-added services like digital certifications, WHOIS privacy and hosted email and by providing our resellers and retail registrant customers with tools and additional functionality to be used in conjunction with domain registrations. All domain related value-added services are considered distinct performance obligations which transfer the promised service to the customer over the contracted term. Fees charged to customers for domain related value-added services are collected at the inception of the contract, and revenue is recognized on a straight-line basis over the contracted term, consistent with the satisfaction of the performance obligations.

We also derive revenue from other value-added services, which primarily consists of proceeds from the OpenSRS, eNom and Ascio domain expiry streams.

Retail

We derive revenues mainly from Hover and eNom's retail properties through the sale of retail domain name registration and email services to individuals and small businesses. The retail segment now includes the sale of the rights to its portfolio of surname domains used in connection with our RealNames email service and Linux hosting services for websites through our Exact Hosting brand.

Tucows Corporate - Mobile Services and Eliminations

Although we still provide mobile telephony services to a small subset of customers retained through the Ting Mobile brand as part of the DISH Purchase Agreement executed in Fiscal 2020; this revenue stream no longer represents the Company's strategic focus going forward. Instead we have transitioned towards being a Wavelo provider for CSPs globally. Where these retail mobile services revenues were previously disclosed as part of a Mobile Services segment in the prior year, effective January 1, 2022 we have decided to exclude retail telephony services and transition services revenues from segment EBITDA results as they are no longer centrally managed and not monitored by or reported to our CEO by segment.

Ting Mobile wireless usage contracts grant customers access to standard talk, text and data mobile services. Ting Mobile contracts are billed based on the customer's selected rate plan, which can either be usage based or an unlimited plan. All rate plan options are charged to customers on a postpaid, monthly basis at the end of their billing cycle. All future revenues associated with Retail Mobile Services stream will only be for this subset of customers retained by the Company, as mentioned above. Ting Mobile services are primarily contracted through the Ting website, for one month at a time and contain no commitment to renew the contract following each customer's monthly billing cycle. The Company's billing cycle for all Ting Mobile customers is computed based on the customer's activation date. In order to recognize revenue as the Company satisfies its obligations, we compute the amount of revenues earned but not billed from the end of each billing cycle to the end of each reporting period. In addition, revenues associated with the sale of wireless devices and accessories are recognized when title and risk of loss is transferred to the customer and shipment has occurred. Incentive marketing credits given to customers are recorded as a reduction of revenue

These Mobile Services revenue streams also includes transitional services provided to DISH. These are billed monthly at set and established rates for services provided in period and include the provision of sales, marketing, customer support, order fulfillment, and data analytics related to the legacy customer base sold to DISH. The Company recognizes revenue as the Company satisfies its obligations to provide transitional services.

As a form of consideration for the sale of the customer relationships, the Company receives a payout on the margin associated with the legacy customer base sold to DISH, over a period of 10 years. This has been classified as Other Income and not considered revenue in the current period.

The following table presents our net revenues, by revenue source:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31, 2022	2021
Ting:		
Fiber Internet Services	$ 42,425	$ 25,327
Wavelo:		
Platform Services	22,594	13,031
Other professional services	1,750	3,750
Total Wavelo	24,344	16,781
Tucows Domains:		
Wholesale		
Domain Services	187,542	189,091
Value Added Services	20,712	20,942
Total Wholesale	208,254	210,033
Retail	34,904	35,543
Total Tucows Domains	243,158	245,576
Tucows Corporate:		
Mobile Services and eliminations	11,215	16,653
	$ 321,142	$ 304,337
Increase over prior period	$ 16,805	
Increase - percentage	6%	

The following table presents our revenues, by revenue source, as a percentage of total revenues:

	Year ended December 31, 2022	2021
Ting:		
Fiber Internet Services	13%	8%
Wavelo:		
Platform Services	7%	4%
Other Professional Services	1%	1%
Total Wavelo	8%	5%
Tucows Domains:		
Wholesale		
Domain Services	58%	62%
Value Added Services	6%	7%
Total Wholesale	64%	69%
Retail	11%	12%
Total Tucows Domains	75%	81%
Tucows Corporate:		
Mobile services and eliminations	4%	6%
	100%	100%

Total net revenues for Fiscal 2022 increased by $16.8 million, or 6%, to $321.1 million from $304.3 million for the Fiscal 2022. The overall increase in revenue was primarily driven by the $17.1 million increase in revenues attributable to our Ting segment. Ting experienced both growth in customers as we continued to build out our Ting Internet footprint as well as acquisition led revenue growth from our prior year acquisition of Simply Bits. This increase was furthered by Wavelo, contributing an increased $7.6 million to revenues, a result of increased MONOS platform revenues earned from the migration of additional subscribers onto our new platforms. The increases these two segments experienced were partially offset by reduced revenues from Mobile Services and eliminations and Tucows Domains of $5.4 million and $2.4 million, respectively. The decrease in Mobile Services and eliminations was attributable to decreased transitional services revenues, and the decrease from Tucows Domains segment from the continued normalization of domain registration growth and renewal rates from those observed as a result of the COVID-19 pandemic in prior years.

Deferred revenue at December 31, 2022 decreased by $2.7 million to $145.1 million from $147.8 million at December 31, 2021. This decrease was primarily driven by our Domain Services segment, accounting for $3.2 million of the decrease due to recognition of previously deferred billings for registrations and renewals growth experienced in prior years in connection with COVID-19. This decrease was partially offset by an increase in deferred revenues associated with Ting and Wavelo of $0.3 million and $0.2 million, respectively. For Ting, the increase is reflective of the continued growth in customer base and billings for that segment relative to December 31, 2021; and for Wavelo, the increase is reflective of additional other professional services revenues for standalone technology services development work with DISH which have been deferred until such time as that work is complete and we've satisfied our obligations to provide the professional services.

No customer accounted for more than 10% of revenue during Fiscal 2022 or during the year ended December 31, 2021 ("Fiscal 2021"). At both December 31, 2022 and as at December 31, 2021, DISH accounted for 46% of total accounts receivable.

Though a significant portion of the Company’s domain services revenues are prepaid by our customers, where the Company does collect receivables, significant management judgment is required at the time revenue is recorded to assess whether the collection of the resulting receivables is reasonably assured. On an ongoing basis, we assess the ability of our customers to make required payments. Based on this assessment, we expect the carrying amount of our outstanding receivables, net of allowance for doubtful accounts, to be fully collected.

Ting

Ting generated $42.4 million in revenue during Fiscal 2022, which increased by $17.1 million or 68% compared to Fiscal 2021. This growth is driven by continued subscriber growth across the markets we serve, as well as the continued expansion of our Ting Internet footprint to new Ting towns throughout the United States. Included in this $17.1 million increase of revenues is $7.6 million attributed to the prior year acquisition of Simply Bits, which closed in the fourth quarter of Fiscal 2021.

As of December 31, 2022, Ting Internet had access to 96,000 owned infrastructure serviceable addresses, 20,000 partner infrastructure serviceable addresses and 35,000 active accounts under its management; compared to having access to 76,000 owned infrastructure serviceable addresses, 15,000 partner infrastructure serviceable addresses and 26,000 active accounts under its management as of December 31, 2021. These figures exclude the increase in serviceable addresses and accounts attributable to the Simply Bits acquisition.

Wavelo

Platform Services

Wavelo's Platform services generated $22.6 million in revenue during Fiscal 2022, which increased by $9.6 million or 74% compared to Fiscal 2021. This is driven from increased MONOS platform revenues earned from the migration of additional DISH subscribers, from their Boost Mobile brand onto our new platform. The increased platform fees are partially offset by a reduction of revenues related to the amortization of the related contract asset with DISH. The Company expects the contract asset to continue to amortize against revenue through the remainder of Fiscal 2023 and thereafter as we continue to fulfill the performance obligations of the contract. Our full-service platforms support CSPs with subscription and billing management, network orchestration and provisioning, and individual developer tools. Wavelo launched as a proven asset for CSPs, with DISH using Wavelo's MONOS software to drive additional value within its Digital Operator Platform since 2021. More recently, Ting Internet has also integrated Wavelo's ISOS and SM software to enable faster subscriber growth and footprint expansion. Any intercompany ISOS or SM revenues earned from Ting Internet are eliminated upon consolidation.

Other Professional Services

Wavelo's Other Professional Services for the Fiscal 2022, decreased by $2.0 million compared to Fiscal 2021, to $1.8 million. This decrease is a result of a less professional service engagements for the provision of standalone technology services development work for DISH as they shift focus to migrating subscribers at scale onto our MONOS platform.

Tucows Domains

Wholesale - Domain Services

During Fiscal 2022, Wholesale Tucows Domains revenue decreased by $1.6 million or 1% to $187.5 million. Decreases from Wholesale domain registrations were driven by the continued normalization of domain name registration growth and slowed renewal rates from those observed at the onset of the COVID-19 pandemic, where we experienced domain name registration growth from our large volume resellers across our Tucows Domains brands as more individuals and businesses established an online presence. The majority of the decrease in revenues is from our OpenSRS brand, followed by Ascio, EPAG, and eNom respectively.

Together the OpenSRS, eNom, EPAG and Ascio Domain Services manage 24.4 million domain names under the Tucows, eNom, EPAG and Ascio ICANN registrar accreditations and for other registrars under their own accreditations. Domains under management has decreased by 0.8 million domain names since December 31, 2021. The decrease is driven by lower renewal rates from the normalization of registration growth back to pre-pandemic levels.

Wholesale - Value Added Services

Net revenues from value-added services decreased by $0.2 million to $20.7 million compared to Fiscal 2021. The decrease in value-added service revenue was primarily driven by lower expiry stream proceeds across our Domain Services brands. As a result of the normalization of renewal rates and domains under management discussed above in connection to COVID-19, Fiscal 2022 continued to benefit from a significant volume of expired domain names registered in the past year being available for our expiry streams, which returned favorable proceeds at auction and drove revenue generation for value added services, albeit at a slower rate as the value of domain names sold at auction has declined relative to the prior period.

Retail

Net revenues from retail decreased by $0.6 million to $34.9 million compared to Fiscal 2021. The decrease in revenue was primarily related to a decrease in retail domain name registrations of $1.6 million relative to Fiscal 2021. This decrease was partially offset by an increase in Portfolio sales of $0.7 million and Exact Hosting revenues of $0.3 million.

Tucows Corporate - Mobile Services and Eliminations

Net revenues from Mobile Services and eliminations for the Fiscal 2022, decreased by $5.5 million compared to Fiscal 2021, to $11.2 million. This decrease was driven by decreased transitional services revenues from DISH of $5.1 million, notably from a decreased level of customer support and marketing services provided to DISH in connection with the legacy Ting Mobile customer base. This decrease was partially offset by an increase in revenues of $0.4 million associated with the mobile telephony services and device revenues from the small group of customers retained by the Company as part of the DISH Purchase Agreement. Revenues increased as a result of the organic subscriber growth we experienced through Fiscal 2022. Additionally, corporate eliminations increased by $0.7 million as a result of the revenues associated with ISOS platform billing between Wavelo and Ting, which began in Fiscal 2022.

COST OF REVENUES

Ting

Cost of revenues primarily includes the costs for provisioning high speed Internet access for Ting and its subsidiaries - Cedar, and Simply Bits, which is comprised of network access fees paid to third-parties to use their network, leased circuit costs to directly support enterprise customers, the personnel and related expenses (net of capitalization) related to the physical planning, design, construction and build out of the physical Fiber network and as well as personnel and related expenses (net of capitalization) related to the installation, repair, maintenance and overall field service delivery of the Fiber business. Hardware costs include the cost of equipment sold to end customers, including routers, ONTs, and IPTV products, and any inventory adjustments on this inventory. Other costs include field vehicle expenses, small sundry equipment and supplies consumed in building the Fiber network.

Wavelo

Platform Services

Cost of revenues to provide the new MONOS, ISOS and SM platforms, as well as our legacy Platypus ISP Billing software services including network access, provisioning and billing services for CSPs. This includes the amortization of any capitalized contract fulfillment costs over the period consistent with the pattern of transferring network access, provisioning and billing services to which the cost relates. Additionally, this includes any fees paid to third-party service providers primarily for printing services in connection with the Platypus ISP Billing software.

Other Professional Services

Cost of revenues to provide standalone technology services development work to our CSP customers to help support their businesses. This includes any personnel and contractor fees for any client service resources retained by the Company. Only a subset of the Company's employee base provides professional services to our customers. This cost reflects that group of resources.

Tucows Domains

Wholesale - Domain Services

Cost of revenues for domain registrations represents the amortization of registry and accreditation fees on a basis consistent with the recognition of revenues from our customers, namely ratably over the term of provision of the service. Registry fees, the primary component of cost of revenues, are paid in full when the domain is registered, and are initially recorded as prepaid domain registry fees. This accounting treatment reasonably approximates a recognition pattern that corresponds with the provision of the services during the period. Market development funds that do not represent a payment for distinct goods or services provided by the Company, and thus do not meet the criteria for revenue recognition under Accounting Standard Update ("ASU") 2014-09, are reflected as cost of goods sold and are recognized as earned.

Wholesale - Value-Added Services

Costs of revenues for value-added services include licensing and royalty costs related to the provisioning of certain components of related to hosted email and fees paid to third-party hosting services. Fees payable for trust certificates are amortized on a basis consistent with the provision of service, generally one year, while email hosting fees and monthly printing fees are included in cost of revenues in the month they are incurred.

Retail

Costs of revenues for our provision and management of Internet services through our retail sites, Hover.com and the eNom branded sites, include the amortization of registry fees on a basis consistent with the recognition of revenues from our customers, namely ratably over the term of provision of the service. Registry fees, the primary component of cost of revenues, are paid in full when the domain is registered, and are recorded as prepaid domain registry fees and are expensed ratably over the renewal term. Costs of revenues for our surname portfolio represent the amortization of registry fees for domains added to our portfolio over the renewal period, which is generally one year, the value attributed under intangible assets to any domain name sold and any impairment charges that may arise from our assessment of our domain name intangible assets.

Tucows Corporate - Mobile Services and Eliminations

Cost of revenues for Retail Mobile Services includes the costs of provisioning mobile services, which is primarily our customers' voice, messaging, data usage provided by our MNO partner, and the costs of providing mobile phone hardware, which is the cost of mobile phone devices and SIM cards sold to our customers, order fulfillment related expenses, and inventory write-downs. Included in the costs of provisioning mobile services is any penalties associated with the minimum commitments with our MNO partner.

These Mobile Services costs also include the personnel and related costs of transitional services provided to DISH. These are billed monthly at set and established rates for services provided in period and include the provision of sales, marketing, customer support, order fulfillment, and data analytics related to the legacy customer base sold to DISH. The Company recognizes costs as the Company satisfies its obligations to provide professional services.

Network expenses

Network expenses include personnel and related expenses related to the core technologies, site reliability engineering and network operations, IT infrastructure and supply chain teams that support our various business segments. It also includes network depreciation and amortization, communication and productivity tool costs, and equipment maintenance costs. Communication and productivity tool costs includes collaboration, customer support, bandwidth, co-location and provisioning costs we incur to support the supply of all our services.

The following table presents our cost of revenues, by revenue source:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31, 2022	2021
Ting:		
Fiber Internet Services	$ 17,004	$ 12,035
Wavelo:		
Platform Services	1,294	504
Other Professional Services	1,632	804
Total Wavelo	2,926	1,308
Tucows Domains:		
Wholesale		
Domain Services	147,894	147,213
Value Added Services	2,514	2,544
Total Wholesale	150,408	149,757
Retail	16,482	17,731
Total Tucows Domains	166,890	167,488
Tucows Corporate:		
Mobile services and eliminations	9,448	12,208
Network Expenses:		
Network, other costs	17,433	14,769
Network, depreciation and amortization costs	29,101	18,035
Network, impairment	92	201
	46,626	33,005
	$ 242,894	$ 226,044
Increase over prior period	$ 16,850	
Increase - percentage	7%	

The following table presents our cost of revenues, as a percentage of total cost of revenues for the periods presented:

	Year ended December 31,	
	2022	2021
Ting:		
Fiber Internet Services	7%	5%
Wavelo:		
Platform Services	1%	-
Other Professional Services	1%	1%
Total Wavelo	2%	1%
Tucows Domains:		
Wholesale		
Domain Services	60%	65%
Value Added Services	1%	1%
Total Wholesale	61%	66%
Retail	7%	8%
Total Tucows Domains	68%	74%
Tucows Corporate:		
Mobile services and eliminations	4%	5%
Network Expenses:		
Network, other costs	7%	7%
Network, depreciation and amortization costs	12%	8%
Network, impairment	-	-
	19%	15%
	100%	100%

Total cost of revenues for Fiscal 2022 increased by $16.9 million to $242.9 million, from $226 million in Fiscal 2021. The increase was driven by a $13.6 million increase in Network Expenses. The increase from Network Expenses is a result of the expansion of the Company's network infrastructure associated with the continuing expansion of the Ting Internet network footprint, the ramp up of Wavelo's MONOS, ISOS and SM platforms, as well as increased communication and productivity tool costs across our operating segments. Another contributing factor was an increases from Ting and Wavelo of $5 million and $1.6 million respectively. As discussed above in the Net Revenues section, Ting has continued to add both serviceable addresses and active subscriptions relative to Fiscal 2021. Additionally, Wavelo's increased cost of revenues have been a driven by the completion of select standalone technology services development work with DISH in the current period. These increases were partially offset by a decrease of $0.6 million from Tucows Domains and a $2.7 million decrease related to Mobile Services and eliminations. The decrease in costs for Tucows Domains is aligned with the reduced net revenues discussed above in the Net Revenues section and the reduction in domains under management in the current period. The decrease related to Mobile Services and eliminations is also driven by decreased transitional services costs from the provision of less transitional services to DISH in the current period.

Deferred costs of fulfillment as of December 31, 2022 decreased by $2.0 million, or 2%, to $110.7 million from $112.7 million at December 31, 2021. This decrease was primarily driven by Wavelo, accounting for a $1.6 million decrease in the current period related to the completion of Other Professional Services discussed above for standalone technology services development work with DISH. As these professional services were completed in the current period, the deferred costs to fulfill those services were amortized into cost of revenues. This decrease was furthered by Tucows Domains which saw a decrease of $0.5 million, aligned with the movement in deferred revenues discussed above. Relative to COVID-19 pandemic levels, Fiscal 2022 was characterized by slowing growth in additions and renewals to domains under management, which has appropriately translated to less deferred costs of fulfillment for our Domain Services segment. Additionally, our Ting segment contributed to partially offset this overall decrease with an increase in deferred costs of fulfillment of less than $0.1 million relative to the past year.

Ting

In Fiscal 2022, costs related to provisioning high speed Internet access for Ting and its subsidiaries - Cedar, and Simply Bits increased $5.0 million, or 42%, to $17.0 million as compared to $12.0 million during Fiscal 2021. The increase in costs were primarily driven by increased direct costs, bandwidth and colocation costs related to the continued expansion of the Ting Fiber network. Included in this $5.0 million increase, $1.9 million related to the prior year acquisition of Simply Bits.

Wavelo

Platform Services

Cost of revenues from Wavelo Platform Services for Fiscal 2022 increased by $0.8 million to $1.3 million, when compared to Fiscal 2021. Cost incurred are driven by the amortization of previously capitalized costs incurred to fulfill the DISH Master Services Agreement ("MSA") over the term of the agreement. The continued incurrence of additional costs to fulfill the contract in Fiscal 2022 have resulted in increased amortization in the current period relative to the fixed term of the agreement.

Other Professional Services

Cost of revenues from Other Professional Services for Fiscal 2022 by $0.8 million to $1.6 million, when compared to Fiscal 2021. Costs incurred represent the personnel and related expenses of employees and contractors providing professional services to DISH. The increase in Other Professional Services costs relative to the prior period was a result of the completion of select standalone technology services development work for DISH in the current period, with limited comparable costs in the prior period.

Domain Services

Wholesale - Domain Services

Costs for wholesale domain services for Fiscal 2022 increased by $0.7 million to $147.9 million, when compared to Fiscal 2021. The increase to cost of revenues is driven by the prior period including volume rebates earned from registries for the high volume of domain name registrations through the COVID-19 pandemic as well as the Euro devaluation to the U.S. dollar, which made cost of revenues more expensive for our European brands Ascio and EPAG.

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Wholesale - Value Added Services

Costs for wholesale value-added services for Fiscal 2022 remained flat at $2.5 million, when compared to Fiscal 2021.

Retail

Costs for retail for Fiscal 2022 decreased by $1.2 million, to $16.5 million, when compared to Fiscal 2021. The was driven by the declining volume of retail domain name registrations across our retail brands.

Tucows Corporate - Mobile Services and Eliminations

Cost of revenues from Mobile Services and eliminations for Fiscal 2022 decreased by $2.8 million when compared to Fiscal 2021 The decrease is consistent with the above discussion around net revenues, this was driven by decreased transitional services costs of $4.4 million, notably from a decreased level of customer support and marketing services provided to DISH in connection with the legacy Ting Mobile customer base. This decrease was partially offset by an increase in cost of revenues of $1.6 million associated with the mobile telephony services and device costs associated with the small group of customers retained by the Company as part of the DISH Purchase Agreement. Cost of revenues increase as a result of the organic growth of the customer base we experienced through Fiscal 2022. Cost of revenues are outpacing revenue growth due to the unlimited usage rate plans introduced in late Fiscal 2020 by DISH that were expanded and offered to the small group of customers retained by the Company.

Network Expenses

Network costs for Fiscal 2022 increased by $13.6 million to $46.6 million when compared to Fiscal 2021. The comparative increase was driven by increased depreciation of $10 million from the Company's increased network associated with the continuing expansion of the Ting Internet footprint and the depreciation of Wavelo's new platforms. This increase from depreciation was followed by increased network costs of $2.7 million from increased personnel and contracted service costs on Ting and Wavelo segments, as well as an increase in amortization of intangible assets of $0.9 million driven by the prior period acquisition of Simply Bits.

SALES AND MARKETING

Sales and marketing expenses consist primarily of personnel costs. These costs include commissions and related expenses of our sales, product management, public relations, call center, support and marketing personnel. Other sales and marketing expenses include customer acquisition costs, advertising and other promotional costs.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	2021
Sales and marketing	$ 53,937	$ 39,471
Increase over prior period	$ 14,466	
Increase - percentage	37%	
Percentage of net revenues	17%	13%

Sales and marketing expenses for Fiscal 2022 increased by $14.5 million, or 37%, to $53.9 million when compared to Fiscal 2021. The increase in costs relate primarily to the investment in hiring additional personnel for Ting sales, product, marketing, customer support and success teams to drive growth in Ting markets. The current period also includes the teams acquired as part of the Simply Bits acquisition, and to a lesser extent a small ramp of hiring Wavelo sales and marketing teams. Outside of additional hiring, personnel costs were impacted by wage inflation across our three segments, with issued increases in excess of 5% to align with economic conditions and market rates. In addition to personnel related costs, both marketing related costs and facility costs increased to drive subscription growth given the increase in serviceable addresses available to Ting and to support our growing workforce in select Ting towns across the United States.

Excluding movements in exchange rates, we expect sales and marketing expenses for Fiscal 2023 to increase in absolute dollars, as we adjust our marketing programs and sales and customer support personnel costs to facilitate the continued expansion of Ting and ramp-up of Wavelo's go-to-market efforts.

TECHNICAL OPERATIONS AND DEVELOPMENT

Technical operations and development expenses consist primarily of personnel costs and related expenses required to support the development of new or enhanced service offerings and the maintenance and upgrading of existing infrastructure. This includes expenses incurred in the research, design and development of technology that we use to register domain names, network access services, email, retail, domain portfolio and other Internet services, as well as to distribute our digital content services. All technical operations and development costs are expensed as incurred.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	2021
Technical operations and development	$ 14,187	$ 14,310
Decrease over prior period	$ (123)	
Decrease - percentage	(1)%	
Percentage of net revenues	4%	5%

Technical operations and development expenses for Fiscal 2022 decreased by $0.1 million, or 1%, to $14.2 million. The decrease in costs relates primarily to an increased level of capitalization of labor primarily in support of Wavelo's new platform builds for MONOS and ISOS, and to a lesser extend in support of Ting's network design and build. Gross personnel costs grew as a result of increased hiring of both employees and external contractors to provide development resources to assist our internal engineering teams with development aspects of the MONOS and ISOS platform. Additionally, personnel costs were impacted by wage inflation across our three segments, with issued increases in excess of 5% to align with economic conditions and market rates. Outside of personnel and external contractor costs, the Company also experienced increases in bandwidth costs in the current period, driven by the acquisition of Uniregistry assets in the fourth quarter of Fiscal 2021.

Excluding movements in exchange rates, we expect technical operations and development expenses for Fiscal 2023, in absolute dollars, to increase when compared to Fiscal 2022 to support the ongoing growth in our operations.

GENERAL AND ADMINISTRATIVE

General and administrative expenses consist primarily of compensation and related costs for managerial and administrative personnel, fees for professional services, public listing expenses, rent, foreign exchange and other general corporate expenses.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	**2021**
General and administrative	$ 30,845	$ 22,370
Increase over prior period	$ 8,475	
Increase - percentage	38%	
Percentage of net revenues	10%	7%

General and administrative expenses for Fiscal 2022 increased by $8.5 million, or 38%, to $30.8 million as compared to Fiscal 2021. The increase was primarily driven by an increase in personnel costs driven by the growth of teams acquired as part of the Simply Bits acquisition and continued investment in hiring for administrative teams to better support our segments as part of our new corporate reorganization. Outside of additional hiring, personnel costs were impacted by wage inflation across our three segments, with issued increases in excess of 5% to align with economic conditions and market rates. Another driver of the increase was higher stock-based compensation expenses in order to attract, retain and scale core administrative teams to meet projected Company growth. Smaller contributors to the increase include other miscellaneous expenses such as business and property taxes, credit card fees and facility costs driven by Ting and the continuing expansion of the Ting Internet footprint.

Excluding movements in exchange rates, we expect general and administrative expenses for Fiscal 2023, in absolute dollars, to increase when compared to Fiscal 2022 largely to support the growth of our business.

DEPRECIATION OF PROPERTY AND EQUIPMENT

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	**2021**
Depreciation of property and equipment	$ 598	$ 534
Increase over prior period	$ 64	
Increase - percentage	12%	
Percentage of net revenues	0%	0%

Depreciation costs for Fiscal 2022 increased by less than $0.1 million to $0.6 million as compared to Fiscal 2021. The slight increase was due to the depreciation of additions to property and equipment, in particular computer hardware purchased in support of our expanding workforce.

LOSS (GAIN) ON DISPOSAL OF PROPERTY AND EQUIPMENT

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	**2021**
Loss on disposition of property and equipment	$ 461	$ 234
Increase over prior period	$ 227	
Increase - percentage	97	
Percentage of net revenues	0%	0%

Loss on disposal of property and equipment increased by $0.2 million to $0.5 million as compared to Fiscal 2021. The increase was a result of Fiscal 2022 including a disposal of minor internal use software related to Tucows Domains for which the Company no longer expects to realize the initial use and intended benefit that it initially did when those development costs were initially capitalized.

AMORTIZATION OF INTANGIBLE ASSETS

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	**2021**
Amortization of intangible assets	$ 9,882	$ 9,424
Increase over prior period	$ 458	
Increase - percentage	5%	
Percentage of net revenues	3%	3%

Amortization of intangible assets increased by $0.5 million, to $9.9 million as compared to Fiscal 2021. This increase in amortization was a result of the acquisition of Uniregistry assets in the fourth quarter of Fiscal 2021.

Network rights, brand and customer relationships acquired in connection with the following acquisitions are amortized on a straight-line basis over a range of two to seven years: eNom in January 2017, Ascio in March of 2019, Cedar in January 2020 and Simply Bits in November 2021.

LOSS (GAIN) ON CURRENCY FORWARD CONTRACTS

Although our functional currency is the U.S. dollar, a major portion of our fixed expenses are incurred in Canadian dollars. Our goal with regard to foreign currency exposure is, to the extent possible, to achieve operational cost certainty, manage financial exposure to certain foreign exchange fluctuations and to neutralize some of the impact of foreign currency exchange movements. Accordingly, we enter into foreign exchange contracts to mitigate the exchange rate risk on portions of our Canadian dollar exposure.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	2021
Loss (gain) on currency forward contracts	$ -	$ (277)
Increase over prior period	$ 277	
Increase - percentage	100%	
Percentage of net revenues	-%	0%

The Company recorded a net loss of nil in the change in fair value of outstanding contracts as well as realized on mature contracts during Fiscal 2022, compared to a net gain of $0.3 million during Fiscal 2021. This is driven by the Company having no unhedged contracts.

At December 31, 2022, our balance sheet reflects a derivative instrument asset of $1.9 million and a liability of $0.4 million as a result of our existing foreign exchange contracts. Until their respective maturity dates, these contracts will fluctuate in value in line with movements in the Canadian dollar relative to the U.S. dollar.

OTHER INCOME (EXPENSES)

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	2021
Other income (expense), net	$ 3,874	$ 15,043
Increase over prior period	$ (11,169)	
Increase - percentage	(74)%	
Percentage of net revenues	1%	5%

Other income decreased by $11.2 million when compared to Fiscal 2021. This was partially due to higher interest incurred of $9.9 million on our Amended Credit Agreement as well as interest on redeemable preferred shares. In addition to higher interest expense, the Company experienced a $1.5 million decrease in the income earned on sale of transferred assets to DISH in the current period. As described above, the Company receives a payout on the margin associated with the legacy customer base sold to DISH over the 10-year term of the agreement, as form of consideration for the sale of the legacy customer relationships. The Company expects the gain on the sale of the Ting Customer Assets to continue to decrease over the term of the payout as legacy customers naturally churn away from Ting Mobile. These decreases were partially offset by a small increase from other interest and sundry income of $0.2 million.

INCOME TAXES

The following table presents our provision for income taxes for the periods presented:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2022	2021
Provision for income taxes	$ (217)	$ 3,906
Decrease in provision over prior period	$ (4,123)	
Decrease - percentage	(106)%	
Effective tax rate	1%	54%

Income taxes decreased by $4.1 million and the effective tax rate decreased from 54% to 1% when compared to the year ended December 31, 2021. The decrease in effective tax rate is primarily due to the change in net income before tax for the year, and it is partially offset by an increase in valuation allowance on foreign tax credits as a result of a change in the geographical mix of income and reduced excess tax benefits related to stock-based compensation.

Our effective tax rates for the year ended December 31, 2022 differs from the U.S. federal statutory rate primarily due to changes in valuation allowance on foreign tax credits, state tax expense and the impact of foreign earnings.

A reconciliation of the federal statutory income tax rate to our effective tax rate is set forth in “Note 9 – Income Taxes” of the Notes to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report.

ADJUSTED EBITDA

We believe that the provision of this supplemental non-GAAP measure allows investors to evaluate the operational and financial performance of our core business using similar evaluation measures to those used by management. We use adjusted EBITDA to measure our performance and prepare our budgets. Since adjusted EBITDA is a non-GAAP financial performance measure, our calculation of adjusted EBITDA may not be comparable to other similarly titled measures of other companies; and should not be considered in isolation, as a substitute for, or superior to measures of financial performance prepared in accordance with GAAP. Because adjusted EBITDA is calculated before recurring cash charges, including interest expense and taxes, and is not adjusted for capital expenditures or other recurring cash requirements of the business, it should not be considered as a liquidity measure. See the Consolidated Statements of Cash Flows included in the attached financial statements. Non-GAAP financial measures do not reflect a comprehensive system of accounting and may differ from non-GAAP financial measures with the same or similar captions that are used by other companies and/or analysts and may differ from period to period. We endeavor to compensate for these limitations by providing the relevant disclosure of the items excluded in the calculation of adjusted EBITDA to net income based on GAAP, which should be considered when evaluating the Company's results. Tucows strongly encourages investors to review its financial information in its entirety and not to rely on a single financial measure.

Our adjusted EBITDA definition excludes depreciation, amortization of intangible assets, income tax provisions, interest expense (net), accretion of contingent consideration, stock-based compensation, asset impairment, gains and losses from unrealized foreign currency transactions and costs that are one-time in nature and not indicative of on-going performance (profitability), including acquisition and transition costs. Gains and losses from unrealized foreign currency transactions removes the unrealized effect of the change in the mark-to-market values on outstanding foreign currency contracts not designated in accounting hedges, as well as the unrealized effect from the translation of monetary accounts denominated in non-U.S. dollars to U.S. dollars.

The following table reconciles net income to adjusted EBITDA:

Reconciliation of Income before Provision for Income Taxes to Adjusted EBITDA (In Thousands of US Dollars)	**Twelve months ended December 31,**		
	2022	**2021**	**2020**
Net Income for the period	$ (27,571)	$ 3,364	$ 5,775
Less:			
Provision for income taxes	(217)	3,906	4,985
Depreciation of property and equipment	28,187	17,986	12,632
Impairment and loss on disposition of property and equipment	553	435	1,621
Amortization of intangible assets	11,394	10,007	11,420
Impairment of definite life intangible assets	-	-	1,431
Write-down on disposal of Ting Mobile customer assets	-	-	3,513
Interest expense, net	14,456	4,617	3,611
Accretion of contingent liability	248	383	344
Stock-based compensation	7,599	4,592	3,718
Unrealized loss (gain) on change in fair value of foreign currency forward contracts	-	606	(500)
Unrealized loss (gain) on foreign exchange revaluation of foreign denominated monetary assets and liabilities	281	219	461
Acquisition and other costs[1]	2,660	2,706	1,962
Adjusted EBITDA	$ 37,590	$ 48,821	$ 50,973

[1] Acquisition and other costs represents transaction-related expenses, transitional expenses, such as redundant post-acquisition expenses, primarily related to our acquisition of Cedar in January 2020 and Simply Bits in November 2021 and the disposition of certain Ting Mobile assets in August 2020. Expenses include severance or transitional costs associated with department, operational or overall company restructuring efforts, including geographic alignments.

Adjusted EBITDA for the year ended December 31, 2022 decreased by $11.2 million, or 23% to $37.6 million when compared to the year ended December 31, 2021. The decrease in adjusted EBITDA from period-to-period was primarily driven by decreased contribution from Wavelo due to significant investments into building out both our teams and platforms in support of future growth; as well as current period charges for amortization the contract asset related to the DISH agreement. This decrease was furthered by reduced contribution by both Ting and Tucows Domains. Ting, from the investment in the ramp of expenditures related to the Fiber Internet network build and expansion plan; and Tucows Domains from the continued normalization of domain registrations and slowed renewal rates relative to patterns experienced over the last fiscal years from the COVID-19 pandemic as well as domains under management. When comparing Adjusted EBITDA in Fiscal 2021 to Fiscal 2020, the decrease in contribution was similarly driven by the increased investment in Ting due to the ramp of expenditures related to the Fiber Internet network build and expansion plan. That decrease was partially offset by increased contribution from Wavelo, the income earned on sale of transferred assets to DISH , as well as from Tucows Domains strong performance during the COVID-19 pandemic.

OTHER COMPREHENSIVE INCOME (LOSS)

To mitigate the impact of the change in fair value of our foreign exchange contracts on our financial results, in October 2012 we begun applying hedge accounting for the majority of the contracts we need to meet our Canadian dollar requirements on a prospective basis. The impact of the fair value adjustment on outstanding hedged contracts for Fiscal 2022 was a net loss in other comprehensive income of $0.4 million compared to a net loss of $2.0 million for Fiscal 2021.

The following table presents other comprehensive income for the periods presented:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31, 2022	2021
Other comprehensive income (loss)	$ 441	$ (1,993)
Increase over prior period	$ 2,434	
Increase - percentage	(122)%	
Percentage of net revenues	0%	(1)%

The impact of the fair value adjustments on outstanding hedged contracts during Fiscal 2022 was a gain in OCI before reclassifications of $0.4 million as compared to a gain of $0.6 million during Fiscal 2021.

The net amount reclassified to earnings during Fiscal 2022 was a gain of less than $0.1 million compared to a loss of $2.6 million during Fiscal 2021.

RESULTS OF OPERATIONS FOR THE YEAR ENDED DECEMBER 31, 2021 AS COMPARED TO THE YEAR ENDED DECEMBER 31, 2020

The Company has initially applied ASU No. 2016-02, Leases (Topic 842) on January 1, 2019, which was adopted using the modified retrospective basis. Accordingly, comparative figures have not been restated.

NET REVENUES

The following table presents our net revenues, by revenue source:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31, 2021	2020
Ting		
Fiber Internet Services	$ 25,327	$ 17,151
Wavelo		
Platform Services	13,031	1,839
Other Professional Services	3,750	-
Total Wavelo	16,781	1,839
Tucows Domains:		
Wholesale		
Domain Services	189,091	186,893
Value Added Services	20,942	18,526
Total Wholesale	210,033	205,419
Retail	35,543	36,835
Total Tucows Domains	245,576	242,254
Tucows Corporate:		
Mobile services and eliminations	16,653	49,958
	$ 304,337	$ 311,202
(Decrease) increase over prior period	$ (6,865)	
(Decrease) increase - percentage	(2%)	

The following table presents our revenues, by revenue source, as a percentage of total revenues:

	Year ended December 31, 2021	2020
Ting:		
Fiber Internet Services	8%	6%
Wavelo:		
Platform Services	4%	1%
Other Professional Services	1%	-
Total Wavelo	5%	1%
Tucows Domains:		
Wholesale		
Domain Services	62%	59%
Value Added Services	7%	6%
Total Wholesale	69%	65%
Retail	12%	12%
Total Tucows Domains	81%	77%
Tucows Corporate:		
Mobile services and eliminations	6%	16%
	100%	100%

Total net revenues for Fiscal 2021 decreased by $6.9 million, or 2%, to $304.3 million from $311.2 million for Fiscal 2020. The overall decrease in revenue was primarily driven by the $33.3 million reduction of revenues attributable to Mobile Services and eliminations. This decrease in Mobile Services revenues was directly related to the DISH Purchase Agreement as well as the shutdown of Roam Mobility brands in the past year. As part of the DISH Purchase Agreement, as a form of consideration for the sale of the customer relationships, the Company receives a payout on the margin associated with the legacy customer base sold to DISH over the 10-year term of the agreement. This has been classified as Other Income and not considered revenue in the current period. This decrease was partially offset by increases from each of Wavelo, Ting, and Tucows Domains segments. Wavelo saw a $14.9 million increase as a result of the new Platform Services revenue stream and other professional services revenues created out of the DISH MSA in the past year. Fiscal 2021 had a full year of platform revenues, whereas Fiscal 2020 was a stub period due to timing of the MSA. Ting saw a $8.2 million increase related to Ting segment revenues, a result of both growth in customers as we continue to build out our Ting Internet footprint as well as acquisition led revenue growth from our fourth quarter Fiscal 2021 acquisition of Simply Bits. Additionally, smaller increases from Domain Services of $3.3 million, driven by outsized proceeds from our domain expiry revenue streams relative to Fiscal 2020.

Deferred revenue at December 31, 2021 decreased to $147.8 million from $152.2 million at December 31, 2020. This decrease was primarily driven by our Tucows Domains segment, accounting for $3.5 million of the decrease due to recognition of previously deferred billings for registrations and renewals growth experienced in Fiscal 2020 in connection with COVID-19. This decrease is followed by a decrease related to Wavelo, accounting for $2.1 million of the decrease due to the recognition of previously deferred bundled and other professional services revenues. These professional services revenues were recognized as the Company performed its obligation to provide these services to DISH. These decreases were partially offset by an increase in deferred revenue associated with Ting, and its subsidiaries of $1.1 million, which is reflective of the continued growth in customer base and billings for that segment relative to December 31, 2020 and inclusion of deferred revenues associated with the fourth quarter of Fiscal 2021 acquisition of Simply Bits.

No customer accounted for more than 10% of revenue during Fiscal 2021 or during Fiscal 2020. As of December 31, 2021 DISH accounted for 46% of total accounts receivable and as at December 31, 2020, DISH accounted for 59% of total accounts receivable.

Though a significant portion of the Company's domain services revenues are prepaid by our customers, where the Company does collect receivables, significant management judgment is required at the time revenue is recorded to assess whether the collection of the resulting receivables is reasonably assured. On an ongoing basis, we assess the ability of our customers to make required payments. Based on this assessment, we expect the carrying amount of our outstanding receivables, net of allowance for doubtful accounts, to be fully collected.

Ting

Ting, and its subsidiaries generated $25.3 million in revenue during Fiscal 2021, up $8.2 million or 48% compared to Fiscal 2020. This growth is driven by continued subscriber growth across the markets we serve, as well as the continued expansion of our Ting Internet footprint to new Ting towns throughout the United States. Of this $8.2 million increase, $1.3 million related to our fourth quarter of Fiscal 2021 acquisition of Simply Bits.

As of December 31, 2021, Ting Internet had access to 76,000 owned infrastructure serviceable addresses, 15,000 partner infrastructure serviceable addresses and 26,000 active accounts under its management; compared to having 49,000 owned infrastructure serviceable addresses, 10,000 partner infrastructure serviceable addresses and 15,000 active accounts under its management as of December 31, 2020. These figures exclude the increase in serviceable addresses and accounts attributable to the Simply Bits acquisition.

Wavelo

Platform Services

Wavelo's Platform services generated $13 million in revenue during Fiscal 2021, which increased by $11.2 million or 609% compared to Fiscal 2020. This is driven from increased MONOS platform revenues fees earned from DISH for a full year relative to the stub period of Fiscal 2020. Our full-service platforms support CSPs with subscription and billing management, network orchestration and provisioning, and individual developer tools.

Other Professional Services

Wavelo's Other Professional Services generated $3.8 million in revenue during Fiscal 2021, up from nil in Fiscal 2020. This increase is a result of significant professional service engagements for the provision of standalone technology services development work for DISH Fiscal 2021, whereas Fiscal 2020 was absent of such development work.

Tucows Domains

Wholesale - Domain Services

During Fiscal 2021, Wholesale Domain Services revenue increased by $2.2 million or 1% to $189.1 million. The increase in revenue compared to Fiscal 2020 was primarily driven by the recognition of previously deferred billings from the past year, as discussed above in the change in deferred revenue. As more businesses established an online presence during the onset of the COVID-19 pandemic in Fiscal 2020 we experienced domain name registration growth from our large volume resellers across our Domain Services brands. Fiscal 2021 was then characterized by a normalization of this COVID-19 registration growth back to levels experienced pre-pandemic as well as some erosion in renewal rates in the last half of the year. The increase in revenues from deferred revenue discussed above is offset by a small decrease in billings of $0.3 million, largely driven by our eNom brand which has seen continued decline in registrations by non-core customers relative to Fiscal 2020.

Together the OpenSRS, eNom, EPAG and Ascio Domain Services manage 25.2 million domain names under the Tucows, eNom, EPAG and Ascio ICANN registrar accreditations and for other registrars under their own accreditations. Domains under management has decreased by 0.2 million domain names since December 31, 2020. The decrease is driven by lower renewal rates from the normalization of registration growth back to pre-pandemic levels, along with the continued erosion of registrations related to non-core customers from our eNom brand.

Wholesale - Value Added Services

Net revenues from value-added services increased by $2.4 million to $20.9 million compared to Fiscal 2020. The increase in value-added service revenue over Fiscal 2020 was primarily driven by an increase in expiry stream proceeds across our Domain Services brands. As a result of the normalization of renewal rates and domains under management discussed above in connection to COVID-19, Fiscal 2021 benefited from a significant volume of expired domain names registered in the past year being available for our expiry streams, which returned favorable proceeds at auction and drove our revenue growth for value added services.

Retail

Net revenues from retail decreased by $1.3 million to $35.5 million compared to Fiscal 2020. The decrease in revenue was primarily related to domain portfolio sales, which decreased by $0.9 million as a result of the Company disposing of its entire domain portfolio, excluding surname domains used in the RealNames email service during the fourth quarter of Fiscal 2020. This decrease was compounded by a $0.5 million decrease in retail domain name registrations from the erosion of retail customers away from our eNom Central brand. These decreases were partially offset by an increase in Exact Hosting revenues of $0.1 million.

Tucows Corporate - Mobile Services and Eliminations

Net revenues from Mobile Services and eliminations for the Fiscal 2021, as compared to Fiscal 2020, decreased by $33.3 million or 67% to $16.7 million. This decrease is driven by a decline in Mobile Services revenues of $37.1 million directly related to the DISH Purchase Agreement in late Fiscal 2020 as well as the shutdown of Roam Mobility brands in the past year. As part of the DISH Purchase Agreement, as a form of consideration for the sale of the customer relationships, the Company receives a payout on the margin associated with the legacy customer base sold to DISH over the 10-year term of the agreement. This has been classified as Other Income and not considered revenue in the current period. This decrease is offset by increased transitional services revenues from DISH of $3.8 million from the inclusion of a full year of revenues compared to a stub period of services provided in Fiscal 2020.

COST OF REVENUES

The following table presents our cost of revenues, by revenue source:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31, 2021	2020
Ting:		
Fiber Internet Services	$ 12,035	$ 6,855
Wavelo:		
Platform Services	504	183
Other Professional Services	804	-
Total Wavelo	1,308	183
Tucows Domains		
Wholesale		
Domain Services	147,213	146,788
Value Added Services	2,544	3,016
Total Wholesale	149,757	149,804
Retail	17,731	17,647
Total Tucows Domains	167,488	167,451
Tucows Corporate:		
Mobile services and eliminations	12,208	25,912
Network Expenses:		
Network, other costs	14,769	10,194
Network, depreciation and amortization costs	18,035	13,484
Network, impairment	201	1,638
	33,005	25,316
	$ 226,044	$ 225,717
Increase over prior period	$ 327	
Increase - percentage	0%	

The following table presents our cost of revenues, as a percentage of total cost of revenues for the periods presented:

	Year ended December 31, 2021	2020
Ting:		
Fiber Internet Services	5%	3%
Wavelo:		
Platform Services	-	-
Other Professional Services	1%	-
Total Wavelo	1%	-
Tucows Domains:		
Wholesale		
Domain Services	65%	65%
Value Added Services	1%	1%
Total Wholesale	66%	66%
Retail	8%	8%
Total Tucows Domains	74%	74%
Tucows Corporate:		
Mobile services and eliminations	5%	11%
Network Expenses:		
Network, other costs	7%	5%
Network, depreciation and amortization costs	8%	6%
Network, impairment	-	1%
	15%	12%
	100%	100%

Total cost of revenues for Fiscal 2021 increased by $0.3 million to $226.0 million, from $225.7 million in Fiscal 2020. The increase was driven by a $7.7 million increase in Network Expenses. The increase from Network Expenses is a result of the expansion of the Company's increased network infrastructure associated with the continuing expansion of the Ting Internet network footprint, the ramp up of Wavelo's platforms, as well as increased communication and productivity tool costs across our operating segments. Another contributing factor was an increase from Ting and Wavelo of $5.2 million and $1.1 million, respectively. As discussed above in the Net Revenues section, Ting has continued to add both serviceable addresses and active subscriptions relative to Fiscal 2020. Additionally, Wavelo's increased cost of revenues have been a driven by the completion of select standalone technology services development work with DISH in the current period. These increases were partially offset by a decrease of $13.7 million from Mobile Services and eliminations. The decrease related to Mobile Services and eliminations is consistent with the discussion above in Net Revenues, and directly related to the DISH Purchase Agreement as well as the shutdown of Roam Mobility brands in Fiscal 2020. The cost of revenues from Mobile Services in Fiscal 2021 only reflect the small subset of customers retained as part of the DISH Purchase Agreement, whereas Fiscal 2020 included the majority of the year at the full legacy subscriber base.

Deferred costs of fulfillment as of December 31, 2021 increased by $1.6 million, or 1.5%, to $112.7 million from $111.1 million at December 31, 2020. This increase was primarily driven by Wavelo, accounting for a $3.4 million increase in the current period related to the continued deferral of ongoing Other Professional Services work with DISH. This increase was partially offset by a decrease from Tucows Domains of $1.8 million, aligned with the movement in deferred revenues discussed above.

Ting

In Fiscal 2021, costs related to provisioning high speed Internet access for Ting and its subsidiaries - Cedar, and Simply Bits increased $5.2 million, or 76%, to $12.0 million as compared to $6.9 million during Fiscal 2020. The increase in costs were primarily driven by increased direct costs and, bandwidth and colocation costs related to the continued expansion of the Ting Fiber network. Although directionally aligned with the experienced growth in revenue over the same period, the outpaced increase in cost of revenues for Ting is a result of the necessary upfront investment and expenditure needed to build out the network in advance of anticipated revenue growth in any particular location. Of this $5.2 million increase, $0.3 million related to our fourth quarter of Fiscal 2021 acquisition of Simply Bits.

Wavelo

Platform Services

Cost of revenues from Wavelo Platform Services for Fiscal 2021 increased by $0.3 million to $0.5 million, when compared to Fiscal 2020. Cost incurred are driven by the amortization of previously capitalized costs incurred to fulfill the DISH MSA over the term of the agreement. The ramp up of additional costs to fulfill the contract in Fiscal 2021 at the start of the agreement have resulted in increased amortization Fiscal 2021.

Other Professional Services

Cost of revenues from Other Professional Services for Fiscal 2021 increased by $0.8 million, when compared to Fiscal 2020. Costs incurred represent the personnel and related expenses of employees and contractors providing professional services to DISH. The increase in Other Professional Services costs relative to the prior period was a result of the completion of select standalone technology services development work for DISH in the current period, with limited comparable costs in the prior period.

Tucows Domains

Wholesale - Domain Services

Costs for wholesale domain services for Fiscal 2021 increased by $0.4 million to $147.2 million, when compared to Fiscal 2020. The increase is consistent with the above discussion around net revenues, where registration costs were recognized in Fiscal 2021 from previously deferred billed costs incurred from experienced domain name registration growth and domains under management in connection with the COVID-19 pandemic. The overall increase was also impacted by decreases in current year billed costs from our eNom brand, which has seen a decline in registrations and domains under management in the current year, beyond the impacts of normalization from COVID-19 impacts.

Wholesale - Value Added Services

Costs for wholesale value-added services for Fiscal 2021 decreased by $0.5 million to $2.5 million, when compared to Fiscal 2020. The decrease in cost of revenue is primarily related to decreases in Digital Certificates and other value added service costs compared to Fiscal 2020.

Retail

Costs for retail for Fiscal 2021 increased by less than $0.1 million, to $17.7 million, when compared to Fiscal 2020. The was driven by increased costs related to Exact Hosting and was partially offset by declining volume of retail domain name registrations related to the eNom retail brands.

Tucows Corporate - Mobile Services and Eliminations

Cost of revenues related to Mobile Services and eliminations for Fiscal 2021, as compared to Fiscal 2020, decreased by $13.7 million or 53% to $12.2 million. This is driven by decreased Mobile Services costs of $16.9 million, of which $16.1 million relates to Ting Mobile and $0.8 million relates to Roam Mobility. The decrease related to Mobile Services and eliminations is consistent with the discussion above in Net Revenues, and directly related to the DISH Purchase Agreement as well as the shutdown of Roam Mobility brands in Fiscal 2020. The cost of revenues from Mobile Services in Fiscal 2021 only reflect the small subset of customers retained as part of the DISH Purchase Agreement, whereas Fiscal 2020 included the majority of the year at the full legacy subscriber base. This decrease is partially offset by an increase of $3.2 million related to costs associated with Other Professional Services provided to DISH, from the inclusion of a full year of cost compared to a stub period of services provided in Fiscal 2020.

Network Expenses

Network costs for Fiscal 2021 increased by $7.7 million to $33.0 million when compared to Fiscal 2020. The comparative increase was primarily driven by both increased network costs and depreciation as a result of the expansion of the Company's increased network infrastructure associated with the continuing expansion of the Ting Fiber footprint. These increases were partially offset by a decrease in impairment of property, plant and equipment, due to Fiscal 2020 including a $1.6 million impairment charge for Ting TV, a product formerly under development for Ting Internet. Additionally, Fiscal 2021 benefited from a decrease in amortization charges from the full amortization of the Ascio Technology intangible asset acquired in 2019.

SALES AND MARKETING

Sales and marketing expenses consist primarily of personnel costs. These costs include commissions and related expenses of our sales, product management, public relations, call center, support and marketing personnel. Other sales and marketing expenses include customer acquisition costs, advertising and other promotional costs.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Sales and marketing	$ 39,471	$ 34,274
Increase over prior period	$ 5,197	
Increase - percentage	15%	
Percentage of net revenues	13%	11%

Sales and marketing expenses for Fiscal 2021 increased by $5.2 million, or 15%, to $39.5 million when compared to Fiscal 2020. The increase in costs relate primarily to increased salaries and benefits driven by an expanding workforce and wage inflation focused on our Ting teams, as well as increased marketing related costs to drive active subscription growth given the increase in serviceable addresses available to our Ting segment. In addition to this, we also experienced an increase in costs related to stock-based compensation expenses in an effort to attract and retain labor and an increase in facility costs increased directly related to the expansion of our Ting Fiber internet footprint and workforce in select Ting towns across the United States.

TECHNICAL OPERATIONS AND DEVELOPMENT

Technical operations and development expenses consist primarily of personnel costs and related expenses required to support the development of new or enhanced service offerings and the maintenance and upgrading of existing infrastructure. This includes expenses incurred in the research, design and development of technology that we use to register domain names, network access services, email, retail, domain portfolio and other Internet services, as well as to distribute our digital content services. All technical operations and development costs are expensed as incurred.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Technical operations and development	$ 14,310	$ 12,427
Increase over prior period	$ 1,883	
Increase - percentage	15%	
Percentage of net revenues	5%	4%

Technical operations and development expenses for Fiscal 2021 increased by $1.9 million, or 15%, to $14.3 million. The increase in costs relates primarily to increased spending on external contractors to provide development resources to assist our internal shared services and engineering teams with development aspects of Wavelo's platforms. In addition to increased spending on external contractors, a slight increase in salaries and benefits driven by an expanding workforce and wage inflation focused on our shared services and engineering teams contributed to the overall increase in costs for the period along with stock-based compensation expenses to attract and retain labor.

GENERAL AND ADMINISTRATIVE

General and administrative expenses consist primarily of compensation and related costs for managerial and administrative personnel, fees for professional services, public listing expenses, rent, foreign exchange and other general corporate expenses.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
General and administrative	$ 22,370	$ 20,268
Increase over prior period	$ 2,102	
Increase - percentage	10%	
Percentage of net revenues	7%	7%

General and administrative expenses for Fiscal 2021 increased by $2.1 million, or 10%, to $22.4 million as compared to Fiscal 2020. The increase was primarily driven increases in personnel and related expenses as well as stock-based compensation expenses in order to attract, retain and scale core administrative teams including Human Resources and Finance to meet projected Company growth. Additionally, we experienced an increase in professional accounting and legal fees associated with our growing Ting segment. These increases were partially offset by reduced Mobile Services credit card fees as a result of the DISH Purchase Agreement that closed in the past year, as well as a decrease in facility related costs and foreign exchange expenses.

DEPRECIATION OF PROPERTY AND EQUIPMENT

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Depreciation of property and equipment	$ 534	$ 488
Increase over prior period	$ 46	
Increase - percentage	9%	
Percentage of net revenues	0%	0%

Depreciation costs for Fiscal 2021 remained relatively flat at $0.5 million as compared to Fiscal 2020. The slight increase was due to the depreciation of additions to property and equipment, in particular computer hardware purchased in support of our expanding workforce.

LOSS (GAIN) ON DISPOSAL OF PROPERTY AND EQUIPMENT

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Loss on disposition of property and equipment	$ 234	$ (17)
Increase over prior period	$ 251	
Increase - percentage	(1,476)%	
Percentage of net revenues	0%	(0)%

Loss on disposal of property and equipment increased by $0.2 million to $0.2 million as compared to Fiscal 2020. The increase was a result of Fiscal 2021 including a disposal of minor internal use software for which the Company no longer expects to realize the initial use and intended benefit that it initially did when those development costs were initially capitalized.

AMORTIZATION OF INTANGIBLE ASSETS

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Amortization of intangible assets	$ 9,424	$ 10,080
Decrease over prior period	$ (656)	
Decrease - percentage	(7)%	
Percentage of net revenues	3%	3%

Amortization of intangible assets decreased $0.7 million for Fiscal 2021, to $9.4 million. The decrease is primarily driven by the write-off of Mobile Services related intangible assets in connection with the both the sale of the Ting Mobile customer base and the shutdown of Roam Mobility brands in Fiscal 2020.

Network rights, brand and customer relationships acquired in connection with the following acquisitions are amortized on a straight-line basis over a range of two to seven years: eNom in January 2017, Ascio in March of 2019, Cedar in January 2020 and Simply Bits in November 2021.

IMPAIRMENT OF DEFINITE LIFE INTANGIBLE ASSETS

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Impairment of indefinite life intangible assets	$ -	$ 1,431
Decrease over prior period	$ (1,431)	
Decrease - percentage	(100)%	
Percentage of net revenues	-%	0%

Impairment of definite life intangible assets for Fiscal 2021 was nil compared to $1.4 million in Fiscal 2020. The decrease is driven by the write-off of Roam Mobility brands customer relationships that were written off in Fiscal 2020 when the Company decided to shut down the related businesses as a result of lack of demand for SIM-enabled roaming services due to the COVID-19 pandemic.

LOSS (GAIN) ON CURRENCY FORWARD CONTRACTS

Although our functional currency is the U.S. dollar, a major portion of our fixed expenses are incurred in Canadian dollars. Our goal with regard to foreign currency exposure is, to the extent possible, to achieve operational cost certainty, manage financial exposure to certain foreign exchange fluctuations and to neutralize some of the impact of foreign currency exchange movements. Accordingly, we enter into foreign exchange contracts to mitigate the exchange rate risk on portions of our Canadian dollar exposure.

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Loss (gain) on currency forward contracts	$ (277)	$ (383)
Increase over prior period	$ 106	
Increase - percentage	28%	
Percentage of net revenues	0%	0%

We have entered into certain forward exchange contracts that do not comply with the requirements of hedge accounting to meet a portion of our future Canadian dollar requirements through December 2021. During Fiscal 2021, the Company recorded a net gain of $0.3 million on the change in fair value of outstanding contract as well as realized matured contracts. In Fiscal 2020 the Company recorded a net gain of $0.4 million in the change in fair value of outstanding contract as well as realized matured contracts.

At December 31, 2021, our balance sheet reflects a derivative instrument asset of $0.6 million and a derivative instrument liability of $0.1 million as a result of our existing foreign exchange contracts. Until their respective maturity dates, these contracts will fluctuate in value in line with movements in the Canadian dollar relative to the U.S. dollar.

OTHER INCOME AND (EXPENSES)

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Other income (expense), net	$ 15,043	$ 3,843
Increase over prior period	$ 11,200	
Increase - percentage	291%	
Percentage of net revenues	5%	1%

Other income increased by $11.2 million when compared to Fiscal 2020. This was driven by a $12.4 million increase due to the income earned on sale of transferred assets to DISH to DISH. As described above, the Company receives a payout on the margin associated with the legacy customer base sold to DISH over the 10-year term of the agreement, as form of consideration for the sale of the legacy customer relationships. Comparatively, the gain in Fiscal 2020 represented the net effect of proceeds earned from DISH in regards to the legacy customer base of $11.1 million offset by the write off of certain Mobile intangible and contract assets totaling $3.5 million. This overall increase in other income was partially offset by higher interest expense from higher variable interest rates incurred on our Amended 2019 Credit Facility. Other expense consists primarily of the interest we incur in connection with our Amended 2019 Credit Facility. The interest incurred primarily relates to our loan balances obtained to fund the acquisition of eNom, Ascio, Cedar and Simply Bits and funding for expenditures associated with the Company's Fiber to the Home build program.

INCOME TAXES

The following table presents our provision for income taxes for the periods presented:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Provision for income taxes	$ 3,906	$ 4,985
Decrease in provision over prior period	$ (1,079)	
Decrease - percentage	(22)%	
Effective tax rate	54%	46%

Income taxes decreased by $1.1 million and the effective tax rate increased from 46% to 54% when compared to Fiscal 2020. The increase in effective tax rate is primarily due to changes in blended tax rates and is partially offset by an increase in stock option benefit deduction. Our Fiscal 2021 income tax expense includes a tax recovery of $1.6 million related to the adoption of ASU 2016-09, which requires all excess tax benefits and tax deficiencies related to employee share-based payments to be recognized through income tax expense on a prospective basis. The Fiscal 2021 tax recovery related to excess tax benefits related to employee share-based compensation was $0.4 million.

In Fiscal 2021, the Company did not utilize the bonus depreciation with respect to its continued investment in the Ting business. Despite this, due to the reduction in tax rate to 21%, it is unlikely we will ultimately be able to fully claim the Fiscal 2021 foreign taxes paid in future years as a foreign tax credit. As such, we have taken a valuation allowance on foreign tax credits not utilized for 2021 income tax purposes, the net negative effect of which is a $2.3 million addition to income tax expense, as compared to $2.9 million additional tax expense in Fiscal 2020.

A reconciliation of the federal statutory income tax rate to our effective tax rate is set forth in "Note 9 – Income Taxes" of the Notes to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report.

OTHER COMPREHENSIVE INCOME (LOSS)

To mitigate the impact of the change in fair value of our foreign exchange contracts on our financial results, in October 2012 we begun applying hedge accounting for the majority of the contracts we need to meet our Canadian dollar requirements on a prospective basis. The impact of the fair value adjustment on outstanding hedged contracts for Fiscal 2021 was a net loss in other comprehensive income of $2.0 million compared to a net gain of $1.9 million for Fiscal 2020.

The following table presents other comprehensive income for the periods presented:

(Dollar amounts in thousands of U.S. dollars)	Year ended December 31,	
	2021	2020
Other comprehensive income (loss)	$ (1,993)	$ 1,863
Decrease over prior period	$ (3,856)	
Decrease - percentage	(207)%	
Percentage of net revenues	1%	1%

The impact of the fair value adjustments on outstanding hedged contracts during 2021 was a gain in OCI of $0.6 million as compared to a gain of $1.7 million during 2020.

The net amount reclassified to earnings during 2022 was a loss of $2.6 million compared to a gain of $0.2 million during 2021.

LIQUIDITY AND CAPITAL RESOURCES

As of December 31, 2022, our cash and cash equivalents balance increased $14.4 million when compared to December 31, 2021. Our principal uses of cash were $137.5 million for the continued investment in property, equipment and intangible assets driven by the Ting Internet expansion, $3.1 million for contingency consideration related to the acquisition of Cedar and Simply Bits, $1.0 million related to deferred preferred share financing costs for Ting, and $0.7 million related to the payment of loan payable costs. These uses of cash were partially offset by $87.5 million proceeds from redeemable preferred shares, $48.3 million proceeds received from the drawdown of the Amended Credit Agreement, $19.9 million from cash provided from operating activities, and $1.1 million from proceeds received on the exercise of stock options.

Amended 2019 Credit Facility

On June 14, 2019, the Company and its wholly-owned subsidiaries, Tucows.com Co., Ting Fiber, Inc., Ting Inc., Tucows (Delaware) Inc. and Tucows (Emerald), LLC entered into an Amended and Restated Senior Secured Credit Agreement (the "Amended 2019 Credit Facility") with Royal Bank ("RBC"), as administrative agent, and lenders party thereto (collectively with RBC) under which the Company had access to an aggregate of up to $240 million in funds, which consisted of $180 million guaranteed credit facility and a $60 million accordion facility. The Amended 2019 Credit Facility replaced a secured Credit Agreement dated January 20, 2017 with Bank of Montreal, RBC and Bank of Nova Scotia.

The obligations of the Company under the Amended 2019 Credit Agreement are secured by a first priority lien on substantially all of the personal property and assets of the Company and has a four-year term, maturing on June 13, 2024.

Second Amended 2019 Credit Facility

On October 26, 2021, the Company entered into a Second Amended and Restated Senior Secured Credit Agreement (the "Second Amended 2019 Credit Agreement") with the Lenders and Toronto-Dominion Bank (collectively the "New Lenders") to, among other things, increase the existing revolving credit facility from $180 million to $240 million. The Second Amended 2019 Credit Agreement provided the Company with access to an aggregate of $240 million in committed funds. Under the Second Amended 2019 Credit Agreement, the Company agreed to comply with the following financial covenants at all times, which were to be calculated on a rolling four quarter basis: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 until March 31, 2023 and 4.00:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. The Second Amended 2019 Credit Agreement also provided for two additional interest rate tiers if the Company exceeded a 3.50x Total Funded Debt to Adjusted EBITDA Ratio.

Third Amended and Restated Senior Secured Credit Agreement

On August 8, 2022, the Company entered into the Third Amended and Restated Senior Secured Credit Agreement (the "Amended Credit Agreement") with the Lenders. The Amended Credit Agreement continues to provide the Company with access to the Second Amended 2019 Credit Agreement. Under the Amended Credit Agreement, and in connection with the Unit Purchase Agreement the Lenders agreed that Ting Fiber, Inc. (converted to Ting LLC) and its wholly owned subsidiaries ceased to be Guarantors under the Credit Facility and were released from their respective guarantee and security documents, including a release of the Lenders' security interests and liens upon the assets of such entities. Additionally, the Amended Credit Agreement extended the maturity of the Credit Facility to June 14, 2024. The Company is subject to the following financial covenants at all times, which are to be calculated on a rolling four quarter basis: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.00:1.00 until September 29, 2023 and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. The financial covenant calculations will exclude the financial results of Ting Fiber Inc. (converted to Ting LLC) and its wholly owned subsidiaries. The Amended Credit Agreement added SOFR loans as a form of advance available under the Credit Facility to replace LIBOR rate advances, and such SOFR loans may bear interest based on Adjusted Daily Simple SOFR (defined to be the applicable SOFR rate published by the Federal Reserve Bank of New York plus 0.10% per annum subject to a floor of zero) or Adjusted Term SOFR (defined to be the applicable SOFR rate published by CME Group Benchmark Administration Limited plus 0.10% for one-month, 0.15% for three-months, and 0.25% for six-months per annum).

On March 14, 2023, the Company entered into an Amending Agreement No.2 to the Third Amended and Restated Senior Secured Credit Agreement (the "Credit Agreement Amendment"). The Amended Credit Agreement continues to provide the Company with access to an aggregate of $240 million in committed funds, however there is a suspension to the $60 million accordion during the Leverage Step Up Period (the "Leverage Step Up Period"). Additionally, the Credit Agreement Amendment has extended the maturity of the Credit Facility to September 30, 2024. As a result of the execution of the Credit Agreement Amendment, the Company is subject to the following financial covenants at all times, with monthly testing during the Leverage Step Up Period and reverting to quarterly tests thereafter: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 from March 14, 2023 up to and including September 29, 2023; 4.00:1.00 from September 30, 2023 up to and including December 30, 2023; and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. On March 14, 2023 the Company made a repayment of $2.8 million on the Credit Facility.

As of December 31, 2022, the Company held contracts in the amount of $49.7 million with BMO to trade U.S. dollars in exchange for Canadian dollars under an uncommitted treasury risk management facility which assists the Company with hedging Canadian dollar exposures. Please see the discussion in the Material Cash Requirements section below.

Cash Flow from Operating Activities

Year ended December 31, 2022

Net cash inflows from operating activities were $19.9 million, a decrease of 33% when compared to the prior year. Net income, after adjusting for non-cash charges, during Fiscal 2022 was $14.8 million, a decrease of 53% when compared to the prior year. Net income included non-cash charges and recoveries of $42.4 million such as depreciation, amortization, stock-based compensation, loss (gain) on change in fair value of currency forward contracts, net right of use operating asset or liability, accretion of contingent consideration, amortization of debt discount and issuance costs, impairment of property and equipment, loss on disposal of domain names, net amortization of contract costs, excess tax benefits on stock-based compensation, accretion of redeemable preferred shares, and deferred income taxes (recovery). In addition, change in our working capital contributed net cash of $5.0 million. Utilized cash of $18.5 million from the changes in the contract asset from DISH, inventory, accounts receivable, deferred revenue, customer deposits and accreditation fees payable were offset by positive contributions of $23.5 million from movements in accrued liabilities, accounts payable, prepaid expenses and deposits, income taxes recoverable, and deferred costs of fulfillment.

Year ended December 31, 2021

Net cash inflows from operating activities were $29.6 million, a decrease of 18% when compared to the prior year. Net income, after adjusting for non-cash charges, during Fiscal 2021 was $31.6 million, a decrease of 12% when compared to the prior year. Net income included non-cash charges and recoveries of $28.3 million such as depreciation, amortization, impairment of indefinite life intangible asset, loss on write-off of property and equipment, write-down on disposal of Ting Mobile customer assets and contract costs, excess tax benefits on stock-based compensation, stock-based compensation, the provision for unrealized losses on currency forward contracts and a recovery for deferred tax. This generation of cash from net income was reduced by a working capital change of $2.0 million. We generated $11.1 million from movements in accounts receivable, accounts payable, accrued liabilities, and customer deposits. These positive contributions were offset by cash use of $13.1 million from deferred revenue, prepaid expenses and deposits, deferred costs of fulfillment, income taxes recoverable, contract asset, inventory, and accreditation fees payable.

Year ended December 31, 2020

Net cash inflows from operating activities were $36.1 million, a decrease of 11% when compared to the prior year. Net income, after adjusting for non-cash charges, during Fiscal 2020 was $36.0 million, a decrease of 6% when compared to the prior year. Net income included non-cash charges and recoveries of $30.2 million such as depreciation, amortization, impairment of indefinite life intangible asset, loss on write-off of property and equipment, write-down on disposal of Ting Mobile customer assets and contract costs, excess tax benefits on stock-based compensation, stock-based compensation, the provision for unrealized losses on currency forward contracts and a recovery for deferred tax. This generation of cash from net income was further increased by a working capital change of $0.1 million. We generated $6.7 million from movements in inventory, income taxes recoverable, accrued liabilities, customer deposits and deferred revenue. These positive contributions were offset by cash use of $6.6 million to invest in accounts receivable, prepaid expenses and deposits, deferred costs of fulfillment, accounts payable, and accreditation fees.

Cash Flow from Financing Activities

Year ended December 31, 2022

Net cash inflows from financing activities during Fiscal 2022 totaled $132.0 million as compared to cash inflows of $73.1 million during Fiscal 2021. Total cash inflows were driven by $87.5 million of proceeds from redeemable preferred shares issued to Generate, $48.3 million of proceeds received from drawdown of the Amended Credit Facility, as well as $1.1 million from proceeds received on the exercise of stock options. These cash inflows were partially offset by $3.1 million for contingency consideration related to the acquisition of Cedar and Simply Bits, $1.0 million related to deferred preferred share financing costs for Ting, and $0.7 million related to the payment of loan payable costs.

Year ended December 31, 2021

Net cash inflows from financing activities during Fiscal 2021 totaled $73.1 million as compared to cash inflows of $5.1 million during Fiscal 2020. Net cash inflows of $69 million resulting from draws on the Second Amended 2019 Credit Facility and $4.8 million from proceeds received on the exercise of stock options. These cash inflows were partially offset by $0.4 million outflow from the net impact of exercise of stock options and $0.3 million of loan costs.

Year ended December 31, 2020

Net cash inflows from financing activities during Fiscal 2020 totaled $5.1 million as compared to cash inflows of $43.5 million during Fiscal 2019. Net cash inflows of $8.0 million resulting from draws on the Second Amended 2019 Credit Facility and $1.0 million from proceeds received on the exercise of stock options. These cash inflows were partially offset by $3.3 million outflow for stock repurchases, $0.6 million outflow from the net impact of exercise of stock options and $0.1 million of loan costs.

Cash Flow from Investing Activities

Year ended December 31, 2022

Investing activities during the Fiscal 2022 used net cash of $137.5 million as compared to using $102.0 million during Fiscal 2021. Cash outflows of $136.7 million related to the investment in property, equipment and intangible assets, primarily to support the continued expansion of our Ting Internet Fiber network footprints in California, Colorado, Idaho, North Carolina, and Virginia as we seek to extend both our current network and expand to new markets. We expect our capital expenditures to continue to increase during Fiscal 2023. In addition to investment in property, equipment and intangible assets, the current period used $0.8 million for the acquisition of other intangible assets.

Year ended December 31, 2021

Investing activities during the Fiscal 2021 used net cash of $102.0 million as compared to using $53.3 million during Fiscal 2020. Cash outflows of $73.9 million related to the investment in property, equipment and intangible assets, primarily to support the continued expansion of our fiber footprint. The Company continues to invest in our existing Ting Towns of Centennial, Colorado, Charlottesville, Virginia, Fuquay-Varina, North Carolina, Wake Forest, North Carolina, Holly Springs, North Carolina, Sandpoint, Idaho, Rolesville, North Carolina and Culver City, California as we seek to extend both our current network and expand to new markets. We expect our capital expenditures on building and expanding our fiber network to continue to increase during Fiscal 2022. In addition to investment in property, equipment and intangible assets, the current period used $24 million in connection with the acquisition of Simply Bits, used $2.5 million in connection with the acquisition of Uniregistry and used $2.0 million for an investment in an unrelated entity. These cash outflows were partially offset by $0.5 million from proceeds on disposal of property and equipment.

Year ended December 31, 2020

Investing activities during the Fiscal 2020 used net cash of $53.3 million as compared to using $76.1 million during Fiscal 2019. Cash outflows of $44.5 million related to the investment in property, equipment and intangible assets, primarily to support the continued expansion of our fiber footprint. In addition, the Company used $8.8 million in connection with the acquisition of Cedar. The Company continues to invest in our existing Ting Towns of Centennial, Colorado, Charlottesville, Virginia, Fuquay-Varina, North Carolina, Wake Forest, North Carolina, Holly Springs, North Carolina, and Sandpoint, Idaho as well ramping construction in Roaring Fork, Colorado, Rolesville, North Carolina, and Culver City, California, as we seek to extend both our current network and expand to new towns. We expect our capital expenditures on building and expanding our fiber network to continue to increase significantly during Fiscal 2021.

We may need additional funds or seek other financing arrangements to facilitate more rapid expansion, develop new or enhance existing products or services, respond to competitive pressures or acquire or invest in complementary businesses, technologies, services or products. We may also evaluate potential acquisitions of other businesses, products and technologies. We currently have no commitments or agreements regarding the acquisition of other businesses. If additional financing is required, we may need additional equity or debt financing and any additional financing may be dilutive to existing investors. We may not be able to raise funds on acceptable terms, or at all.

Off Balance Sheet Arrangements

We did not have any off-balance sheet arrangements as of December 31, 2022.

Material Cash Requirements

As of December 31, 2022, we had cash and cash equivalents of $23.5 million of which $18.0 million belongs to Ting and $5.5 million belongs to Excluding-Ting.

Ting

Prior to the Company entering into the Unit Purchase Agreement, the LLC Agreement and the Amended Credit Agreement on August 8, 2022, Ting's operating losses, acquisitions and capital investments were funded by the operating cash flows from Excluding-Ting and the Second Amended 2019 Credit Agreement. Since August 8, 2022, Ting's operating losses and investments in the Ting Internet footprint have been soley funded by the Unit Purchase Agreement. The Unit Purchase Agreement will provide Ting with total capital commitments of $200 million in the form of Series A Preferred Units. As of December 31, 2022, the balance owing on the Unit Purchase Agreement was $91.4 million, with remaining capital commitments of $112.5 million. See Note 13. Redeemable preferred shares to the Consolidated Financial Statements for information regarding the terms of the Unit Purchase Agreement. As a result of the Amended Credit Agreement, Ting, LLC and its wholly owned subsidiaries were released from the Second Amended 2019 Credit Agreement, and Ting no longer has access to additional funding from the Amended Credit Agreement. As a result of certain restrictions placed on Ting in the LLC Agreement, we do not expect that Ting will be able to access funding from Excluding-Ting during the next 12 months.

In the next 12 months, Ting has capital purchase commitments of $35.1 million, lease commitments of $4.3 million and other operating expense commitments of $1.3 million. Ting has no debt repayment or interest commitments due in the next 12 months. We believe that Ting's current cash and cash equivalents as well as the remaining capital commitments from the Unit Purchase Agreement will be sufficient to fund Ting's commitments over the next 12 months.

Total Ting network capital expenditures for Fiscal 2023 are expected to be approximately $120 million. Other than the $35.1 million purchase obligations, the Company's remaining planned capital expenditures are discretionary in nature. In order to fund the discretionary portion of capital expenditures, the Company is seeking additional alternative sources of debt and equity financing.

In the long-term, Ting intends to continue the rapid expansion of its Internet footprint through construction activities, joint ventures and acquisitions. Future expansion of the Ting Internet footprint will continue to require further debt and equity financing. Our future expansion of the Ting Internet footprint and access to additional financing will depend on a range of factors, including economic, competitive and business factors as well as changes in government monetary or fiscal policy. Redemptions under the Unit Purchase Agreement are expected to be funded by growth in future cash flows, equity financing as well as alternative debt financing.

Excluding-Ting

Excluding-Ting's acquisitions and capital investments have been funded by the Company's operating income and the Company's existing Amended Credit Agreement. As of December 31, 2022, the Company’s Amended Credit Facility had an outstanding balance of $239.7 million. There are no scheduled principal repayments within 12 months. As of December 31, 2022, the Company has entered into floating-to-fixed interest rate swap instruments with a notional value of $70 million. Future interest payments associated with the Amended Credit Agreement are estimated to total $20.5 million, with $11.7 million payable within 12 months using current interest rates, net of our interest rate swaps, assuming no repayments. See Note 8 to the Consolidated Financial Statements for information regarding the terms of the Amended Credit Agreement.

In the next 12 months, Excluding-Ting has lease commitments of $0.9 million and other operating expense commitments of $12.6 million. Excluding-Ting has no capital expenditure commitments. We believe that Excluding-Ting's current cash and cash equivalents as well as operating cash flow will be sufficient to fund Excluding-Ting's commitments over the next 12 months. For Fiscal 2023, the Company plans to fund Excluding-Ting's cash requirements solely through operating income, while making discretionary loan repayments to create greater operating flexibility and access to additional financing.

In the long-term, Excluding-Ting may seek additional financing to accelerate the growth of our Wavelo business, repurchase shares or future acquisitions. The Company's credit facility expires on September 30, 2024 and the Company will be required to refinance the Amended Credit Agreement once it becomes due.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We develop products in Canada and sell these services in North America and Europe. Our sales are primarily made in U.S. dollars, while a major portion of expenses are incurred in Canadian dollars. Our financial results could be affected by factors such as changes in foreign currency exchange rates or weak economic conditions in foreign markets. Our interest income is sensitive to changes in the general level of Canadian and U.S. interest rates, particularly since the majority of our investments are in short-term instruments. Based on the nature of our short-term investments, we have concluded that there is no material interest rate risk exposure as of December 31, 2022. We are also subject to market risk exposure related to changes in interest rates under our Third Amended 2019 Credit Facility. We do not expect that any changes in interest rates will be material; however, fluctuations in interest rates are beyond our control. We will continue to monitor and assess the risks associated with interest expense exposure and may take additional actions in the future to mitigate these risks.

Although our functional currency is the U.S. dollar, a substantial portion of our fixed expenses are incurred in Canadian dollars. Our policy with respect to foreign currency exposure is to manage financial exposure to certain foreign exchange fluctuations with the objective of neutralizing some of the impact of foreign currency exchange movements. Exchange rates are, however, subject to significant and rapid fluctuations, and therefore we cannot predict the prospective impact of exchange rate fluctuations on our business, results of operations and financial condition. Accordingly, we have entered into foreign exchange forward contracts to mitigate the exchange rate risk on portions of our Canadian dollar exposure.

As of December 31, 2022, we had the following outstanding foreign exchange forward contracts to trade U.S. dollars in exchange for Canada dollars:

Maturity date (Dollar amounts in thousands of U.S. dollars)	Notional amount of U.S. dollars	Weighted average exchange rate of U.S. dollars	Fair value
January - March 2023	15,132	1.3283	(270)
April - June 2023	13,074	1.3385	(119)
July - September 2023	11,332	1.3633	113
October - December 2023	10,150	1.3744	192
	$ 49,688	1.3484	$ (84)

As of December 31, 2022, the Company had $49.7 million of outstanding foreign exchange forward contracts which will convert to CDN $67.0 million. Of these contracts, $49.7 million met the requirements for hedge accounting.

As of December 31, 2021, the Company had $25.2 million of outstanding foreign exchange forward contracts which will convert to CDN $32.0 million. Of these contracts, $25.2 million met the requirements for hedge accounting.

We have performed a sensitivity analysis model for foreign exchange exposure over the year ended December 31, 2022. The analysis used a modeling technique that compares the U.S. dollar equivalent of all expenses incurred in Canadian dollars, at the actual exchange rate, to a hypothetical 10% adverse movement in the foreign currency exchange rates against the U.S. dollar, with all other variables held constant. Foreign currency exchange rates used were based on the market rates in effect during the year ended December 31, 2022. The sensitivity analysis indicated that a hypothetical 10% adverse movement in foreign currency exchange rates would result in a decrease in pre-tax net income for the year ended December 31, 2022 of approximately $5.9 million. There can be no assurances that the above projected exchange rate decrease will materialize. Fluctuations of exchange rates are beyond our control. We will continue to monitor and assess the risk associated with these exposures and may take additional actions in the future to hedge or mitigate these risks.

Credit Risk

Financial instruments that potentially subject us to concentrations of credit risk consist principally of cash equivalents, marketable securities, foreign exchange contracts and accounts receivable. Our cash, cash equivalents and short-term investments are in high-quality securities placed with major banks and financial institutions whom we have evaluated as highly creditworthy, and commercial paper. Similarly, we enter into our foreign exchange contracts with major banks and financial institutions. With respect to accounts receivable, we perform ongoing evaluations of our customers, generally granting uncollateralized credit terms to our customers, and maintaining an allowance for doubtful accounts based on historical experience and our expectation of future losses.

Interest rate risk

Our exposure to interest rate fluctuations relate primarily to our Amended Credit Agreement.

As of December 31, 2022, we had an outstanding balance of $239.7 million on the Amended Credit Agreement. The Amended Credit Agreement added SOFR Loans as a form of advance available under the Credit Facility to replace LIBOR rate advances, and such SOFR loans may bear interest based on Adjusted Daily Simple SOFR (defined to be the applicable SOFR rate published by the Federal Reserve Bank of New York plus 0.10% per annum subject to a floor of zero) or Adjusted Term SOFR (defined to be the applicable SOFR rate published by CME Group Benchmark Administration Limited plus 0.10% for one-month, 0.15% for three-months, and 0.25% for six-months per annum). In May 2020, the Company entered into a pay-fixed, receive-variable interest rate swap with a Canadian chartered bank to limit the potential interest rate fluctuations incurred on its future cash flows related to the variable interest payments on the Credit facility. The notional value of the interest rate swap was $70 million as of December 31, 2022, consistent with December 31, 2021. The Company does not use the interest rate swap for trading or speculative purposes. The interest rate swap contract matures in June 2023. As of December 31, 2022, an adverse change of one percent on the interest rate would have the effect of increasing our annual interest payment on the Amended Credit Agreement by approximately $1.7 million, assuming that the loan balance as of December 31, 2022 is outstanding for the entire period.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our consolidated financial statements and supplementary data required by this item are attached to this Annual Report on Form 10-K beginning on page F-1.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) of the Exchange Act, management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated, as of the end of the period covered by this report, the effectiveness of our disclosure controls and procedures as defined in Exchange Act Rule 13a-15(e). Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that due to the material weakness in our internal control over financial reporting that is described below in Management's Annual Report on Internal Control over Financial Reporting, our disclosure controls and procedures were not effective as of December 31, 2022.

Management’s Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America and includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America
- Provide reasonable assurance that our receipts and expenditures are being made only in accordance with authorization of our management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, such as resource constraints, human error, lack of knowledge or awareness and the possibility of intentional circumvention of these controls, internal control over financial reporting may not prevent or detect misstatements. Furthermore, the design of any control system is based, in part, upon assumptions about the likelihood of future events, for which assumptions may ultimately prove to be incorrect. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Management, including our Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2022. In making this assessment, our management used the criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on the results of our evaluation, management has determined that due to the material weakness described below, our internal control over financial reporting was not effective as of December 31, 2022.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis. In connection with our assessment of the effectiveness of internal control over financial reporting we determined that the design and operating effectiveness of our controls pertaining to capitalizing certain costs were inadequate to ensure that i) a technical accounting assessment was completed related to secondary accounting implications of the Redeemable Preferred Share transaction in the third quarter of 2022 as it related to capitalization of interest on Ting assets under construction and ii) the accuracy of labor cost inputs used to determine the capitalization costs of internal efforts for the build and installation of Ting fiber network. Notwithstanding that we did not identify any material misstatements to the consolidated financial statements and there were no changes to the previously released results as a result of this material weakness, the control deficiencies created a reasonable possibility that a material misstatement to the consolidated financial statements would not be prevented or detected on a timely basis.

KPMG LLP ("KPMG"), our independent registered public accounting firm, has issued an attestation report on the Company's internal control over financial reporting, which report expresses an adverse opinion on the effectiveness of internal control over financial reporting as of December 31, 2022. These reports are set forth at the beginning of Part II, Item 8 of this Annual Report on Form 10-K.

Remediation Plan for the Material Weakness in Internal Control Over Financial Reporting

In light of the material weakness identified above, the Company performed additional analysis and other post-closing procedures to ensure that the Company's consolidated financial statements were prepared in accordance with GAAP and accurately reflect its financial position and results of its operations as of and for the year ended December 31, 2022. There were no current or prior period financial statement adjustments as a result of the material weaknesses noted nor from the additional procedures performed. As a result, notwithstanding the material weakness as described above, management concluded that the consolidated financial statements included in this Form 10-K present fairly, in all material respects, the Company's financial position, results of operations and cash flows for the periods presented.

In addition, subsequent to our December 31, 2022 fiscal year end, we began taking steps to redesign processes and controls to ensure a more precise review of certain costs to identify those that should be capitalized. We are also evaluating our financial team organizational structure, and what changes to roles and responsibilities we can make to enhance controls and compliance, including investing in additional technical accounting support. We expect to continue our remediation efforts, including testing of operating effectiveness of new or improved controls for a reasonable period of time. If appropriate, we expect to make further changes to our internal controls to enhance or further develop the remediation plan we have already adopted.

Changes in Internal Control over Financial Reporting

Other than the material weakness noted above, there were no changes made in our internal controls over financial reporting occurred during Fiscal 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

On March 14, 2023 the Company entered into an Amending Agreement No. 2 (the "Credit Agreement Amendment") to the Third Amended and Restated Senior Secured Credit Agreement the ("Amended Credit Agreement") with its existing syndicate of lenders. The Amended Credit Agreement continues to provide the Company with access to an aggregate of $240 million in committed funds, however there is a suspension to the $60 million accordion during the relief period (the "Leverage Step Up Period") which is defined as from Closing (March 14, 2023) to the date that the Company delivers a compliance certificate for the period ending on December 31, 2023 demonstrating compliance with financial covenants. Additionally, the Credit Agreement Amendment has extended the maturity of the Credit Facility to September 30, 2024. As a result of the closing of the Credit Agreement Amendment, the Company is subject to the following financial covenants at all times, with monthly testing during the Leverage Step Up Period and reverting to quarterly tests thereafter: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 from March 14, 2023 up to and including September 29, 2023; 4.00:1.00 from September 30, 2023 up to and including December 30, 2023; and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. The Company's credit facility expires on September 30, 2024 and the Company will be required to refinance the Amended Credit Agreement once it becomes due. On March 14, 2023 the Company made a repayment of $2.8 million on the Credit Facility.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Robin Chase Chair of the Board since September 2021 and Director since October 2014

Robin Chase, 64, is a transportation entrepreneur. She is co-founder and former CEO of Zipcar, founded in 2000, the world's leading car sharing network; as well as co-founder of Veniam, founded in 2012, a network company that moves terabytes of data between vehicles and the cloud. In 2019, she co-founded her first nonprofit, NUMO, a global alliance to channel the opportunities presented by new urban mobility technologies to build cities that are sustainable and just. Her book is *Peers Inc: How People and Platforms are Inventing the Collaborative Economy and Reinventing Capitalism*.

In addition to Ms. Chase's position as Chair of the Tucows Board, she sits on the boards of World Resources Institute, and serves on the Dutch multinational DSM's Sustainability Advisory Board. In the past, she served on the boards of Veniam and the Massachusetts Department of Transportation, the French National Digital Agency, the National Advisory Council for Innovation & Entrepreneurship for the US Department of Commerce, the Intelligent Transportations Systems Program Advisory Committee for the US Department of Transportation, the OECD's International Transport Forum Advisory Board, the Massachusetts Governor's Transportation Transition Working Group, and Boston Mayor's Wireless Task Force.

Ms. Chase lectures widely, has been frequently featured in the major media, and has received many awards in the areas of innovation, design, and environment, including the prestigious Urban Land Institute's Nicols Prize as Urban Visionary, Time 100 Most Influential People, Fast Company Fast 50 Innovators, and BusinessWeek Top 10 Designers. Robin graduated from Wellesley College and MIT's Sloan School of Management, was a Harvard University Loeb Fellow, and received an honorary Doctorate of Design from the Illinois Institute of Technology.

Ms. Chase's experience operating companies at the chief executive officer level along with her numerous experiences on these boards and councils qualify her to be a director of Tucows.

Allen Karp Director since October 2005 and Chair Emeritus since September 2021

Mr. Karp, 82, was with Cineplex Odeon Corporation in various positions from 1986 to 2005, retiring as Chairman and Chief Executive Officer in 2002 and as Chairman Emeritus in 2005. From 1966 to 1986, he practiced law at the law firm of Goodman and Carr LLP, where he was named partner in 1970. Mr. Karp was until recently a Director of Brookfield Real Estate Services Inc., where he also served on the Audit Committee and as the Chair of the Corporate Governance Committee. From 2004 to 2014, Mr. Karp was Chairman of the Board of Directors of IBI Group Inc., as well as Chairman of the Nominating, Governance and Compensation Committee. Mr. Karp is a past director of the Toronto International Film Festival Group, where he served as Chairman of the Board from 1999 to 2007 and served as Chairman of its Corporate Governance Committee from 2007 to 2012. Additionally, Mr. Karp has previously served as director of several other public corporations.

Mr. Karp has extensive executive leadership skills, long-standing senior management experience, a strong ethics and compliance focus and audit committee experience. These skills and qualifications, in addition to his recent service on the boards of directors of other public companies, enable him to bring valuable perspectives to our Board, particularly with respect to corporate governance matters, and qualify him to be a director of Tucows.

Erez Gissin Director since August 2001

Mr. Gissin, 64, has served since 2010 as a managing partner in Helios Energy Investment, a renewable energy investment fund. From 2005 to 2010, Mr. Gissin served as the Chief Executive Officer of BCID Ltd., an investment company focusing on infrastructure development projects in China. From 2000 to 2005, Mr. Gissin served as the Chief Executive Officer of IP Planet Networks Ltd., an Israeli satellite communication operator providing Internet backbone connectivity and solutions to Internet Service Providers. From 1995 to 2000, Mr. Gissin was Vice President, Business Development of Eurocom Communications Ltd., a holding company that controls several telecommunications services, equipment and Internet companies in Israel.

Mr. Gissin has a strong background in the internet communications industry and has gained significant institutional knowledge in his long tenure as one of our directors. Mr. Gissin also has significant leadership experience as the Chief Executive Officer of BCID Ltd. and IP Planet Networks Ltd. and has extensive financial acumen derived from his years of executive experience and PE fund management. All of these qualities qualify Mr. Gissin to be a director of Tucows.

Elliot Noss Director since August 2001

Mr. Noss, 60, is our President and Chief Executive Officer and has served in such capacity since the completion of our merger with Tucows Delaware in August 2001. From May 1999 until completion of the merger in August 2001, Mr. Noss served as President and Chief Executive Officer of Tucows Delaware. Before that, from April 1997 to May 1999, Mr. Noss served as Vice President of Corporate Services of Tucows Interactive Ltd., which was acquired by Tucows Delaware in May 1999.

Mr. Noss's lengthy service as our Chief Executive Officer has provided him with extensive knowledge of, and experience with, Tucows' operations, strategy and financial position. In addition, Mr. Noss has widespread knowledge of the internet and software industry generally that, coupled with his operational expertise, qualifies him to be a director of Tucows.

Jeffrey Schwartz Director since June 2005

Mr. Schwartz, 60, has served as a director of Dorel Industries since 1987 and as Executive Vice President and Chief Financial Officer since 2003. Mr. Schwartz is a graduate of McGill University in Montreal and has a degree in the field of business administration.

Mr. Schwartz has a significant amount of public-company financial expertise, particularly in his executive experience as the chief financial officer of Dorel Industries, Inc. This executive experience, along with Mr. Schwartz's service as one of our Audit Committee members (and as Chairperson of our Audit Committee since 2005), qualifies him to be a director of Tucows.

Brad Burnham Director since January 2017

Brad Burnham, 68, is the co-founder and a current Partner of Union Square Ventures ("USV"), founded in 2003, an early stage venture capital firm in New York. USV has invested in more than 75 Internet services, including, Twitter, Inc., Tumblr, Inc., Etsy, Inc., Indeed, Inc., Zynga Inc., Foursquare Labs, Inc, Duolingo, Inc. and Coinbase, Inc. Prior to USV, Mr. Burnham was a partner at AT&T Ventures, the venture capital arm of AT&T. AT&T Ventures invested in consumer facing Internet services like Audible, telecommunications technology companies such as Argon, Xedia, and Juniper Networks, and Competitive Local Exchange Carriers (CLECs) such as Knology, and Data Local Exchange Carriers ("DLECs") such as Covad. Prior to joining AT&T Ventures, Mr. Burnham was the founder and CEO of Echo Logic, a software tools company spun out of Bell Laboratories. Earlier in his career, Brad held a number of management positions in sales, marketing and business development at AT&T Computer Systems. He began his career as a sales representative at New York Telephone. Mr. Burnham also currently serves on the boards of directors of several non-public organizations.

Mr. Burnham has extensive experience in investing in and serving on the boards of numerous internet service companies which qualify him to be a director of Tucows.

Marlene Carl Director since September 2021

Marlene Carl, 33, became Chief Financial Officer ("CFO") at MEDIQON group AG in 2021, a German publicly traded company focused on entrepreneurial and long-term investments in companies with scalable business models from a variety of sectors including a number of software companies. Prior to joining MEDIQON in 2020, Ms. Carl worked in financing for eight years focusing on digital infrastructure in Europe from FTTH roll-outs in rural areas to data center construction for banks, including Berenberg and NIBC Bank N.V. based in Hamburg, London and Frankfurt. Ms. Carl holds a Master of Science from Frankfurt School of Finance & Management with focus on Capital Markets.

Ms. Carl's experience in investment management and infrastructure financing, including FTTH projects, qualify her to be a director of Tucows.

Our directors are elected annually and serve until the election or appointment and qualification of their successors or their earlier death, resignation or removal.

Executive Officers

The required information regarding our executive officers is set forth in Part I, Item 1 hereof under the caption "Executive Officers and Key Employees" and is incorporated herein by reference.

Governance Principles

The governance principles of our Board include the charters of our Audit Committee and our Corporate Governance, Nominating and Compensation Committee. Our governing principles also include our Code of Business Conduct and Ethics which includes specifics for our senior officers, including our Chief Executive Officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. Each of these documents can be obtained without charge from our Internet web site at tucows.com. Amendments and waivers of our ethics policy for our senior officers will either be posted on our website or filed with the SEC on a Current Report on Form 8-K.

Ms. Chase serves as Chair of the Board. The Board currently consists of seven directors, all of whom, except for Elliot Noss, are "independent" within the meaning of the independence requirements prescribed by the listing standards of the NASDAQ Capital Market. The Board believes that this structure, which provides an overwhelming majority of independent directors, coupled with the Board meeting in executive session without any management directors or non-independent directors present, is an appropriate structure for Tucows' Board. We believe that this structure provides appropriate and independent oversight by the Board. The Board regularly consults with our Chief Executive Officer, who is also a director, and our Corporate Governance, Nominating and Compensation Committee to review the various types of risk that affect Tucows and the strategies to mitigate such risks. The Board believes that this structure has been effective.

Meetings

Our Board met seven times for regularly scheduled meetings and seven times for special meetings during Fiscal 2022. Our Board also took action by unanimous written consent on four occasions during Fiscal 2022. Each director attended at least 75% of the total number of meetings of the Board during Fiscal 2022.

Executive Sessions of Independent Directors

A majority of the independent directors meet quarterly in executive sessions without members of our management present. Ms. Chase is responsible for chairing the executive sessions.

Policy Regarding Attendance

Directors are expected, but are not required, to attend board meetings, meetings of committees on which they serve, and shareholder meetings, and to spend the time needed and meet as frequently as necessary to discharge their responsibilities properly. Elliot Noss attended our 2022 annual meeting of shareholders held virtually. The remainder of the Board were available on request.

Committees

Our Board has two committees, an audit committee established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended, and a corporate governance, nominating and compensation committee. Our committees generally meet in connection with regularly scheduled quarterly and annual meetings of the Board, with additional meetings held as often as its members deem necessary to perform its responsibilities. From time to time, depending on the circumstances, the Board may form a new committee or disband a current committee.

The Audit Committee currently consists of Mr. Schwartz (Chair), Mr. Karp and Mr. Gissin, all of whom are independent directors as prescribed by the listing standards of the NASDAQ Capital Market.

The Audit Committee held five meetings during Fiscal 2022. Each member of the Audit Committee attended at least 75% of the total number of meetings of the committee during Fiscal 2022. The Audit Committee's purposes are to:

- Provide oversight of the Company's accounting and financial reporting processes and the audit of the Company's financial statements;

- Assist the Board in oversight of (i) the integrity of the Company's financial statements, (ii) the Company's compliance with legal and regulatory requirements, (iii) the qualifications, independence and performance of the Company's independent registered public accounting firm, and (iv) the Company's internal accounting and financial controls;

- Provide to the Board such information and materials as it may deem necessary to make the Board aware of significant financial matters that require the attention of the Board; and

- Oversee the management of risks associated with the Company's financial reporting, accounting and auditing matters.

Each of the members of our Audit Committee is an independent director and satisfies the independence standards as prescribed by the listing standards of the NASDAQ Capital Market and Rule 10A-3 under the Exchange Act and is able to read and understand fundamental financial statements including balance sheets, income statements and cash flow statements. Additionally, the Board has determined that Mr. Schwartz qualifies as an "audit committee financial expert" as defined under Item 407(d)(5) of Regulation S-K. The Board has adopted a written charter for the Audit Committee, which the Audit Committee has reviewed and determined to be in compliance with the rules prescribed by the listing standards of the NASDAQ Capital Market and which is available at tucows.com.

The Corporate Governance, Nominating and Compensation Committee currently consists of Ms. Chase (Chair), Mr. Schwartz and Mr. Karp. Each member of our Corporate Governance, Nominating and Compensation Committee is an independent director as defined in the listing standards of the NASDAQ Capital Market and also satisfies the applicable compensation committee member independence standards as prescribed by the listing standards of the NASDAQ Capital Market and Rule 10C-1 under the Exchange Act.

The *Corporate Governance, Nominating and Compensation Committee* held four meetings during Fiscal 2022. The Corporate Governance, Nominating and Compensation Committee took action by unanimous written consent on one occasion during Fiscal 2022. Each member of the Corporate Governance, Nominating and Compensation Committee attended at least 75% of the total number of meetings of the committee during Fiscal 2022. The Corporate Governance, Nominating and Compensation Committee's purposes are to:

- Identify individuals qualified to become board members, consistent with criteria approved by the Board.
- Select, or recommend that the Board select, the director nominees for election at each annual meeting of stockholders.
- Oversee the evaluation of the Board and management.
- Review and approve corporate goals and objectives relevant to the CEO compensation, evaluate the CEO's performance in light of those goals and objectives, and, either as a committee or together with the other independent directors (as directed by the Board), determine and approve the CEO's compensation level based on this evaluation.
- Review and approve non-CEO Executive compensation including incentive compensation and equity-based compensation.
- Provide oversight of the Company's compensation policies and plans and benefits programs, and overall compensation philosophy.
- Administer the Company's equity compensation plans for its executive officers and employees and the granting of equity awards pursuant to such plans or outside of such plans; and
- Cause to be prepared the report of the Corporate Governance, Nominating and Compensation required by the rules and regulations of the SEC.

The Corporate Governance, Nominating and Compensation Committee may delegate authority to one or more members of this committee or one or more members of management when appropriate, but no such delegation is allowed if the authority is required by law, regulation or listing standard to be exercised by the Corporate Governance, Nominating and Compensation Committee as a whole. The Board has adopted a written charter for the Corporate Governance, Nominating and Compensation Committee, which the Corporate Governance, Nominating and Compensation Committee has reviewed and determined to be in compliance with the rules prescribed by the listing standards of the NASDAQ Capital Market and which is available at tucows.com.

Our executive officers do not play a formal role in determining their compensation. However, our People Team reviews (i) information the Company purchased from Payscales (formerly known as Payfactor) and (ii) published trends for the year from a variety of public sources, and, after consulting with Mr. Noss, our Chief Executive Officer, provides consolidated information outlining management's recommendation regarding executive officer compensation based on title to the Corporate Governance, Nominating and Compensation Committee. The Corporate Governance, Nominating and Compensation Committee then reviews and discusses the information provided with our CEO and Chief People Officer and then determines the total compensation for each named executive office, as it deems appropriate.

Board Leadership Structure and Responsibilities

Our Board of Directors oversees management's performance on behalf of our shareholders. Our Board's primary responsibilities are to (1) monitor management's performance to assess whether we are operating in an effective, efficient and ethical manner to create value for our shareholders, (2) periodically review our long-range plans, business initiatives, capital projects and budget matters and (3) approve compensation for our President and Chief Executive Officer who, with senior management, manages our day-to-day operations.

Our Board and its committees meet throughout the year on a set schedule, and also hold special meetings and act by written consent from time to time as appropriate. The independent directors meet without management present at regularly scheduled executive sessions at each quarterly Board meeting and some special Board meetings. Our Board has delegated certain responsibilities and authority to its Audit Committee and Corporate Governance, Nominating and Compensation Committee. The Audit Committee periodically discusses with management the Company's policies and guidelines regarding risk assessment and risk management, as well as the Company's major financial risk exposures and the steps that management has taken to monitor and control such exposures. The Audit Committee also reviews, evaluates and recommends changes to the Company's financial reporting policies and procedures. The Corporate Governance, Nominating and Compensation Committee reviews and evaluates the risks underlying the Company's compensation policies and plans and recommends changes to these policies and plans accordingly. Our Board believes that risk oversight actions taken by our Board and its committees are appropriate and effective at this time.

We believe it is beneficial to separate the roles of Chief Executive Officer and Chairperson to facilitate their differing roles in the leadership of our company. The role of the Chairperson includes setting the agenda for, and presiding over, all meetings of our Board of Directors, including executive sessions of independent directors, providing input regarding information sent to our Board of Directors, serving as liaison between the Chief Executive Officer and the independent directors and providing advice and assistance to the Chief Executive Officer. The Chairperson is also a key participant in establishing performance objectives and overseeing the process for the annual evaluation of our Chief Executive Officer's performance. In addition, under our Bylaws, our Chairperson has the authority to call special meetings of our Board and shareholders. In contrast, our Chief Executive Officer is responsible for handling our day-to-day management and direction, serving as a leader to the management team and formulating corporate strategy.

Currently our Chairperson is Ms. Chase, while Mr. Noss serves as our Chief Executive Officer. Ms. Chase is an independent director. Ms. Chase has extensive executive leadership skills, long-standing senior management and board experience, and a strong ethics and compliance focus.

We believe that this leadership structure for our Board provides us with the most effective level of oversight over the Company's business operations while at the same time enhancing our Board's ability to oversee our enterprise-wide approach to risk management and corporate governance and best serves the interests of our shareholders. It allows for a balanced corporate vision and strategy, which is necessary to address the challenges and opportunities we face at this time and demonstrates our commitment to good corporate governance. In addition, it allows for appropriate oversight of the Company by our Board, fosters appropriate accountability of management and provides a clear delineation of responsibilities for each position.

Board Diversity

We believe it is important that our Board is composed of individuals reflecting the diversity represented by our employees, our customers, and our communities. With the addition of Marlene Carl in 2021, we have expanded the diversity of our Board. Below, we provide an enhanced disclosure regarding the diversity of our Board as required by the listing standards of the NASDAQ Capital Market.

Board Diversity Matrix (As of March 15, 2023)				
Total Number of Directors	7			
	Female	**Male**	**Non-Binary**	**Did Not Disclose Gender**
Part I: Gender Identify				
Directors	2	5	0	0
Part II: Demographic Background				
African American or Black	0	0	0	0
Alaskan Native or Native American	0	0	0	0
Asian	0	0	0	0
Hispanic or Latinx	0	0	0	0
Native Hawaiian or Pacific Islander	0	0	0	0
White	2	5	0	0
Two or More Races or Ethnicities	0	0	0	0
LGBTQ+	0			
Did Not Disclose Demographic Background	0			

Role of the Board in Risk Oversight

One of our Board's key functions is providing oversight of our risk management process. Our Board does not have a standing risk management committee, but rather administers this oversight function directly through our Board as a whole, as well as through Board of Directors standing committees that address risks inherent in their respective areas of oversight. In particular, our Audit Committee has the responsibility to consider and discuss our major financial risk exposures and the steps our management has taken to monitor and control these exposures, our Corporate Governance, Nominating and Compensation Committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking, monitors our major legal compliance risk exposures and our program for promoting and monitoring compliance with applicable legal and regulatory requirements, and our Board is responsible for monitoring and assessing strategic risk exposure and other risks not covered by our committees.

The full Board (or the appropriate committee in the case of risks that are under the purview of a particular committee) receives reports on the risks we face from our Chief Executive Officer or other members of management to enable us to understand our risk identification, risk management and risk mitigation strategies. When a committee receives the report, the chairperson of the relevant committee reports on the discussion to the full Board during that committee's reports portion of the next Board meeting. However, it is the responsibility of the committee chairs to report findings regarding material risk exposures to our Board as quickly as possible.

Director Nomination

Our Corporate Governance, Nominating and Compensation Committee is responsible for identifying potential nominees to our Board. In considering candidates for nomination, our Corporate Governance, Nominating and Compensation Committee seeks individuals who evidence strength of character, mature judgment, career specialization, relevant technical skills or financial acumen, diversity of viewpoint and industry knowledge. As set forth in the charter of our Corporate Governance, Nominating and Compensation Committee, our Board endeavors to have directors who collectively possess a broad range of skills, expertise, industry and other knowledge and business and other experience useful to the effective oversight of our business. In addition, our Board also seeks members from diverse backgrounds so that our Board consists of members with a broad spectrum of experience and expertise and with a reputation for integrity. In determining whether to nominate a current director for re-election, our Corporate Governance, Nominating and Compensation Committee will take into account these same criteria as well as the director's past performance, including his or her participation in and contributions to the activities of the Board.

Our Corporate Governance, Nominating and Compensation Committee will evaluate and consider recommendations for director candidates from shareholders using the same criteria described above. As set forth in the charter of the Corporate Governance, Nominating and Compensation Committee, recommendations submitted by the Company's shareholders shall be submitted, along with the following to the attention of the Chairperson of the Corporate Governance, Nominating and Compensation Committee at 96 Mowat Avenue, Toronto, Ontario M6K 3M1 Canada at least 120 days before the first anniversary of the date on which we first mailed our proxy materials for our prior year's annual meeting of shareholders:

- the name and address of the recommending shareholder;
- the candidate's name and the information about the individual that would be required to be included in a proxy statement under the rules of the SEC;
- information about the relationship between the candidate and the recommending shareholder;
- the consent of the candidate to serve as a director; and
- proof of the number of shares of our common stock that the recommending shareholder owns and the length of time the shares have been owned.

Communications with our Board of Directors

A Tucows' shareholder who wishes to communicate with our Board may send correspondence to the attention of our Secretary at 96 Mowat Avenue, Toronto, Ontario M6K 3M1 Canada. The Secretary will submit the shareholder's correspondence to the Chairperson of the Board, the Chairperson of the appropriate committee, or the appropriate individual director, as applicable.

Director Compensation

Under the terms of our 2006 Amended and Restated Equity Compensation Plan (the "2006 Plan"), we make automatic formula grants of nonqualified stock options to our non-employee directors and members of committees of our Board as described below. All stock-based compensation for our non-employee directors is governed by our 2006 Plan or its predecessor, our 1996 Equity Compensation Plan (the "1996 Plan"). All options granted under the automatic formula grants vest after one year, have an exercise price equal to the fair market value per common share as determined by the per share price as of the close of business on the date of grant and have a five-year term. Options are granted to directors under the 2006 Plan as follows:

- on the date a non-employee director becomes a director, he or she is granted options to purchase 4,375 shares of our common stock;
- on the date a director becomes a member of the Audit Committee, he or she is granted options to purchase 3,750 shares of our common stock;
- on the date a director becomes a member of the Corporate Governance, Nominating and Compensation Committee, he or she is granted options to purchase 2,500 shares of our common stock; and
- on each date on which we hold our annual meeting of shareholders, each non-employee director in office immediately before and after the annual election of directors receives an automatic grant of options to purchase 3,750 shares of our common stock.

Directors who are employees receive no additional or special compensation for serving as directors.

All annual fees are paid to our directors in quarterly installments.

On each date on which we hold our annual meeting of shareholders, each non-employee director in office immediately before and after the annual election of directors receives an automatic grant of options to purchase shares of our common stock. The initial grant is set at 3,750 options. Each non-employee member of the Board will receive $30,000 annually, the Chairperson of the Board will additionally receive $15,000; each Chair of the Audit Committee and Corporate Governance, Nomination and Compensation Committee will additionally receive $7,500; and each member of the Audit Committee and Corporate Governance, Nomination and Compensation Committee will additionally receive $12,000.

We also purchase directors and officer's liability insurance for the benefit of our directors and officers as a group in the amount of $30 million. We also reimburse our directors for their reasonable out-of-pocket expenses incurred in attending meetings of our Board or its committees.

The table below shows all compensation paid to each of our non-employee directors during 2022. Each of the directors listed below served for the entire year.

Name	Fees earned or paid in cash ($)	Option awards ($)(1)	Total ($)
(a)	(b)	(d)	(h)
Allen Karp	$ 54,000	$ 60,549	$ 114,549
Brad Burnham	30,000	60,549	90,549
Erez Gissin	42,000	60,549	102,549
Jeffrey Schwartz	61,500	60,549	122,049
Marlene Carl	30,000	60,549	90,549
Robin Chase	64,500	60,549	125,049
	$ 282,000	$ 363,295	$ 645,295

(1) On September 8, 2022 under the 2006 Plan, our non-employee directors were awarded these automatic formula option grants. Under the 2006 Plan, these options will vest one year after the grant date and carry an exercise price of $44.13. All these options remained outstanding as of December 31, 2022 and have a five-year term. The aggregate grant date fair value of the option grants was calculated in accordance with the FASB Accounting Standards Codification ("ASC") 718 and based on the Black-Scholes option-pricing model and used the same assumptions that are set forth in "Note 15 – Stock Option Plans" of the Notes to the Consolidated Financial Statements including Part II, Item 8 of this Annual Report.

DELINQUENT SECTION 16(a) REPORTS

Section 16(a) of the Exchange Act, requires our directors and executive officers and persons who own more than ten percent of a registered class of our equity securities to file with the SEC reports of ownership and reports of changes in ownership of our common stock and our other equity securities. These persons are required by SEC regulation to furnish us with copies of all Section 16(a) reports they file.

We believe that, under the SEC's rules and based solely upon our review of the copies of the Forms 3, 4 and 5 furnished to us, or written representations from certain reporting persons, any such reports have been filed in a timely manner.

Stock ownership of management

We encourage stock ownership by our directors, officers and employees to align their interests with the interests of shareholders. Under Section 16(a) of the Exchange Act, directors, officers and certain beneficial owners of the Company's equity securities are required to file reports of their transactions in the Company's equity securities with the SEC on specified due dates.

ITEM 11. EXECUTIVE COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

Philosophy

We recognize that our success depends to a great degree on the integrity, knowledge, imagination, skill, diversity and teamwork of our employees. To this end, attracting and retaining the level of executive talent we need to be successful in accomplishing our mission of providing simple useful services that help people unlock the power of the Internet is a key objective of our executive compensation program. Our executive compensation program is designed to ensure we have the talent we need to maintain our current high-performance standards and grow our business for the future. As such, we aim to provide competitive compensation packages for all our key positions, including our Named Executive Officers ("NEOs") that are guided by market rates and tailored to account for the specific needs and responsibilities of the particular position as well as the performance and unique qualifications of the individual employee. For Fiscal 2022, our NEO's included Messrs. Noss, Singh, Reilly, Woroch and Fausett.

This Compensation Discussion and Analysis ("CD&A") provides comprehensive information about our executive compensation program for our Fiscal 2022 NEOs, who are listed below, and provides context for the decisions underlying the compensation reported in the executive compensation tables in this Annual Report. Our NEOs are:

Elliot Noss	President and CEO, Tucows Inc. and Ting
Davinder Singh	Chief Financial Officer ("CFO")
Justin Reilly	Chief Executive Officer, Wavelo
David Woroch	Chief Executive Officer, Tucows Domains
Bret Fausett	Chief Legal Officer & General Counsel ("General Counsel")

Our philosophy is to provide a mix of compensation that motivates our executives to achieve our short and long- term performance goals in a market-competitive and fiscally responsible way, which in turn will create value for our shareholders. We achieve our objectives by designing our executive compensation program so that a substantial amount of our NEOs' compensation is performance-based to ensure the actual compensation paid to our executives is appropriately aligned with our Company's performance, and shareholder long-term interests. Beginning in Fiscal 2023 to better link individual compensation to Company performance, the Company will determine variable compensation based on a scorecard of organizational targets that are specific to each executive's business segment performance. In addition, we also link individual compensation to Company performance by virtue of the parent company or subsidiary stock options granted by the Company. More specifically, our executive compensation programs are designed to:

- provide an appropriate mix of fixed and variable compensation to attract, retain and motivate key executives;
- provide a substantial portion of our executive compensation that is performance-based, on a company or service basis, to support creation of long-term shareholder value, financial growth and operational efficiency without encouraging excessive risk taking;
- target compensation at the 50th percentile of market levels, as measured by Payscales; and
- promote internal equity by offering comparable pay to executives whom we expect to make roughly equivalent contributions, while differentiating executives' compensation arrangements when appropriate.

Overview of Pay Elements and Linkage to Compensation Philosophy and Objectives

We believe the following elements of our compensation program help us to realize our compensation philosophy and objectives:

Pay Element	Characteristics	Compensation Philosophy and Objectives	Factors Considered to Determine Awards
Salary	Annual fixed cash compensation	Provides a competitive and stable component of income to our executives	• Job responsibilities • Experience • Individual contributions • Future potential • Internal pay equity • Effect on other elements of compensation and benefits including target bonus amounts
Short-Term Incentive Bonus	Annual variable cash compensation based on the achievement of pre- established annual performance measures, for Fiscal 2022, these were based on parent company Adjusted EBITDA for Compensation and starting Fiscal 2023, these will be based on balanced scorecards for each business which include a mix of performance measures tailored to each business segment	Provides competitive short- term incentive opportunities for our executives to earn annual cash bonuses based on performance objectives that, if attained, can reasonably be expected to (i) promote our business and strategic objectives and (ii) correspond to those paid to similarly-situated and comparably skilled executives at peer companies	• Company performance measures • Service performance measures
Stock Options Grants	Annual long-term equity awards, which can be in our Company ("Company Options") that vest over 4 years or non-recurring options in one or more of our subsidiaries of Wavelo or Ting ("Subsidiary Options") that vest over 3 years	Provides variable compensation that helps to retain executives and ensures our executives' interests are aligned with those of shareholders to grow long-term value	• Job responsibilities • Individual contributions • Future potential • Value of vested and unvested outstanding equity awards • Internal pay equity

The weight of each of these components has to date not been determined by any particular formula, although our overall mix of total compensation has historically emphasized retention value. The specific mix of components has been and will continue to be within the discretion and business judgment of our Board and the Corporate Governance, Nominating and Compensation Committee, which has placed greater emphasis on considerations specific to the individual holding a particular executive position rather than on general market data.

Role of Shareholder Say-on-Pay Votes

We provide our shareholders with the opportunity to cast a triennial advisory vote on executive compensation, or a Say-on-Pay proposal. At our annual meeting of stockholders held on September 8, 2020, 96% of the votes cast on the Say- on-Pay proposal at that meeting were voted in favor of the compensation of our NEOs, as described in the proxy statement for the 2020 annual meeting. Accordingly, the Corporate Governance, Nominating and Compensation Committee believes that this affirms stockholder support for our executive compensation policies and practices, and no material changes have been made to such policies and practices as a result of our Say-on-Pay proposal and voting results in September 2020.

At the 2020 Annual Meeting, a majority of our stockholders approved, as recommended by our Board, a proposal for our stockholders to be provided with the opportunity to cast a non-binding advisory vote on compensation of our NEOs every three years. Our Board believed that this frequency would be appropriate as a triennial vote would provide the Company with sufficient time to engage with stockholders to understand and respond to the “say-on-pay” vote results and to put in place any changes to the Company’s compensation program as a result of such discussions, if necessary. The next stockholder advisory (non-binding) vote on executive compensation will be held at our 2023 Annual Meeting.

Determining Total Compensation

Base Salary

With respect to each NEO, in determining total compensation, the Corporate Governance, Nominating and Compensation Committee considers the Company’s compensation philosophy as outlined above, comparative market data and specific factors relative to each NEO’s responsibilities and performance. We do not specifically benchmark compensation for our NEOs in terms of picking a particular percentile relative to other people with similar titles at peer group companies. We believe that many subjective factors unique to each NEO’s responsibilities and performance are not adequately reflected or otherwise accounted for in a percentile-based compensation determination.

In addition, in determining the appropriate level of total compensation for our NEOs, the Corporate Governance, Nominating and Compensation Committee (i) reviews and considers the performance of each NEO, and (ii) considers, for each NEO, the estimated amount of total compensation:

- we would be willing to pay to retain that person;
- we would have to pay to replace the person; and
- the individual could otherwise command in the employment marketplace.

Our People Team leadership reviews comparative data derived from market research and publicly available information for each of the NEOs and then recommends compensation levels for all employees to our CEO. The CEO then, after consultation with our People Team, makes recommendations to the Corporate Governance, Nominating and Compensation Committee regarding total compensation for each NEO. The Corporate Governance, Nominating and Compensation Committee reviews and discusses the information and then determines the total compensation for each NEO, as it deems appropriate.

The CEO’s total compensation is determined by the Corporate Governance, Nominating and Compensation Committee outside the presence of the CEO. The Committee’s decision regarding total compensation for the CEO is based on the philosophy outlined above and includes a review of comparative data and consideration of the accomplishments of the CEO in developing the business strategy for the Company, the performance of the Company relative to this strategy and his ability to attract and retain senior management. In establishing the CEO’s total compensation, the Corporate Governance, Nominating and Compensation Committee is also mindful of the prior results of the shareholder’s Advisory Vote on Executive Compensation.

We provide a base salary to our NEOs to compensate them for services rendered on a day-to-day basis during the year and to provide sufficient fixed cash compensation to allow them to focus on their ongoing responsibilities. The base salaries of all executive officers are reviewed annually and adjusted when necessary to reflect individual roles and performance as well as market conditions.

In connection with the Corporate Governance, Nominating and Compensation Committee's annual review process, the Committee approved a new targeted total compensation structure for our NEOs, including an increase to base and incentive bonus compensation. The Committee approved the increase in compensation in a phased approach with 50% of the increase implemented in 2020 and 50% of the increase implemented in 2021 and 2022, respectively.

Annual Cash Incentive Bonuses

We use annual cash incentive bonuses to communicate specific goals that are of primary importance during the coming year and motivate our senior officers and NEOs to achieve these goals. Each year, we assess if our corporate financial and strategic objectives are optimally aligned with our management incentive compensation plan to motivate and reward our senior executives, including our NEOs, to attain specific short-term performance objectives that, in turn, further our long-term business objectives. These objectives are based upon corporate or service-related targets, rather than individual objectives. In setting target payout levels under our management incentive compensation plan, our Corporate Governance, Nominating and Compensation Committee considers historical payouts, the total cost to the company should performance objectives be achieved and our retention needs.

As a result of the Corporate Governance, Nominating and Compensation Committee's assessment and the re-alignment of Tucows' operating segments in 2022, starting in Fiscal 2023, our annual cash incentive bonuses will be based on a balanced scorecards for each business which include a mix of performance measures tailored to each business segment.

The Corporate Governance, Nominating and Compensation Committee determines the initial level of funding for the annual incentive bonus pools during the annual budgeting process and approves provisional quarterly payments, computed on a pro-rata basis, based on quarterly minimum year-to-date targets for our senior officers, including NEOs, taking into account the Company's actual performance on a year-to-date basis. In Fiscal 2022, to ensure that our annual target remained the primary consideration, any quarterly payments were subject to a discretionary holdback percentage, which has historically been set at 25%. For Fiscal 2023, semi-annual payments will not be subject to a discretionary holdback percentage of 25%. The future holdback percentage could be adjusted for each semi-annual period should circumstances warrant it. The Corporate Governance, Nominating and Compensation Committee retains the right to interpret, rescind, prescribe, amend or suspend payment under our management incentive compensation plan at any time. Changes made by the Corporate Governance, Nominating and Compensation Committee will however only be on a prospective basis so will not impact any semi-annual rights our NEO's and senior officers may have up to the date of the change.

The performance goals under our management incentive compensation plan consists of two components; namely, an incentive bonus and an overachievement bonus, each with established thresholds and maximum achievement levels.

For the incentive bonus component, achievement of established targets for each NEO will equate to 100% of the bonus being paid. Where 75% of an established target is achieved ("floor level") this will result in 50% of the bonus being paid. Below the floor level no bonus is payable. In those cases where achievement is between the floor level and the established target, straight-line interpolation is applied from the established target levels.

To further incent our senior management and NEOs to promote our business and strategic objectives; to the extent that the Company's actual performance exceeds the Company's targets, which was Adjusted EBITDA in 2022 or each individual business' balanced scorecard for 2023 for compensation goals ("overachievement target"), the Compensation Committee sets aside 30% of the overachievement target in an overachievement pool to reward our senior management, employees and NEOs.

The table below summarizes the 2022 and 2023 incentive bonus opportunities for our NEOs.

Unaudited

	2023			2022		
Named Officer		**Target incentive Bonus Opportunity(1)**	**Basis for Target incentive Bonus for 2023**		**Target incentive Bonus Opportunity(1)**	**Basis for Target incentive Bonus for 2022**
Elliot Noss	$	362,858	50% Ting targets, 30% Wavelo targets and 20% Tucows Domains targets	$	281,452	100% Consolidated Adjusted EBITDA for Compensation(2)
Davinder Singh	$	153,276	50% Ting targets, 15% Wavelo targets and 35% Tucows Domains targets	$	137,816	100% Consolidated Adjusted EBITDA for Compensation(2)
Justin Reilly	$	347,344	100% Wavelo targets	$	361,818	100% Consolidated Adjusted EBITDA for Compensation(2)
David Woroch	$	157,064	100% Domain Services targets	$	144,308	100% Domain Services targets
Bret Fausett	$	158,828	50% Ting targets, 15% Wavelo targets and 35% Tucows Domains targets	$	120,578	100% Consolidated Adjusted EBITDA for Compensation(2)

(1) All dollar amounts below are shown U.S. dollars. Amounts payable in Canadian dollars for 2022 have been converted into U.S. dollars based upon the exchange rate of 1.300 Canadian dollars for each U.S. dollar, the average OANDA exchange rate for 2022 as at December 31, 2022. Amounts payable in Canadian dollars during the 2023 fiscal year have been converted into U.S. dollars based upon the exchange rate of 1.354 Canadian dollars for each U.S. dollar, which represents the year-end exchange rate as at December 31, 2022

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(2) Adjusted EBITDA for Compensation excludes depreciation of property and equipment, amortization of intangibles, income tax provision, interest expense, interest income, stock-based compensation, accretion of contingent consideration, asset impairment, loss on the disposal of Ting Mobile customer assets, gains and losses from unrealized foreign currency transactions and infrequently occurring items including acquisition and transition costs. Gains and losses from unrealized foreign currency transactions removes the unrealized effect of the change in the mark-to-market values on outstanding unhedged foreign currency contracts, as well as the unrealized effect from the translation of monetary accounts denominated in non-U.S. dollars to U.S. dollars and infrequently occurring items. Under relevant SEC rule, we are not required to present reconciliation of Adjusted EBITDA for Compensation to GAAP financial measures if Adjusted EBITDA for Compensation is presented in connection with disclosure of target levels in the CD&A.

Our Corporate Governance, Nominating and Compensation Committee met in February 2023 and determined the achievement of the financial objectives applicable under the management incentive compensation plan for 2022 had been partially achieved. As the Company only partially met its Adjusted EBITDA for Compensation targets for the fiscal year ended December 31, 2022, the Corporate Governance, Nominating and Compensation Committee assessed that 80% of the incentive bonuses for all our NEO's was payable.

In connection with the Corporate Governance, Nominating and Compensation Committee's annual review process, the Committee also approved a new set of performance goals under our management incentive compensation plan for Fiscal 2023 and decided not to increase the incentive bonus target opportunity for our NEOs.

Overachievement Bonus Program

The Overachievement Bonus Program is designed to further incent our employees, senior management and NEOs to exceed the Company's Adjusted EBITDA for compensation goals. In assessing our overall performance for Fiscal 2022, the Corporate Governance, Nominating and Compensation Committee deemed that no overachievement bonus should be payable for Fiscal 2022.

Equity-Based Awards

We believe that equity-based awards encourage our NEOs to focus on the long-term performance of our business. Our Board grants equity awards to executives and other employees in order to enable them to participate in the long-term appreciation of our stock price. Additionally, we believe our equity awards provide an important retention tool for our NEOs, as they are subject to multi-year vesting. The equity awards can be Company Options and Subsidiary Options. To date, we have not adopted stock ownership guidelines for our NEOs.

Historically, we have granted equity-based awards in the form of Company Options, including options granted at the commencement of employment and additional awards each year. The size of the initial option grant made to each NEO upon joining our company is primarily based on competitive conditions applicable to the NEO's specific position. For subsequent equity grants to our NEOs, our Corporate Governance, Nominating and Compensation Committee receives input from our CEO and the People Team leadership.

In Fiscal 2022 the Company issued Subsidiary Options for Wavelo in addition to the Company Options. Please see Note 15– Stock Option Plans" of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report for a detailed description of these plans. In Fiscal 2023 the Company issued Subsidiary Options for Ting. The Company granted Subsidiary Options in Ting to certain NEOs on January 16, 2023. The Ting Equity Compensation Plan (ECP) includes private subsidiary stock which have been established for the benefit of the employees, officers, directors and certain consultants of Ting. The Ting stock options were introduced in order to provide variable compensation that helps retain executives and ensures that our executives' interests are aligned with those stakeholders of the business to grow the long-term value. The maximum number of Ting common units that have been set aside for issuance under the plan is 10 million units, currently there are 100 million common units outstanding. Generally, options issued under the ECP vest over a four-year period and have a term not exceeding ten years. Compensation costs for awards of stock-based compensation settled in shares are determined based on the fair value of share-based instrument at the time of the grant and are recognized as expense over the vesting period of the share-based instrument. No Company Option grants have yet been awarded for Fiscal 2023.

In connection with its annual review process, the Corporate Governance, Nominating and Compensation Committee approved, effective June 17, 2022, the following Company Option awards to our NEOs. These options vest in equal installments on each of the first four anniversaries of the grant date, generally subject to the NEO's continued employment with us. In addition, we granted Subsidiary Options in Wavelo on November 9, 2022.

The following table sets forth the number of Company Options granted and their corresponding aggregate grant date fair value as of December 31, 2022.

Name	Number of Company Options	Aggregate Grant Date Fair Value (US Dollars)
Elliot Noss	5,000	$ 73,781
Davinder Singh	5,000	$ 73,781
Justin Reilly	5,000	$ 73,781
David Woroch	10,000	$ 147,561
Bret Fausett	5,000	$ 73,781

The following table sets forth the number of Wavelo Subsidiary Options granted and their corresponding aggregate grant date fair value as of December 31, 2022.

Name	Number of Subsidiary Options	Aggregate Grant Date Fair Value (US Dollars)
Elliot Noss	1,000,000	$ 487,761
Davinder Singh	150,000	$ 73,164
Justin Reilly	4,500,000	$ 2,194,926
Bret Fausett	150,000	$ 73,164

The following table sets forth the number of Ting Subsidiary Options granted and their corresponding aggregate grant date fair value, as of January 16, 2023:

Name	Number of Subsidiary Options	Exercise Price
Elliot Noss	2,000,000	$ 6.00
Davinder Singh	50,000	$ 6.00
Bret Fausett	50,000	$ 6.00

During Fiscal 2022 options exercised and vested for our named executive officers were as follows:

Name	Company options exercised during Fiscal 2022	Company options vested during Fiscal 2022	Subsidiary options exercised during Fiscal 2022	Subsidiary options vested during Fiscal 2022
Elliot Noss	10,000	4,625	-	-
Davinder Singh	7,000	2,938	-	-
Justin Reilly	-	3,813	-	-
David Woroch	5,000	2,688	-	-
Bret Fausett	-	2,657	-	-

Severance and Change of Control Benefits

Our Board believes that it is necessary to offer senior members of our executive team severance benefits to ensure that they remain focused on executing our strategic plans, including in the event of a proposed or actual acquisition. We have entered into employment agreements with our NEOs to provide them with additional severance benefits upon an involuntary termination of employment under specified circumstances prior to and following a change of control. The terms of these agreements are described below in "Potential Payments on Termination or Change in Control."

Perquisites

We do not provide any significant perquisites or other personal benefits to our NEOs.

Benefits

We provide the following benefits to our NEOs. We believe these benefits are typical of the companies with which we compete for employees:

- healthcare insurance;
- life insurance and accidental death and dismemberment insurance;
- long term disability insurance;
- a registered retirement savings matching program;
- a healthcare spending account;
- a car allowance;
- an annual medical; and
- an employee assistance program.

Certain Corporate Governance Considerations

We currently do not require our executive officers to own a particular number of shares of our common stock. The Corporate Governance, Nominating and Compensation Committee is satisfied that stock and option holdings among our executive officers are sufficient at this time to provide motivation and to align their interests with those of our stockholders. However, we prohibit all directors and employees from hedging their economic interest in the Company securities that they hold.

Tax Considerations

We do not provide any tax gross-ups to our executive officers or directors.

In designing our compensation programs, the Corporate Governance, Nominating and Compensation Committee considers the financial accounting and tax consequences to Tucows as well as the tax consequences to our employees. In determining the aggregate number and mix of equity grants in any fiscal year, the Corporate Governance, Nominating and Compensation Committee and management consider the size and share-based compensation expense of the outstanding and new equity awards.

Section 162(m) of the Internal Revenue Code generally disallows a federal income tax deduction to public companies for annual compensation over $1 million (per individual) paid to their chief executive officer, chief financial officer and the next three most highly compensated executive officers (as well as certain other officers who were covered employees in years after 2016). As a result, most of the compensation payable to our NEOs in excess of $1 million per person in a year will not be fully deductible.

Tax deductibility is not the primary factor used by the Committee in setting compensation, however, and corporate objectives may not necessarily align with the requirements for full deductibility under Section 162(m). Our Corporate Governance, Nominating and Compensation Committee has not adopted a formal policy regarding tax deductibility of compensation paid to our NEOs. We believe it is important and in the best interests of our shareholders to preserve flexibility in administering compensation programs as corporate objectives may not always be consistent with the requirements for full deductibility under Section 162(m).

Compensation Risk Assessment

The Corporate Governance, Nominating and Compensation Committee oversaw the performance of a risk assessment of our Executive Compensation Program to ascertain any potential material risks that may be created by this program. Because performance-based incentives are used in our executive compensation program, it is important to ensure that these incentives do not result in our NEOs taking unnecessary or excessive risks or any other actions that may conflict with our long-term interests. The Corporate Governance, Nominating and Compensation Committee considered the following attributes of our Executive Compensation Program:

- the balance between short- and long-term incentives;
- use of qualitative as well as quantitative performance factors in determining compensation payouts, including minimum and maximum performance thresholds, funding that is based on actual results measured against pre-approved financial and operational goals and metrics that are clearly defined;
- incentive compensation that includes a stock component where value is best realized through long-term appreciation of stockholder value; and
- incentive compensation components that are paid or vest over an extended period.

The Corporate Governance, Nominating and Compensation Committee focuses primarily on the compensation of our NEOs because risk-related decisions depend predominantly on their judgment. The Corporate Governance, Nominating and Compensation Committee believes that risks arising from our policies and practices for compensation of other employees are not reasonably likely to have a material adverse effect on us.

Compensation Committee Report

The Corporate Governance, Nominating and Compensation Committee has reviewed and discussed the foregoing CD&A with management and, based on such review and discussions, the Corporate Governance, Nominating and Compensation Committee has recommended to the Board that the CD&A be included in this Annual Report.

Submitted by the following members of the Corporate Governance, Nominating and Compensation Committee:

Robin Chase (Chair)
Allen Karp
Jeffrey Schwartz

Summary Compensation Table

The following Summary Compensation table provides a summary of the compensation earned by our NEOs, including our Chief Executive Officer, our Chief Financial Officer, and our next three most highly compensated executive officers for services rendered in all capacities during 2022. Specific aspects of this compensation are dealt with in further detail in the tables that follow. All dollar amounts below are shown in U.S. dollars. If necessary, amounts that were paid in Canadian dollars during Fiscal 2022 were converted into U.S. dollars based upon the exchange rate of 1.300 Canadian dollars for each U.S. dollar, which represents the average exchange rate for 2022.

Name and Principal Position	Year	Salary ($)	Bonus (1) ($)	Stock Awards ($)	Option Awards (2) ($)	All Other Compensation (3) ($)	Total ($)
(a)	(b)	(c)	(d)		(f)	(i)	(j)
Elliot Noss	2022	$ 409,156	$ 281,452	$ —	$ 73,781	$ 495,571	$ 1,259,960
President and Chief Executive Officer of Tucows and Ting	2021	397,112	242,240	—	125,719	8,379	773,450
	2020	359,143	204,713	—	90,315	7,845	662,016
Davinder Singh	2022	269,447	137,816	—	73,781	176,012	657,056
Chief Financial Officer	2021	260,840	112,162	—	125,719	7,182	505,902
	2020	234,511	82,077	—	45,158	6,724	368,470
Justin Reilly (4)	2022	603,031	361,818	—	73,781	2,196,080	3,234,710
Chief Executive Officer, Wavelo	2021	317,128	114,166	—	100,575	1,197	533,066
	2020	291,371	96,152	—	45,158	1121	433,802
David Woroch	2022	282,553	144,308	—	147,561	6,701	581,124
Chief Executive Officer, Tucows Domains	2021	269,165	134,584	—	100,575	7,182	511,506
	2020	246,838	120,950		45,158	6,724	419,670
Bret Fausett	2022	286,436	120,578	—	73,781	73,164	553,959
Chief Legal Officer	2021	274,461	98,806	—	125,719	-	498,985
	2020	254,846	44,100	—	47,880	-	346,826

(1) Represents bonus earned under our incentive programs during the fiscal years ended December 31, 2022, 2021 and 2020.

Of the 2022 amount, the following amounts were paid in February 2023 (unaudited):

Elliot Noss	$	107,611
Davinder Singh	$	50,389
Justin Reilly	$	233,839
David Woroch	$	57,441
Bret Fausett	$	45,773

Of the 2021 amount, the following amounts were paid in February 2022 (unaudited):

Elliot Noss	$	104,902
Davinder Singh	$	48,646
Justin Reilly	$	49,233
David Woroch	$	59,539
Bret Fausett	$	43,403

Of the 2020 amount, the following amounts were paid in February 2021 (unaudited):

Elliot Noss	$	89,561
Davinder Singh	$	35,909
Justin Reilly	$	42,066
David Woroch	$	52,916
Bret Fausett	$	37,582

(2) Represents the aggregate grant date fair value of such Company Options, calculated in accordance with FASB ASC 718. Please see "Note 15– Stock Option Plans" of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report, for a discussion of the assumptions underlying these calculations.

(3) Amounts reported in this column are comprised of the following items:

	Year	Unaudited Additional Health Spending Credits ($)	Car Allowance ($)	One-Time Payment ($)	Subsidiary Stock Options (4) ($)	All Other Compensation ($)
Elliot Noss	2022	$ 1,154	$ 6,656	$ —	$ 487,761	$ 495,571
	2021	1,197	7,182	—	—	8,379
	2020	1,121	6,724	—	—	7,845
Davinder Singh	2022	1,154	5,547	96,147	73,164	176,012
	2021	1,197	5,985	—	—	7,182
	2020	1,121	5,603	—	—	6,724
Justin Reilly	2022	1,154	—	—	2,194,926	2,196,080
	2021	1,197	—	—	—	1,197
	2020	1,121	—	—	—	1,121
David Woroch	2022	1,154	5,547	—	—	6,701
	2021	1,197	5,985	—	—	7,182
	2020	1,121	5,603	—	—	6,724
Bret Fausett	2022	—	—	—	73,164	73,164
	2021	—	—	—	—	—
	2020	—	—	—	—	—

(4) Represents the aggregate grant date fair value of such Subsidiary Options, calculated in accordance with FASB ASC 718. Please see "Note 15– Stock Option Plans" of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report, for a discussion of the assumptions underlying these calculations.

Executive Pay Ratio

In August 2015 pursuant to a mandate of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC adopted a rule requiring annual disclosure of the ratio of the median employee's annual total compensation to the total annual compensation of the principal executive officer ("PEO"). The Company's PEO is Mr. Noss. The annual total compensation for fiscal year 2022 for our PEO was $1,259,960, and for the median employee was $56,193. The resulting ratio of our PEO's pay to the pay of our median employee for fiscal year 2022 is 22 to 1.

The measurement was prepared as of December 31, 2022 based on active employees as at that date and total compensation for the annual period then ended. The Company utilized tax records to determine the total annual compensation based on gross employment income for each individual Form W-2 or equivalent for our international subsidiaries. Gross employment income includes salaries, bonus, company medical benefits, car allowance and benefits from exercise of stock-options. We determined the compensation of our median employee (i) by calculating the annual total compensation described above for each of our employees, (ii) ranking the annual total compensation of all employees except for the PEO from lowest to highest and (iii) determining the Median Employee. The Median Employee's Fiscal 2022 compensation was then determined in a manner consistent with the Summary Compensation Table above and compared to the PEO to derive the ratio.

Grants of Plan-Based Awards

The following table sets forth information concerning Company plan-based awards granted to our NEOs in 2022:

Name	Grant date	All other option awards: Number of shares underlying Company Options	Exercise or base price of Company Option awards	Grant date fair value of option awards (1)
Elliot Noss	6/17/2022	5,000	$ 41.97	$ 73,781
Davinder Singh	6/17/2022	5,000	$ 41.97	$ 73,781
Justin Reilly	6/17/2022	5,000	$ 41.97	$ 73,781
David Woroch	6/17/2022	10,000	$ 41.97	$ 147,561
Bret Fausett	6/17/2022	5,000	$ 41.97	$ 73,781

(1) Represents the grant date fair value of such awards, calculated in accordance with FASB ASC 718. Please see "Note 15 – Stock Option Plans" of Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report, for a discussion of the assumptions underlying these calculations.

The following table sets forth information concerning Subsidiary plan-based awards granted to our NEOs in 2022:

Name	Grant date	All other option awards: Number of shares underlying Subsidiary Options	Exercise or base price of Subsidiary Option awards	Grant date fair value of Subsidiary Option awards (1)
Elliot Noss	11/9/2022	1,000,000	$ 1.27	$ 487,761
Davinder Singh	11/9/2022	150,000	$ 1.27	$ 73,164
Justin Reilly	11/9/2022	4,500,000	$ 1.27	$ 2,194,926
Bret Fausett	11/9/2022	150,000	$ 1.27	$ 73,164

(1) Represents the grant date fair value of such awards, calculated in accordance with FASB ASC 718. Please see "Note 15 – Stock Option Plans" of Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report, for a discussion of the assumptions underlying these calculations.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information concerning Company Stock Options held by the named executive officers as of December 31, 2022:

Name	Number of Securities Underlying Unexercised Company Options (#) Exercisable	Number of Securities Underlying Unexercised Company Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date
Elliot Noss	4,500	—	64.10	6/4/2025
	3,375	1,125	62.12	5/27/2026
	2,250	2,250	60.01	5/27/2027
	1,250	3,750	79.44	5/11/2028
	—	5,000	41.97	6/16/2029
	11,375	12,125		
Davinder Singh	2,000	—	55.65	7/23/2024
	2,250	—	64.10	6/4/2025
	1,687	563	62.12	5/27/2026
	1,125	1,125	60.01	5/27/2027
	1,250	3,750	79.44	5/11/2028
	—	5,000	41.97	6/16/2029
	8,312	10,438		
Justin Reilly	4,500	2,250	55.19	9/15/2026
	1,125	1,125	60.01	5/27/2027
	1,000	3,000	79.44	5/11/2028
	—	5,000	41.97	6/16/2029
	6,625	11,375		
David Woroch	2,250	-	64.10	6/4/2025
	1,687	563	62.12	5/27/2026
	1,125	1,125	60.01	5/27/2027
	1,000	3,000	79.44	5/11/2028
	—	10,000	41.97	6/16/2029
	6,062	14,688		
Bret Fausett	10,000	—	53.20	9/4/2024
	1,125	—	64.10	6/4/2025
	1,687	563	62.12	5/27/2026
	1,125	1,125	60.01	5/27/2027
	1,250	3,750	79.44	5/11/2028
	—	5,000	41.97	6/16/2029
	15,187	10,438		

The stock options grants listed in the above table were issued under our 2006 Plan.

Under the 2006 Plan, these options primarily vest over a period of four years and have a 7-year term. These options are not exercisable for one year after the grant. Thereafter they become exercisable at the rate of 25% per annum, becoming fully exercisable after the fourth year.

The following table sets forth information concerning subsidiary stock options held by the named executive officers as of December 31, 2022:

Name	Number of Securities Underlying Unexercised Subsidiary Options (#) Exercisable	Number of Securities Underlying Unexercised Subsidiary Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date
Elliot Noss	—	1,000,000	1.27	11/8/2029
	—	1,000,000		
Davinder Singh	—	150,000	1.27	11/8/2029
	—	150,000		
Justin Reilly	—	4,500,000	1.27	11/8/2029
	—	4,500,000		
Bret Fausett	—	150,000	1.27	11/8/2029
	—	150,000		

The stock option grants listed in the above table were issued under the Wavelo, Inc. 2022 Equity Compensation Plan ("Wavelo ECP") adopted in 2022.

Under the Wavelo ECP, these options primarily vest over a period of three years and have a 7-year term. For the initial grants under the plan, the first 25% became exercisable within three months and vesting ratably monthly thereafter, after the third year.

Director Compensation

The required information regarding our director compensation is set forth in Part III, Item 10 “Directors, Executive Officers and Corporate Governance” of this Annual Report and is incorporated herein by reference.

Potential Payments on Termination or Change in Control

We have certain agreements that require us to provide compensation to our NEO in the event of a termination of employment or a change in control of Tucows. These agreements are summarized following the table below and do not include any payment for termination for cause. The tables below show estimated compensation payable to each NEO upon various triggering events. Actual amounts can only be determined upon the triggering event.

Unaudited			
Elliot Noss (1)	2022	Termination without Cause (Dollar amounts in U.S. dollars)	Change in Control (Dollar amounts in U.S. dollars)
Compensation			
Base Salary/Severance (2)		$ 910,796	$ 2,910,796
Bonus Plan (3)		626,520	626,520
Acceleration of Unvested Equity Awards (4)		—	—
Benefits (5)			
Car Allowance		13,312	13,312
Healthcare Flexible Spending Account		2,308	2,308
		$ 1,552,936	$ 3,552,936

Unaudited			
Davinder Singh (1)	2022	Termination without Cause (Dollar amounts in U.S. dollars)	Change in Control (Dollar amounts in U.S. dollars)
Compensation			
Base Salary/Severance (2)		290,299	—
Bonus Plan (3)		148,482	—
Acceleration of Unvested Equity Awards (4)		-	—
Benefits (5)			
Car Allowance		5,547	—
Healthcare Flexible Spending Account		1,154	—
		$ 445,482	$ —

Unaudited			
Bret Fausett (1)	2022	Termination without Cause (Dollar amounts in U.S. dollars)	Change in Control (Dollar amounts in U.S. dollars)
Compensation			
Base Salary/Severance (2)		$ 291,184	$ —
Bonus Plan (3)		122,577	—
Acceleration of Unvested Equity Awards (4)		-	-
Benefits (5)			
Car Allowance		—	—
Healthcare Flexible Spending Account		—	—
		$ 413,761	$ —

Unaudited		
Justin Reilly (1)	Termination without Cause (Dollar amounts in U.S. dollars)	Change in Control (Dollar amounts in U.S. dollars)
Compensation		
Base Salary/Severance (2)	$ 452,273	$ —
Bonus Plan (3)	271,364	—
Acceleration of Unvested Equity Awards (4)	-	—
Benefits (5)		
Car Allowance	—	—
Healthcare Flexible Spending Account	865	—
	$ 724,502	$ —

Unaudited		
David Woroch (1)	Termination without Cause (Dollar amounts in U.S. dollars)	Change in Control (Dollar amounts in U.S. dollars)
Compensation		
Base Salary/Severance (2)	$ 594,945	$ —
Bonus Plan (3)	303,857	—
Acceleration of Unvested Equity Awards (4)	-	—
Benefits (5)		
Car Allowance	11,094	—
Healthcare Flexible Spending Account	2,308	—
	$ 912,204	$ -

(1) For the purpose of the table we assumed an annual base salary at the executive's level as of December 31, 2022.

(2) Severance for Mr. Noss is compensation for one year plus one-month additional compensation for each completed year of service. Total compensation is capped at 24 months. For Messrs. Singh, Fausett, Reilly and Woroch, severance compensation is for six months plus one-month additional compensation for each completed year of service. Total compensation is capped at 24 months.

(3) For the purpose of the table we assumed that the annual incentive bonus target as of December 31, 2022 had been achieved and that no overachievement bonus or special bonuses would be payable.

(4) For purposes of the above table, we have assumed that if we terminate Mr. Noss without cause all his unvested options vest automatically and that for Messrs. Singh, Fausett, Reilly and Woroch, their options continue to vest through any severance period. On a change in control we have assumed that all unvested options for Mr. Noss vest automatically and that for Messrs. Singh, Fausett, Reilly and Woroch, their options continue to vest through and until the end of any severance period. Amounts disclosed in this table equal the closing market value of our common stock as of December 31, 2022, minus the exercise price, multiplied by the number of unvested shares of our common stock that would vest. The closing market value of our common stock on December 31, 2022 was $33.92.

(5) Pay for unused vacation, extended health, matching registered retirement savings plan benefit, life insurance and accidental death and dismemberment insurance are standard programs offered to all employees and are therefore not reported.

Employment Agreements—Termination

Employment contracts are currently in place for each of the NEOs. These employment contracts detail the severance payments that will be provided on termination of employment and the consequent obligations of non-competition and non-solicitation.

The following details the cash severance payment that will be paid to each of the named executive officers in the event of termination without cause or termination for good reason.

Upon termination without cause, Messrs. Woroch, Singh, Reilly and Fausett are each entitled to a severance payment in the amount of six months' compensation plus one months' compensation for each additional completed year of service. Severance payments can be made in equal monthly installments. Messrs. Woroch, Singh, Reilly and Fausett are each bound by a standard non-competition covenant for a period of twelve months following their termination.

Mr. Noss's employment agreements is subject to early termination by us due to:

- the death or disability of the executive;
- for "cause;" or
- without "cause."

If we terminate Mr. Noss without "cause," he is entitled to receive 12 months of compensation plus one month of compensation for each year of service, to a maximum of 24 months of compensation.

For purposes of the employment agreements, "cause" is defined to mean the executive's conviction (or plea of guilty or nolo contendere) for committing an act of fraud, embezzlement, theft or other act constituting a felony or willful failure or an executive's refusal to perform the duties and responsibilities of his position, which failure or refusal is not cured within 30 days of receiving a written notice thereof from our Board.

Employment Agreements—Change in Control

Under his employment agreements, Mr. Noss is also entitled to the change in control benefits described in the following paragraph if:

- the executive resigns with or without "good reason" within the 30-day period immediately following the date that is six months after the effective date of the "change in control;" or
- within 18 months after a "change in control" and executive's employment is terminated either:
- without "cause;" or
- by resignation for "good reason."

If an executive's employment is terminated following a change in control under the circumstances described in the preceding paragraph, the executive is entitled to receive a lump sum payment based upon the fair market value of the Company on the effective date of the "change in control" as determined by our Board in the exercise of good faith and reasonable judgment taking into account, among other things, the nature of the "change in control" and the amount and type of consideration, if any, paid in connection with the "change in control." Depending on the fair market value of the company, the lump sum payments range from $375,000 to $2 million for Mr. Noss. In addition to the lump sum payments, all stock options held by Mr. Noss will be immediately and fully vested and exercisable as of the date of termination.

A "change in control" is generally defined as:

- the acquisition of 50% or more of our common stock;
- a change in the majority of our Board unless approved by the incumbent directors (other than as a result of a contested election); and
- certain reorganizations, mergers, consolidations, liquidations or dissolutions, unless certain requirements are met regarding continuing ownership of our outstanding common stock.

"Good reason" is defined to include the occurrence of one or more of the following:

- the executive's position, management responsibilities or working conditions are diminished from those in effect immediately prior to the change in control, or he is assigned duties inconsistent with his position;
- the executive is required to be based at a location in excess of 30 miles from his principal job location or office immediately prior to the change in control;
- the executive's base compensation is reduced, or the executive's compensation and benefits taken as a whole are materially reduced, from those in effect immediately prior to the change in control; or
- we fail to obtain a satisfactory agreement from any successor to assume and agree to perform our obligations to the executive under his employment agreement.

Compensation Committee Interlocks and Insider Participation

The members of the Corporate Governance, Nominating and Compensation Committee of our Board during 2022 were Ms. Chase (Chair), Messrs. Karp and Schwartz. To ensure that our compensation policies are administered in an objective manner, our Corporate Governance, Nominating and Compensation Committee is comprised entirely of independent directors. None of the members of our Corporate Governance, Nominating and Compensation Committee has ever been an officer or employee of the Company or its subsidiaries. None of our executive officers serves as a member of the Board or compensation committee of any entity that has one or more executive officers on our Board or Corporate Governance, Nominating and Compensation Committee.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The following table sets forth the beneficial ownership of our common stock, as of March 15, 2023, by each of our directors and NEOs, as well as by all of our directors and executive officers as a group. The information on beneficial ownership in the table and related footnotes is based upon data furnished to us by, or on behalf of, the persons referred to in the table. Unless otherwise indicated in the footnotes to the table, each person named has sole voting power and sole investment power with respect to the shares included in the table.

Unaudited

	Beneficial Ownership of Company Stock			
Name	**Company Stock Beneficially Owned Excluding Options**	**Company Stock Options Exercisable within 60 Days of March 15, 2023**	**Total Common Stock Beneficially Owned**	**Percent of Class(1)**
Elliot Noss 96 Mowat Avenue Toronto, Ontario, Canada	705,603(2)	12,625	718,228	6.6%
Davinder Singh	7,000	9,562	16,562	*
Justin Reilly	-	7,625	7,625	*
David Woroch	124,856(3)	7,062	131,918	1.2%
Bret Fausett	30,000	16,437	46,437	*
Robin Chase	16,672	15,000	31,672	*
Erez Gissin	17,887	15,000	32,887	*
Jeffrey Schwartz	12,375	15,000	27,375	*
Brad Burnham	26,112(5)	7,500	33,612	*
Allen Karp	18,014(4)	15,000(6)	33,014	*
Marlene Carl	18	4,375	4,393	*
All directors and executive officers as a group (12 persons)	1,010,669	187,493	1,198,162	11.1%

* Less than 1%.

(1) Based on 10,829,711 shares outstanding as of March 13, 2023, and stock options exercisable within 60 days of March 15, 2023.

(2) Includes an aggregate of 122,309 shares of common stock that are held in Mr. Noss's RRSP accounts. Includes 1,639 shares of common stock that are held in Mr. Noss's TFSA account. Includes 38,968 shares of common stock that are held in Mr. Noss's former spouses name, over which he has voting power only, pursuant to a separation agreement of 2013. Includes 514,951 shares of Common Stock that are subject to a loan and pledge arrangement entered into by Mr. Noss in order to satisfy the required Canadian taxes and exercise price due in connection with the exercise of expiring options.

(3) Includes 54,984 shares of common stock that are held in Mr. Woroch's RRSP account and 10,750 shares of common stock held in his wife's RRSP account.

(4) Includes 3,000 shares of common stock that are held directly by Mr. Karp's wife.

Share Ownership of Certain Beneficial Owners

The following table sets forth information with respect to each shareholder known to us to be the beneficial owner of more than 5% of our outstanding common stock as of March 15, 2023 except for Mr. Noss, whose beneficial ownership of shares is described in the table above.

	Beneficial Ownership of Common Stock		
Name and Address of Beneficial Owner	Number of Shares Beneficially Owned		Percent of Class (1)
Investmentaktiengesellschaft fuer langfristige Invetoren TGV	1,787,539	(2)	16.5%
Ruengsdorfer Str. 2e			
53173 Bonn, Germany			
Edgepoint Investment Group, Inc.	1,666,019	(3)	15.4%
150 Bloor Street West, Suite 500			
Toronto, Ontario, Canada, M5S 2X9			
Blacksheep Fund Management Limited	981,230	(4)	9.1%
Rock House, Main Street, Blackrock, Co			
Dublin, Ireland A94 YY39			
BlackRock, Inc.	668,308	(5)	6.2%
55 East 52nd Street			
New York, NY 10055			
The Vanguard Group	615,568	(6)	5.7%
100 Vanguard Blvd.			

(1) Based on 10,829,711 shares outstanding as of March 13, 2023.

(2) Investmentaktiengesellschaft fuer langfristige Invetoren TGV had sole dispositive power and sole voting power over 1,787,539 shares of common stock, and shared dispositive power and shared voting power over zero shares of common stock. This information is based solely on a review of a Schedule 13G filed with the SEC on January 30, 2023 by Investmentaktiengesellschaft fuer langfristige Invetoren TGV and SEDI filings on March 1, 2023 by Investmentaktiengesellschaft für langfristige Investoren TGV.

(3) Edgepoint Investment Group, Inc. had sole dispositive power and sole voting power over 1,507,750 shares of common stock, and shared dispositive and shared voting power over 158,269 shares of common stock. This information is based solely on a review of a Schedule 13G filed with the SEC on February 13, 2023 by Edgepoint Investment Group, Inc.

(4) Blacksheep Fund Management Limited had sole dispositive power and sole voting power over zero shares shares of common stock, and both shared dispositive power and shared voting power of 981,230 shares of common stock. This information is based solely on a review of a Schedule 13D/A filed with the SEC on February 7, 2023 by Blacksheep Fund Management Limited.

(5) Blackrock Inc. had sole dispositive power and sole voting power over zero and 668,308, and 657,245 shares of common stock, respectively, and shared dispositive power and shared voting power over zero shares of common stock. This information is based solely on a review of a Schedule 13G filed with the SEC on February 1, 2023 by Blackrock Inc.

(6) The Vanguard Group has sole dispositive power and sole voting power over 590,034 and zero shares of common stock, respectively, and shared dispositive power and shared voting power over 25,534 and 16,958 shares of common stock respectively. This information is based solely on a review of a Schedule 13G filed with the SEC on February 9, 2023 by The Vanguard Group.

Equity Compensation Plan Information

The following table provides information for our Company equity compensation plans as of December 31, 2022:

Plan category	Number of securities to be issued upon exercise of outstanding Company Options, warrants and rights (#)	Weighted average exercise price of outstanding Company Options, warrants and rights ($)	Number of securities remaining available for future issuance under the plan (excluding securities reflected in the first column) (#)
Equity compensation plans approved by security holders:			
2006 Equity Compensation Plan	1,036,148	$ 62.74	1,119,606
Equity compensation plans not approved by security holders	—	—	—
Total	1,036,148	$ 62.74	1,119,606

The following table provides information for our Wavelo equity compensation plans as of December 31, 2022:

Plan category	Number of securities to be issued upon exercise of outstanding Subsidiary Options, warrants and rights (#)	Weighted average exercise price of outstanding Subsidiary Options, warrants and rights ($)	Number of securities remaining available for future issuance under the plan (excluding securities reflected in the first column) (#)
Equity compensation plans approved by security holders:			
2022 Wavelo Equity Compensation Plan	15,975,528	$ 1.27	4,024,472
Equity compensation plans not approved by security holders	—	—	—
Total	15,975,528	$ 1.27	4,024,472

The following table provides information for our Ting equity compensation plans as of January 16, 2023:

Plan category	Number of securities to be issued upon exercise of outstanding Subsidiary Options, warrants and rights (#)	Weighted average exercise price of outstanding Subsidiary Options, warrants and rights ($)	Number of securities remaining available for future issuance under the plan (excluding securities reflected in the first column) (#)
Equity compensation plans approved by security holders:			
2023 Ting Equity Compensation Plan	7,245,000	$ 6.00	2,755,000
Equity compensation plans not approved by security holders	—	—	—
Total	7,245,000	$ 6.00	2,755,000

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Review, Approval or Ratification of Transactions with Related Persons

The Audit Committee of the Board is responsible for reviewing and, if appropriate, approving all related party transactions between us and any officer or director that would potentially require disclosure pursuant to the Audit Committee charter. As of the date of this Annual Report on Form 10-K, we expect that any transactions in which related persons have a direct or indirect interest will be presented to the Audit Committee for review and approval. While neither the Audit Committee nor the board have adopted a written policy regarding related party transactions, the Audit Committee makes inquiries to our management and our auditors when reviewing such transactions. Neither we nor the audit committee are aware of any transaction that was required to be reported with the SEC where such policies and procedures either did not require review or were not followed.

Director Independence

Our Board has determined that each of Messrs. Karp, Gissin, Schwarz and Burnham, Ms. Chase and Ms. Carl are independent directors, as prescribed by the listing standards of the NASDAQ Capital Market. In this Annual Report, each of these six directors are referred to individually as an “independent director” and collectively as the “independent directors”. In addition, our Board has determined that each member of our Audit Committee satisfies the applicable audit committee independence standards as prescribed by the listing standards of the NASDAQ Capital Market and Rule 10A-3 under the Exchange Act, and that each member of our Corporate Governance, Nomination and Compensation Committee satisfies the applicable compensation committee member independence standards as prescribed by the listing standards of the NASDAQ Capital Market and Rule 10C-1 under the Exchange Act.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

A summary of the fees of KPMG LLP for the years ended December 31, 2022 and 2021 are set forth below:

	2022 Fees	2021 Fees
Audit Fees (1)	$ 789,000	$ 633,000
Tax Fees (2)	74,000	59,000
All Other Fees (3)	32,000	59,000
Total Fees	$ 895,000	$ 751,000

(1) Consists of fees and expenses for (a) the annual audits of our consolidated financial statements and the accompanying attestation report regarding our ICFR contained in our Annual Report on Form 10-K, (b) the review of quarterly financial information included in our Quarterly Reports on Form 10-Q, and (c) audit services related to mergers and acquisitions.

(2) Consists of fees and expenses for tax compliance and advisory services.

(3) All other services not included in the above.

Audit Committee pre-approval of audit and permissible non-audit services of independent auditors.

The Audit Committee has adopted a pre-approval policy that provides guidelines for the audit, audit-related, tax and other non-audit services that may be provided to us by our independent auditors. Under this policy, the Audit Committee pre-approves all audit and certain permissible accounting and non-audit services performed by the independent auditors. These permissible services are set forth on an attachment to the policy that is updated at least annually and may include audit services, audit-related services, tax services and other services. For audit services, the independent auditor provides the audit committee with an audit plan including proposed fees in advance of the annual audit. The Audit Committee approves the plan and fees for the audit.

With respect to non-audit and accounting services of our independent auditors that are not pre-approved under the policy, the employee making the request must submit the request to our Chief Financial Officer. The request must include a description of the services, the estimated fee, a statement that the services are not prohibited services under the policy and the reason why the employee is requesting our independent auditors to perform the services. If the aggregate fees for such services are estimated to be less than or equal to $50,000, our Chief Financial Officer will submit the request to the chairperson of the audit committee for consideration and approval, and the engagement may commence upon the approval of the chairperson. The chairperson is required to inform the full Audit Committee of the services at its next meeting. If the aggregate fees for such services are estimated to be greater than $50,000, our Chief Financial Officer will submit the request to the full Audit Committee for consideration and approval, generally at its next meeting or special meeting called for the purpose of approving such services. The engagement may only commence upon the approval of full Audit Committee.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this Annual Report on Form 10-K:

1. Financial Statements. The financial statements listed in the accompanying index to consolidated financial statements are filed as part of this Annual Report on Form 10-K.

2. Financial Statement Schedules. Schedules are not submitted because they are not required or are not applicable, or the required information is shown in the consolidated financial statements or notes thereto.

3. Exhibits. The Exhibits listed below are filed or incorporated by reference as part of this Annual Report on Form 10-K. Where so indicated by footnote, exhibits which were previously filed are incorporated by reference. For exhibits incorporated by reference, the location of the exhibit in the previous filing is indicated in the footnotes below.

Exhibit No.	Description
2.1	Stock Purchase Agreement, dated as of January 20, 2017, by and among Tucows Inc., Tucows (Emerald), LLC, Rightside Group, Ltd., Rightside Operating Co. and eNom, Incorporated (Incorporated by reference to Exhibit 2.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on January 23, 2017).
2.2	First Amendment, dated as of June 13, 2017, to Stock Purchase Agreement, dated as of January 20, 2017, by and among Tucows Inc., Tucows (Emerald), LLC, Rightside Group, Ltd., Rightside Operating Co. and eNom, Incorporated (Incorporated by reference to Exhibit 2.3 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on June 15, 2017, 2017).
2.3	Asset Purchase Agreement, dated as of March 18, 2019, by and among Tucows Inc., Ting Fiber, Inc., NetNames European Holdings ApS, NetNames GmbH, CSC Administrative Services Limited UK, Corporation Service Company and Ascio Technologies, Inc. (Incorporated by reference to Exhibit 2.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on March 20, 2019).
3.1.1	Fourth Amended and Restated Articles of Incorporation of Tucows Inc. (Incorporated by reference to Exhibit 3.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on November 29, 2007).
3.1.2	Articles of Amendment to Fourth Amended and Restated Articles of Incorporation of Tucows Inc. (Incorporated by reference to Exhibit 3.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on January 3, 2014).
3.2	Second Amended and Restated Bylaws of Tucows Inc. (Incorporated by reference to Exhibit 3.2 filed with Tucows' Annual Report on Form 10-K for the year ended December 31, 2006, as filed with the SEC on March 29, 2007).
3.3	Amendment No. 1 to Second Amended and Restated Bylaws of Tucows Inc. (Incorporated by Reference to Exhibit 3.3 filed with Tucows' Quarterly Report on Form 10-Q for the quarter ended June 30, 2012).
4.1#	Description of Securities of the Registrant.
10.1*	2006 Equity Compensation Plan, as amended and restated, and approved by Shareholders as of September 8, 2020 (Incorporated by reference to Exhibit 4.1 filed with Tucows form S-8 as filed with the SEC on November 25, 2020).
10.2*	Employment Agreement, dated as of January 22, 2003, by and between Tucows.com Co. and Elliot Noss (Incorporated by reference to Exhibit 10.3 filed with Tucows' Annual Report on Form 10-K for the year ended December 31, 2002, as filed with the SEC on March 28, 2003).
10.3	Lease between 707932 Ontario Limited and Tucows International Corporation, dated as of December 10, 1999 (Incorporated by reference to exhibit number 10.9 filed with Tucows' Annual Report on Form 10-K for the year ended December 31, 2001, as filed with the SEC on April 1, 2002).
10.4	Lease extension between 707932 Ontario Limited and Tucows Inc. and Tucows.com Co., dated as of September 18, 2004 (Incorporated by reference to Exhibit 10.8 filed with Tucows' Annual Report on Form 10-K for the year ended December 31, 2004, as filed with the SEC on March 24, 2005).
10.5	Third Lease Extension and Amending Agreement, dated as of January 1, 2019, by and between 707921 Ontario Limited and Tucows (Delaware) Inc. and Tucows.com Co., (Incorporated by reference to Exhibit 10.5 filed with Tucows' Annual Report on Form 10-K for the year ended December 31, 2019, as filed with the SEC on March 4, 2020).
10.6*	Description of Tucows Fiscal 2004 At Risk Compensation Plan (Incorporated by reference to Exhibit 10.9 filed with Tucows' Annual Report on Form 10-K for the year ended December 31, 2004, as filed with the SEC on March 24, 2005).
10.7	Amended and Restated Senior Secured Credit Agreement, dated as of June 14, 2019, by and among Tucows.com Co., Ting Fiber, Inc., Ting, Inc., Tucows (Delaware) Inc., Tucows (Emerald), LLC, as Borrowers, Tucows, Inc., as parent, Royal Bank of Canada, as Administrative Agent, and Royal Bank of Canada, Bank of Montreal, Bank of Nova Scotia, HSBC Bank Canada and Canadian Imperial Bank of Commerce, as Lenders (Incorporated by reference to Exhibit 10.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on June 18, 2019).

Exhibit No.	Description
10.8	Amending Agreement No. 1, dated as of November 27, 2019, to the Amended and Restated Senior Secured Credit Agreement, dated as of June 14, 2019 (Incorporated by reference to Exhibit 10.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on December 4, 2019).
10.9	Second Amended and Restated Senior Secured Credit Agreement, dated as of October 26, 2021, by and among Tucows.com Co., Ting Fiber, Inc., Ting Inc., Tucows (Delaware) Inc., Tucows (Emerald), LLC, as Borrowers, Tucows Inc. and certain other subsidiaries thereof, as Guarantors, Royal Bank of Canada, as Administrative Agent, and Bank of Montreal, Royal Bank of Canada, The Bank of Nova Scotia, Canadian Imperial Bank of Commerce, HSBC Bank Canada and Toronto Dominion-Bank as Lenders (Incorporated by reference to Exhibit 10.1 filed with Tucows' Current Report on Form 8-K, as filed with the SEC on November 18, 2021).
10.10	Asset Purchase Agreement, dated as of August 1, 2020, by and between Tucows Inc., and DISH WIRELESS L.L.C. (Incorporated by reference to Exhibit 10.1 filed with Tucows' Quarterly Report on Form 10-Q on November 5, 2020).
10.11	Mobile Virtual Network Enabler ("MVNE") Master Services Agreement, dated as of August 1, 2020, by and between Ting Inc., and DISH WIRELESS L.L.C (Incorporated by reference to Exhibit 10.1 filed with Tucows' Quarterly Report on Form 10-Q on November 5, 2020).
10.12	Third Amended and Restated Senior Secured Credit Agreement, dated as of August 8, 2022, by and among Tucows.com Co., Ting Inc., Tucows (Delaware) Inc., Tucows (Emerald), LLC, Wavelo Inc., as Borrowers, Tucows Inc. and certain other subsidiaries thereof, as Guarantors, Royal Bank of Canada, as Administrative Agent, and Bank of Montreal, Royal Bank of Canada, The Bank of Nova Scotia, Canadian Imperial Bank of Commerce, HSBC Bank Canada and Toronto Dominion-Bank as Lenders (Incorporated by reference to Exhibit 10.3 filed with Tucows Quarterly Report on Form 10-Q on November 3, 2022).
10.13	Amending Agreement No. 1 to the Third Amended and Restated Senior Secured Credit Agreement, dated as of November 2, 2022, by and among Tucows.com Co., Ting Inc., Tucows (Delaware) Inc., Tucows (Emerald), LLC, Wavelo, Inc. as Borrowers, Tucows Inc. and certain other subsidiaries thereof, as Guarantors, Royal Bank of Canada, as Administrative Agent, and Bank of Montreal, Royal Bank of Canada, The Bank of Nova Scotia, Canadian Imperial Bank of Commerce, HSBC Bank Canada and Toronto Dominion-Bank as Lenders.
10.14	Amending Agreement No. 2 to the Third Amended and Restated Senior Secured Credit Agreement, dated as of March 14, 2023, by and among Tucows.com Co., Ting Inc., Tucows (Delaware) Inc., Tucows (Emerald), LLC, Wavelo, Inc. as Borrowers, Tucows Inc. and certain other subsidiaries thereof, as Guarantors, Royal Bank of Canada, as Administrative Agent, and Bank of Montreal, Royal Bank of Canada, The Bank of Nova Scotia, Canadian Imperial Bank of Commerce, HSBC Bank Canada and Toronto Dominion-Bank as Lenders.
10.15	Series A Preferred Unit Purchase Agreement, dated as of August 8, 2022, by and among Ting Fiber, LLC, a Delaware limited liability company and Generate TF Holdings, LLC (Incorporated by Reference to Exhibit 10.4 filed with Tucows' Quarterly Report on Form 10-Q on November 3, 2022).
10.16	Wavelo, Inc. 2022 Equity Compensation Plan (September 23, 2022)
10.17	Ting Fiber, LLC 2022 Equity Compensation Plan (December 15, 2022)
21.1#	Subsidiaries of Tucows Inc.
23.1#	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
31.1#	Chief Executive Officer's Rule 13a-14(a)/15d-14(a) Certification.
31.2#	Chief Financial Officer's Rule 13a-14(a)/15d-14(a) Certification.
32.1†	Chief Executive Officer's Section 1350 Certification.
32.2†	Chief Financial Officer's Section 1350 Certification.
101.INS#	Inline XBRL Instance Document (the Instance Document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH#	Inline XBRL Taxonomy Extension Schema
101.CAL#	Inline XBRL Taxonomy Extension Calculation
101.DEF#	Inline XBRL Taxonomy Extension Definition
101.LAB#	Inline XBRL Taxonomy Extension Labels
101.PRE#	Inline XBRL Taxonomy Extension Presentation
104	The cover page from this Annual Report on Form 10-K, formatted as Inline XBRL.

* Management or compensatory contract.
# Filed herewith.
† Furnished herewith.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

INDEX TO FINANCIAL STATEMENTS
Consolidated Financial Statements of Tucows Inc.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Tucows, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Tucows Inc.'s (and subsidiaries'*)* (the Company) internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, because of the effect of the material weakness, described below, on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the *consolidated* balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements, and our report dated March 15, 2023 expressed an unqualified opinion on those *consolidated* financial statements.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. A material weakness related to the operation of internal controls over the capitalization of certain costs has been identified and included in management's assessment. The material weakness was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2022 consolidated financial statements, and this report does not affect our report on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP
Chartered Professional Accountants, Licensed Public Accountants
Vaughan, Canada
March 15, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Tucows, Inc.:

Opinion on the Consolidated *Financial Statements*

We have audited the accompanying consolidated balance sheets of Tucows, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 15, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion
These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Evaluation of sufficiency of audit evidence over revenue

As discussed in Note 10 to the consolidated financial statements, the Company's revenues are derived from (a) the provisioning of retail fiber internet services, through Ting, (b) the CSP solutions and professional services through Wavelo; and from (c) domain name registration contracts, other domain related value-added services, domain sale contracts, and other advertising revenue through Tucows Domains Services. The Company earned $321,142 thousand in revenues for the year ended December 31, 2022, of which $243,158 thousand were generated in the Tucows Domains segment, $42,425 thousand in the Ting Segment, $24,344 thousand in the Wavelo segment and $11,215 thousand in Tucows Corporate segment.

We identified the evaluation of the sufficiency of audit evidence over revenue as a critical audit matter. This matter required especially subjective auditor judgment because of the multiple revenue streams, the related revenue recognition processes, and the number of information technology (IT) applications involved. This included determining the nature and extent of audit evidence obtained over each selected revenue stream, and the need to involve information technology professionals with specialized skills and knowledge to assist with the performance of certain procedures.

The following are the primary procedures we performed to address this critical audit matter. For each revenue stream we selected, we evaluated the design and tested the operating effectiveness of certain internal controls related to the processing and recording of revenue. We assessed the recorded revenue by selecting a sample of transactions and comparing the amounts recognized to underlying systems, records and/or other relevant and reliable third party data. We involved IT professionals with specialized skills and knowledge to assist in the testing of certain IT systems and related controls and reports that are used by the Company in its revenue recognition process. We evaluated the sufficiency of the audit evidence obtained over revenue by assessing the results of procedures performed.

/s/ KPMG LLP
Chartered Professional Accountants, Licensed Public Accountants
We have served as the Company's auditor since 2001.
Vaughan, Canada
March 15, 2023

Tucows Inc.

Consolidated Balance Sheets
(Dollar amounts in thousands of U.S. dollars)

	December 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 23,496	$ 9,105
Accounts receivable, net of allowance for doubtful accounts of $693 as of December 31, 2022 and $541 as of December 31, 2021	18,404	14,579
Contract asset, current portion	5,159	778
Inventory	7,284	3,277
Prepaid expenses and deposits	17,005	20,986
Derivative instrument asset, current portion (note 7)	1,903	299
Deferred costs of fulfillment, current portion (note 11 (b))	94,198	94,506
Income taxes recoverable	2,471	3,474
Total current assets	169,920	147,004
Contract asset, long-term portion (note 10)	2,328	-
Deferred costs of fulfillment, long-term portion (note 11(b))	16,476	18,205
Derivative instrument asset, long-term portion (note 7)	-	278
Investments	2,012	2,012
Deferred tax asset	-	22
Property and equipment (note 4)	281,495	172,662
Right of use operating lease asset	20,489	17,515
Contract costs	1,827	1,079
Intangible assets (note 5)	39,790	50,409
Goodwill (note 5)	130,410	130,410
Total assets	$ 664,747	$ 539,596
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 17,171	$ 10,016
Accrued liabilities	22,653	15,240
Customer deposits	15,783	16,974
Derivative instrument liability, current portion (note 7)	389	125
Operating lease liability, current portion (note 12)	4,642	3,150
Deferred revenue, current portion (note 10)	122,894	124,116
Accreditation fees payable, current portion	809	882
Income taxes payable	2,248	102
Other current liabilities	1,600	3,078
Total current liabilities	188,189	173,683
Deferred revenue, long-term portion (note 10)	22,237	23,677
Accreditation fees payable, long-term portion	142	170
Operating lease liability, long-term portion (note 12)	12,438	11,853
Loan payable, long-term portion (note 8)	238,930	190,748
Redeemable preferred shares (note 13)	90,434	-
Other long-term liability (note 3 (a))	-	1,804
Deferred tax liability (note 9)	15,720	22,569
Stockholders' equity (note 14)		
Common stock - no par value, 250,000,000 shares authorized; 10,817,110 shares issued and outstanding as of December 31, 2022 and 10,747,417 shares issued and outstanding as of December 31, 2021	31,868	28,515
Additional paid-in capital	8,106	2,764
Retained earnings	55,899	83,470
Accumulated other comprehensive income (loss) (note 7)	784	343
Total stockholders' equity	96,657	115,092
Total liabilities and stockholders' equity	$ 664,747	$ 539,596
Commitments and contingencies (note 19)		
Subsequent events (note 21)		

See accompanying notes to consolidated financial statements

Tucows Inc.

Consolidated Statements of Comprehensive Income
(Dollar amounts in thousands of U.S. dollars, except per share amounts)

	Year ended December 31, 2022	2021	2020
Net revenues (note 10)	$ 321,142	$ 304,337	$ 311,202
Cost of revenues (note 10)			
Cost of revenues	196,268	193,039	200,401
Network expenses	17,433	14,769	10,194
Depreciation of property and equipment (note 4)	27,589	17,452	12,144
Amortization of intangible assets (note 5)	1,512	583	1,340
Impairment of property and equipment (note 4)	92	201	1,638
Total cost of revenues	242,894	226,044	225,717
Gross profit	78,248	78,293	85,485
Expenses:			
Sales and marketing	53,937	39,471	34,274
Technical operations and development	14,187	14,310	12,427
General and administrative	30,845	22,370	20,268
Depreciation of property and equipment (note 4)	598	534	488
Loss (gain) on disposition of property and equipment	461	234	(17)
Amortization of intangible assets (note 5)	9,882	9,424	10,080
Impairment of definite life intangible assets (note 5)	-	-	1,431
Gain on currency forward contracts (note 7)	-	(277)	(383)
Total expenses	109,910	86,066	78,568
Income from operations	(31,662)	(7,773)	6,917
Other income (expenses):			
Interest expense, net	(14,456)	(4,617)	(3,611)
Income earned on sale of transferred assets, net (note 17)	18,507	20,030	7,612
Other expense, net	(177)	(370)	(158)
Total other income (expenses)	3,874	15,043	3,843
Income before provision for income taxes	(27,788)	7,270	10,760
Provision for income taxes (note 9)	(217)	3,906	4,985
Net income (loss) for the period	(27,571)	3,364	5,775
Other comprehensive income, net of tax			
Unrealized income (loss) on hedging activities (note 7)	418	572	1,653
Net amount reclassified to earnings (note 7)	23	(2,565)	210
Other comprehensive income (loss) net of tax expense (recovery) of $141, ($595) and $550 for the years ended December 31, 2022, 2021 and 2020 (note 7)	441	(1,993)	1,863
Comprehensive income (loss), net of tax for the period	$ (27,130)	$ 1,371	$ 7,638
Basic earnings per common share (note 18)	$ (2.56)	$ 0.32	$ 0.55
Shares used in computing basic earnings per common share (note 18)	10,769,280	10,662,337	10,590,684
Diluted earnings per common share (note 18)	$ (2.56)	$ 0.31	$ 0.54
Shares used in computing diluted earnings per common share (note 18)	10,769,280	10,817,468	10,692,281

See accompanying notes to consolidated financial statements

Tucows Inc.

Consolidated Statements of Stockholders' Equity
(Dollar amounts in thousands of U.S. dollars)

	Common stock		Additional paid in capital	Retained earnings	Accumulated other comprehensive income (loss)	Total stockholders' equity
	Number	Amount				
Balances, December 31, 2019	10,585,159	16,633	880	76,208	473	94,194
Exercise of stock options	113,132	2,290	(1,305)	-	-	985
Shares deducted from exercise of stock options for payment of withholding taxes and exercise consideration	(48,013)	-	(556)	-	-	(556)
Repurchase and retirement of shares (note 14(a))	(70,238)	(125)	(1,279)	(1,877)	-	(3,281)
Acquisition of Cedar Networks (note 3 (a))	32,374	2,000	-	-	-	2,000
Stock-based compensation (note 15)	-	-	3,718	-	-	3,718
Net income	-	-	-	5,775	-	5,775
Other comprehensive income (loss) (note 7)	-	-	-	-	1,863	1,863
Balances, December 31, 2020	10,612,414	20,798	1,458	80,106	2,336	104,698
Exercise of stock options	180,827	7,588	(2,770)	-	-	4,818
Shares deducted from exercise of stock options for payment of withholding taxes and exercise consideration	(45,824)	-	(387)	-	-	(387)
Stock-based compensation (note 15)	-	129	4,463	-	-	4,592
Net income	-	-	-	3,364	-	3,364
Other comprehensive income (loss) (note 7)	-	-	-	-	(1,993)	(1,993)
Balances, December 31, 2021	10,747,417	28,515	2,764	83,470	343	115,092
Exercise of stock options	40,459	1,593	(497)			1,096
Shares deducted from exercise of stock options for payment of withholding taxes and exercise consideration	(3,053)					-
Stock-based compensation (note 15)	32,287	1,760	5,839			7,599
Net income				(27,571)		(27,571)
Other comprehensive income (loss) (note 7)					441	441
Balances, December 31, 2022	10,817,110	31,868	8,106	55,899	784	96,657

See accompanying notes to consolidated financial statements

Tucows Inc.

Consolidated Statements of Cash Flows
(Dollar amounts in thousands of U.S. dollars)

	Year ended December 31, 2022	2021	2020
Cash provided by:			
Operating activities:			
Net income (loss) for the period	$ (27,571)	$ 3,364	$ 5,775
Items not involving cash:			
Depreciation of property and equipment	28,187	17,986	12,632
Impairment of property and equipment	92	201	1,638
Amortization of debt discount and issuance costs	685	300	269
Amortization of intangible assets	11,394	10,007	11,420
Net amortization contract costs	(748)	(717)	106
Accretion of contingent consideration	248	383	344
Other	-	-	223
Impairment of definite life intangible asset	-	-	1,431
Deferred income taxes (recovery)	(6,981)	(1,328)	(3,939)
Excess tax benefits on share-based compensation expense	(193)	(1,554)	(861)
Net Right of use operating assets/Operating lease liability	(897)	(2,204)	205
Loss on disposal of domain names	7	1	17
Accretion of redeemable preferred shares	3,896	-	-
Loss (gain) on change in the fair value of forward contracts	281	606	(500)
Amortization of discontinued cash flow hedge from Accumulated other income	(761)	-	-
Write-down on disposal of Ting Mobile customer assets and contract costs	-	-	3,513
Stock-based compensation	7,599	4,592	3,718
Remeasurement of contingent consideration	(400)	-	-
Change in non-cash operating working capital:			
Accounts receivable	(3,825)	1,586	(281)
Contract assets	(6,709)	(778)	-
Inventory	(4,007)	(787)	945
Prepaid expenses and deposits	3,981	(3,974)	(3,459)
Deferred costs of fulfillment	2,037	(1,645)	(1,899)
Income taxes recoverable	3,355	(1,394)	908
Accounts payable	6,754	4,068	(902)
Accrued liabilities	7,411	4,857	376
Customer deposits	(1,191)	645	1,493
Deferred revenue	(2,667)	(4,495)	2,942
Accreditation fees payable	(101)	(83)	(33)
Net cash provided by (used in) operating activities	19,876	29,637	36,081
Financing activities:			
Proceeds received on exercise of stock options	1,096	4,818	985
Proceeds from redeemable preferred shares	87,500	-	-
Deferred Preferred Financing Costs	(1,016)	-	-
Payment of tax obligations resulting from net exercise of stock options	-	(387)	(556)
Repurchase of common stock	-	-	(3,281)
Proceeds received on loan payable	48,300	69,000	8,000
Payment of loan payable costs	(748)	(296)	(32)
Contingent consideration for acquisitions	(3,125)	-	-
Net cash (used in) provided by financing activities	132,007	73,135	5,116
Investing activities:			
Additions to property and equipment	(136,710)	(73,175)	(44,437)
Proceeds on disposal of property and equipment	-	510	-
Acquisition of Cedar Holdings Group, net of cash of $66 (note 3(a))	-	-	(8,770)
Acquisition of Uniregistry, (note 3(b))	-	(2,499)	-
Acquisition of Simply Bits, net of cash of $801 (note 3(c))	-	(24,028)	-
Acquisition of other intangible assets	(782)	(774)	(72)
Investment in securities	-	(2,012)	-
Net cash used in investing activities	(137,492)	(101,978)	(53,279)
Increase (decrease) in cash and cash equivalents	14,391	794	(12,082)
Cash and cash equivalents, beginning of period	9,105	8,311	20,393
Cash and cash equivalents, end of period	$ 23,496	$ 9,105	$ 8,311
Supplemental cash flow information:			
Interest paid	$ 10,289	$ 4,485	$ 3,573
Income taxes paid, net	$ 3,883	$ 8,828	$ 8,926
Supplementary disclosure of non-cash investing and financing activities:			
Property and equipment acquired during the period not yet paid for	$ 501	$ 99	$ 1,129
Fair value of shares issued for acquisition of Cedar Holdings Group	$ -	$ -	$ 2,000
Fair value of contingent consideration for acquisition of Cedar Holdings Group	$ -	$ -	$ 3,072

See accompanying notes to consolidated financial statements

Tucows Inc.

Notes to Consolidated Financial Statements
(Dollar amounts in thousands of U.S. dollars, except per share amounts)

1. Organization of the Company:

Tucows Inc. (referred to throughout this report as the “Company”, “Tucows”, “we”, “us” or through similar expressions) provides simple useful services that help people unlock the power of the Internet. The Company provides US consumers and small businesses with high-speed fixed Internet access in selected towns. The Company also offers platform services which provide solutions to support Communication Service Providers ("CSPs") including subscription and billing management, network orchestration and provisioning, individual developer tools, and other professional services. The Company is also a global distributor of Internet services, including domain name registration, digital certificates, and email. It provides these services primarily through a global Internet-based distribution network of Internet Service Providers, web hosting companies and other providers of Internet services to end-users.

2. Significant Accounting Policies:

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”) and are stated in U.S. dollars, except where otherwise noted.

(a) Basis of presentation

These consolidated financial statements include the accounts of the Company and its subsidiaries. All significant intercompany balances and transactions have been eliminated on consolidation.

(b) Use of estimates

The preparation of the consolidated financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, management evaluates its judgements and estimates, including those related to the allocation of MONOS platform service consideration between multiple performance obligations, the recoverability of goodwill and intangible assets which requires judgement over qualitative indicators of impairment and loss contingencies. For acquired customer relationships, the Company estimates the fair value based on the income approach. The income approach is a valuation technique that calculates the fair value of an intangible asset based on the present value of future cash flows expected to be generated over the remaining useful life of the asset. This valuation involves significant subjectivity and estimation uncertainty, including assumptions related to future revenues attributable to acquired customer relationships, attrition rates and discount rates. Management bases its estimates on historical experience, available market information as applicable, and on various other assumptions that are believed to be reasonable under the circumstances at the time they are made. Under different assumptions or conditions, the actual results will differ, potentially materially, from those previously estimated. Many of the conditions impacting these assumptions and estimates are outside of the Company’s control.

(c) Cash and cash equivalents

All highly liquid investments, with an original term to maturity of three months or less are classified as cash and cash equivalents. Cash and cash equivalents are stated at cost which approximates market value.

(d) Inventory

Inventory primarily consists of Internet optical network terminals and customer installation equipment. All inventory is stated at the lower of cost or net realizable value. Cost is determined based on actual cost of the mobile device, accessory shipped or optical network terminals.

The net realizable value of inventory is analyzed on a regular basis. This analysis includes assessing obsolescence, sales forecasts, product life cycle, marketplace and other considerations. If assessments regarding the above factors adversely change, we may be required to write down the value of inventory.

(e) Property and equipment

Property and equipment are stated at cost, net of accumulated depreciation. Depreciation is provided on a straight-line basis so as to depreciate the cost of depreciable assets over their estimated useful lives at the following rates:

	Rate
Asset	
Computer equipment	30%
Computer software	33 1/3 - 100%
Furniture and equipment	20%
Vehicles and tools	20%
Fiber network (years)	15
Customer equipment and installations (years)	3
Leasehold improvements	Over term of lease
Capitalized internal use software (years)	3 - 7

The Company reviews the carrying values of its property and equipment for potential impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If the estimated undiscounted future cash flows expected to result from the use of the group of assets and their eventual disposition is less than their carrying amount, they are considered to be impaired. The amount of the impairment loss recognized is measured as the amount by which the carrying value of the asset exceeds the fair value of the asset, with fair value being determined based upon discounted cash flows or appraised values, depending on the nature of the assets.

Additions to the fiber network are recorded at cost, including all material, labor, vehicle and installation and construction costs and certain indirect costs associated with the construction of cable transmission and distribution facilities. While the Company's capitalization is based on specific activities, once capitalized, costs are tracked by fixed asset category at the fiber network level and not on a specific asset basis. For assets that are retired, the estimated historical cost and related accumulated depreciation is removed.

Additions to land are recorded at cost, and include any direct costs associated with the purchase, as well as any direct costs incurred to bring it to the condition necessary for its intended use, such as legal fees associated with the acquisition and the cost of permanent improvements. Land is not depreciated.

We capitalize costs for software to be used internally when we enter the application development stage. This occurs when we complete the preliminary project stage, management authorizes and commits to funding the project, and it is feasible that the project will be completed and the software will perform the intended function. We cease to capitalize costs related to a software project when it enters the post implementation and operation stage.

Costs capitalized during the application development stage consist of payroll and related costs for employees who are directly associated with, and who devote time directly to, a project to develop software for internal use. External contractor costs who are directly associated with, and who devote time directly to, a project to develop software for internal use are also capitalized. Generally, we do not capitalize any general and administrative or overhead costs or costs incurred during the application development stage related to research and development, training or data conversion costs. Research and development costs and data conversion costs may be capitalized as Costs to fulfill a contract, if they relate to a specific professional services customer contract (see Note 11 - Costs to obtain and fulfill a contract). Costs related to upgrades and enhancements to internal-use software, if those upgrades and enhancements result in additional functionality, are capitalized. If upgrades and enhancements do not result in additional functionality, those costs are expensed as incurred.

The capitalized software development costs are generally to be amortized using the straight-line method over a 3 to 7-year period. In determining and reassessing the estimated useful life over which the cost incurred for the software should be amortized, we consider the effects of obsolescence, technology, competition and other economic factors.

(f) Derivative Financial Instruments

The Company uses derivative financial instruments to manage foreign currency exchange risk. The Company also uses pay-fixed, receive-variable interest rate swap with a Canadian chartered bank to limit the potential interest rate fluctuations incurred on its future cash flows related to variable interest payments on the Credit facility.

The Company accounts for these instruments in accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 815, "Derivatives and Hedging" ("Topic 815"), which requires that every derivative instrument be recorded on the balance sheet as either an asset or liability measured at its fair value as of the reporting date. Topic 815 also requires that changes in our derivative financial instruments' fair values be recognized in earnings, unless specific hedge accounting and documentation criteria are met (i.e., the instruments are accounted for as hedges). The Company recorded the effective portions of the gain or loss on derivative financial instruments that were designated as cash flow hedges in accumulated other comprehensive income in our accompanying Consolidated Balance Sheets.

For certain foreign currency contracts, the Company has not complied with the documentation standards required for its forward foreign exchange contracts to be accounted for as hedges and has, therefore, accounted for such forward foreign exchange contracts at their fair values with the changes in fair value recorded in net income.

The fair value of the forward exchange contracts is determined using an estimated credit adjusted mark-to-market valuation which takes into consideration the Company's and the counterparty's credit risk. The valuation technique used to measure the fair values of the derivative instruments is a discounted cash flow technique, with all significant inputs derived from or corroborated by observable market data, as no quoted market prices exist for the derivative instruments. The discounted cash flow techniques use observable market inputs, such as foreign currency spot, SOFR rates, forward currency and interest rates.

(g) Goodwill and Other Intangible assets

Goodwill

Goodwill represents the excess of purchase price over the fair values assigned to the net assets acquired in business combinations. The Company does not amortize goodwill. Impairment testing for goodwill is performed annually in the fourth quarter of each year or more frequently if impairment indicators are present. Impairment testing is performed at the operating segment level. The Company has determined that it has three operating segments, Ting, Wavelo and Tucows Domains .

The Company performs a qualitative assessment to determine whether there are events or circumstances which would lead to a determination that it is more likely than not that goodwill has been impaired. If, after this qualitative assessment, the Company determines that it is not more likely than not that goodwill has been impaired, then no further quantitative testing is necessary. In performance of the qualitative test, an evaluation is made of the impact of various factors to the expected future cash flows attributable to its operating segments and to the assumed discount rate which would be used to present value those cash flows. Consideration is given to factors such as macro-economic, industry and market conditions including the capital markets, the competitive environment, in addition to other internal factors including changes to our market capitalization, cash inflows, obligations and access to capital of our segments . In the event that the qualitative tests indicate that there may be impairment, quantitative impairment testing is required.

If required to perform the quantitative test, the Company uses a discounted cash flow or income approach in which future expected cash flows at the operating segment level are converted to present value using factors that consider the timing and risk of the future cash flows. The estimate of cash flows used is prepared on an unleveraged debt-free basis. The discount rate reflects a market-derived weighted average cost of capital. The Company believes that this approach is appropriate because it provides a fair value estimate based upon the Company’s expected long-term operating and cash flow performance for its operating segment. The projections are based upon the Company’s best estimates of projected economic and market conditions over the related period including growth rates, estimates of future expected changes in operating margins and cash expenditures.

Other significant estimates and assumptions include terminal value growth rates, terminal value margin rates, future capital expenditures and changes in future working capital. If assumptions and estimates used to allocate the purchase price or used to assess impairment prove to be inaccurate, future asset impairment charges could be required.

Intangibles Assets Not Subject to Amortization

Intangible assets not subject to amortization consist of surname domain names and direct navigation domain names. While the domain names are renewed annually, through payment of a renewal fee to the applicable registry, the Company has the exclusive right to renew these names at its option. Renewals occur routinely and at a nominal cost. Moreover, the Company has determined that there are currently no legal, regulatory, contractual, economic or other factors that limit the useful life of these domain names on an aggregate basis and accordingly treat the portfolio of domain names as indefinite life intangible assets. The Company re-evaluates the useful life determination for domain names in the portfolio each year to determine whether events and circumstances continue to support an indefinite useful life.

The Company reviews individual domain names in the portfolio for potential impairment throughout the fiscal year in determining whether a particular name should be renewed. Impairment is recognized for names that are not renewed.

Intangible Assets Subject to Amortization

Intangible assets subject to amortization, consist of brand, customer relationships, technology and network rights and are amortized on a straight-line basis over their estimated useful lives as follows:

	(in years)
Technology	2 - 7
Brand	7
Customer relationships	3 - 7
Network rights	15

The Company continually evaluates whether events or circumstances have occurred that indicate the remaining estimated useful lives of its intangible assets subject to amortization may warrant revision or that the remaining balance of such assets may not be recoverable. The Company uses an estimate of the related undiscounted cash flows over the remaining life of the asset in measuring whether the asset is recoverable.

(h) Revenue recognition

See "Note 10 – Revenue" for a description of the Company's revenue recognition policy and a further description of the principal activities – separated by reportable segments – from which the Company generates its revenue.

(i) Contract balances

The Company accounts for contract assets and liabilities (deferred revenue) on a contract-by-contract basis, with each contract presented as either a net contract asset or a net contract liability accordingly. Contract assets are recorded for services delivered under contracts, to the extent that the services delivered exceed the services which have been billed to the customer at the reporting date. Contract assets are transferred to receivables when the rights to consideration become unconditional. Contract assets primarily relate to long-term mobile platform services contracts. Deferred revenue primarily relates to the unearned portion of revenues received in advance related to the unexpired term of registration fees from domain name registrations and other domain related Internet services, on both a wholesale and retail basis, net of external commissions. To a lesser extent, deferred revenue also includes a portion of the transaction price received from other professional services.

(j) Contract Costs

See "Note 11 – Costs to obtain and fulfill a contract" for a description of the Company's contract cost recognition policy.

(k) Contract Modifications

Contracts may be amended to account for changes in contract specifications and requirements. Contract modifications exist when the amendment either creates new, or changes existing, enforceable rights and obligations. When contract modifications create new performance obligations and the increase in consideration approximates the standalone selling price for services related to such new performance obligations as adjusted for specific facts and circumstances of the contract, the modification is considered to be a separate contract. If a contract modification is not accounted for as a separate contract, the Company accounts for the promised services not yet transferred at the date of the contract modification (the remaining promised services) prospectively, as if it were a termination of the existing contract and the creation of a new contract, if the remaining services are distinct from the services transferred on or before the date of the contract modification. The Company accounts for a contract modification as if it were a part of the existing contract if the remaining services are not distinct and, therefore, form part of a single performance obligation that is partially satisfied at the date of the contract modification. In such case the effect that the contract modification has on the transaction price, and on the entity's measure of progress toward complete satisfaction of the performance obligation, is recognized as an adjustment to revenue (either as an increase in or a reduction of revenue) at the date of the contract modification (the adjustment to revenue is made on a cumulative catch-up basis).

(l) Leases

Under ASC 842, we determine if an arrangement is a lease at inception. Our lease agreements generally contain lease and non-lease components. Payments under our lease arrangements are primarily fixed. Non-lease components primarily include payments for maintenance and utilities. We combine fixed payments for non-lease components with lease payments and account for them together as a single lease component which increases the amount of our lease assets and liabilities.

Certain lease agreements contain variable payments, which are expensed as incurred and not included in the lease assets and liabilities. These amounts include payments affected by payments contingent on the number of Ting internet subscribers connected to a leased fiber network, and payments for maintenance and utilities.

We have elected to consider leases with a term of 12 months or less as short-term, and as such these have not been recognized on the balance sheet. We recognize lease expense for short-term leases on a straight-line basis over the lease term.

Lease assets and liabilities are recognized at the present value of the future lease payments at the lease commencement date. The interest rate used to determine the present value of the future lease payments is our incremental borrowing rate, because the interest rate implicit in our leases is not readily determinable. Our incremental borrowing rate is estimated to approximate the interest rate on a collateralized basis with similar terms and payments, and in economic environments where the leased asset is located. Our lease terms include periods under options to extend or terminate the lease when it is reasonably certain that we will exercise that option. We generally use the base, non-cancelable, lease term when determining the lease assets and liabilities. Lease assets also include any prepaid lease payments.

Operating lease expense is recognized on a straight-line basis over the lease term.

(m) Accreditation fees payable

In accordance with ICANN rules, the Company has elected to pay ICANN fees incurred on the registration of Generic Top-Level Domains on an annual basis. Accordingly, accreditation fees that relate to registrations completed prior to ICANN rendering a bill are accrued and reflected as accreditation fees payable.

(n) Translation of foreign currency transactions

The Company's functional currency is the United States dollar. Monetary assets and liabilities of the Company and of its wholly owned subsidiaries that are denominated in foreign currencies are translated into United States dollars at the exchange rates prevailing at the balance sheet dates. Non-monetary assets and liabilities are translated at the historical exchange rates. Transactions included in operations are translated at the rate at the date of the transactions.

(o) Income taxes

Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss carry forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in net income in the year that includes the enactment date. A valuation allowance is recorded if it is not likely that a deferred tax asset will be realized.

The Company recognizes the impact of an uncertain income tax position at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority and includes consideration of interest and penalties. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. The liability for unrecognized tax benefits is classified as non-current unless the liability is expected to be settled in cash within 12 months of the reporting date.

(p) Redeemable preferred shares

See "Note 13 - Redeemable preferred shares" for the description and treatment of the Company's Series A Preferred Unit Purchase Agreement.

(q) Stock-based compensation

Stock-based compensation expense recognized during the period is based on the value of the portion of stock-based payment awards that is ultimately expected to vest, reduced for estimated forfeitures. The Company recognizes stock based compensation for both public company stock and private subsidiary stock - see "Note 15. Stock Option Plans."

(r) Earnings per common share

Basic earnings per common share has been calculated on the basis of net income for the year divided by the weighted average number of common shares outstanding during each year. Diluted earnings per share gives effect to all dilutive potential common shares outstanding at the end of the year assuming that they had been issued, converted or exercised at the later of the beginning of the year or their date of issuance. In computing diluted earnings per share, the treasury stock method is used to determine the number of shares assumed to be purchased from the conversion of common share equivalents or the proceeds of the exercise of options.

(s) Concentration of credit risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash equivalents, accounts receivable, forward foreign exchange contracts and pay-fixed, receive-variable interest rate swap contracts. Cash equivalents consist of deposits with major commercial banks, the maturities of which are three months or less from the date of purchase. With respect to accounts receivable, the Company performs periodic credit evaluations of the financial condition of its customers and typically does not require collateral from them. The counterparty to any forward foreign exchange contracts is a major commercial bank which management believes does not represent a significant credit risk. Management assesses the need for allowances for potential credit losses by considering the credit risk of specific customers, historical trends and other information.

(t) Fair value measurement

Fair value of financial assets and liabilities is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The three-tier hierarchy for inputs used in measuring fair value, which prioritizes the inputs used in the methodologies of measuring fair value for assets and liabilities, is as follows:

Level 1—Quoted prices in active markets for identical assets or liabilities
Level 2—Observable inputs other than quoted prices in active markets for identical assets and liabilities
Level 3—No observable pricing inputs in the market

Financial assets and financial liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurements. Our assessment of the significance of a particular input to the fair value measurements requires judgment, and may affect the valuation of the assets and liabilities being measured and their placement within the fair value hierarchy.

The fair value of cash and cash equivalents, accounts receivable, accounts payable, accreditation fees payable, customer deposits and accrued liabilities (level 2 measurements) approximate their carrying values due to the relatively short periods to maturity of the instruments.

The fair value of the derivative financial instruments is determined using an estimated credit-adjusted mark-to-market valuation (a level 2 measurement) which takes into consideration the Company and the counterparty credit risk.

(u) Investments

The Company accounts for investment in entities over which it has the ability to exert significant influence, but does not control and is not the primary beneficiary of, using the equity method of accounting. The Company includes the proportionate share of earnings (loss) of the equity method investees in Other Income in the Consolidated Statements of Comprehensive Income. The proportional shares of affiliate earnings or losses accounted for under the equity method of accounting were not material for all periods presented. Equity investments without readily determinable fair value include ownership rights that do not provide the Company with control or significant influence. Such equity investments are recorded at cost, less any impairment, and adjusted for subsequent observable price changes as of the date that an observable transaction takes place. Subsequent adjustments are recorded in other income (expense), net.

(v) Segment reporting

The Company operates in three operating segments, Ting, Wavelo and Tucows Domains. No operating segments have been aggregated to determine our reportable segments.

Our reportable operating segments and their principal activities consist of the following:

Ting	This segment derives revenue from the retail high speed Internet access to individuals and small businesses primarily through the Ting website. Revenues are generated in the United States
Wavelo	This segment derives revenue from platform and other professional services related to communication service providers, including Mobile Network Operators and Internet Service Providers, and are primarily generated in the United States.
Tucows Domains	This segment includes wholesale and retail domain name registration services and value added services. The Company primarily earns revenues from the registration fees charged to resellers in connection with new, renewed and transferred domain name registrations; the sale of retail Internet domain name registration and email services to individuals and small businesses. Domain Services revenues are attributed to the country in which the contract originates, primarily Canada and the United States.

Our segmented results include shared services allocations, including a profit margin, from Tucows Corporate for Finance, Human Resources and other technical services, to the operating units. In addition, Wavelo charges Ting a subscriber based monthly charge services rendered. Financial impacts from these allocations and cross segment charges are eliminated as part of the Tucows Corporate results.

The Company's assets are primarily located in Canada, the United States and Europe.

(w) Recent Accounting Pronouncements

Recent Accounting Pronouncements Adopted

None.

Recent Accounting Pronouncements Not Yet Adopted

None.

3. Acquisitions:

(a) Cedar

In the fourth quarter of 2019, the Company entered into a Stock Purchase Agreement to purchase all of the issued and outstanding shares of Cedar Holdings Group, Incorporated ("Cedar"), a fiber Internet provider business based in Durango, Colorado. The transaction closed on January 1, 2020, following receipt of all regulatory approvals. The purchase price was $14.1 million, less a purchase price adjustment of approximately $0.2 million relating to a working capital deficit and the estimated fair value of contingent consideration, for net purchase consideration of $13.9 million. In addition to $9.0 million cash consideration due at closing, the Company also issued 32,374 ($2.0 million) of Tucows Inc. shares with a two-year restriction period at closing. Included in the agreement was contingent consideration totaling up to $4.0 million, with was due on the 24th and 36th month anniversaries of the closing of the transaction dependent upon the achievement of certain milestones as defined in the Share Purchase Agreement. In December of 2022, the Company notified the seller that pursuant to the agreement it would withhold $0.4 million from the final payment to indemnify the Company against tax liabilities related to periods prior to the closing date. The fair value of the contingent consideration was determined to be $3.1 million using a discount rate of 11.2%. On January 3, 2023, the Company paid $1.6 million in relation to the 36th month anniversary contingent payment.

The amortization period for the customer relationships and network rights are 7 and 15 years, respectively.

(b) Uniregistry

On October 1, 2021, the Company acquired the domain registry related assets of UNR Corp., UNR Inc. and Uni Naming and Registry Ltd. (each a seller and collectively "UNR"). The purchase price was $3.0 million, less a purchase price adjustment of approximately $0.5 million relating to a working capital deficit, for net purchase consideration of $2.5 million.

Cash Consideration, including working capital adjustment	$	2,499
Total purchase price		**2,499**
Accounts Receivables, net		538
Other current assets		23
Technology		3,039
Total identifiable assets		3,600
Accounts payable and accrued labilities		1,101
Total liabilities assumed		1,101
Total net assets (liabilities) assumed		2,499
Total goodwill	**$**	**-**

The technology assets acquired are amortized over periods of 5 - 7 years.

(c) Simply Bits

On November 8, 2021, the Company acquired 100% of Simply Bits, LLC via an Agreement and Plan of Merger with one of our wholly owned subsidiaries. The purchase price was $25.0 million, plus a purchase price adjustment of approximately $0.8 million relating to a working capital surplus and the estimated fair value of contingent consideration, for net purchase consideration of $25.8 million. Included in the agreement was contingent consideration totaled up to $1.0 million, which was due 60 days from December 31, 2021 and was paid in 2022.

Cash Consideration, including working capital adjustment	$ 24,829
Fair value of contingent payments	953
Total purchase price	25,782
Cash and Cash Equivalents	801
Accounts Receivables, net	87
Other current assets	759
Property and equipment	1,684
Right of use operating lease	1,804
Customer relationships	9,160
Total identifiable assets	14,295
Accounts payable and accrued labilities	307
Deferred tax liability	20
Operating lease liability	1,794
Other liabilities	498
Total liabilities assumed	2,619
Total net assets (liabilities) assumed	11,676
Total goodwill	**$ 14,106**

The amortization period for the customer relationships is 7 years.

4. Property and Equipment:

Property and equipment consist of the following (Dollar amounts in thousands of U.S. dollars):

	December 31, 2022	December 31, 2021
Computer equipment	$ 43,440	$ 34,465
Computer software	1,935	1,921
Capitalized internal use software	25,172	10,660
Furniture and equipment	1,708	1,418
Vehicles and tools	9,144	6,569
Fiber network	168,587	109,500
Customer equipment and installations	36,382	22,027
Land	1,109	1,123
Buildings	8,864	9,096
Assets under construction	62,588	29,414
Leasehold improvements	624	548
	359,553	226,741
Less:		
Accumulated depreciation	78,058	54,079
	$ 281,495	$ 172,662

Depreciation of property and equipment (Dollar amounts in thousands of U.S. dollars):

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Depreciation of property and equipment	$ 28,187	$ 17,986	$ 12,632

During the year ended December 31, 2022, property, plant and equipment with a net book value of $0.1 million was written off and included in impairment of property and equipment in the consolidated statement of comprehensive income.

During the year ended December 31, 2021, property, plant and equipment with a net book value of $0.2 million was written off and included in impairment of property and equipment in the consolidated statement of comprehensive income.

During the year ended December 31, 2020, property, plant and equipment with a net book value of $1.6 million related to Ting TV, a product under development for Ting was written off and included in impairment of property and equipment in the consolidated statement of comprehensive income.

5. Goodwill and Other Intangible Assets

Goodwill

Goodwill represents the excess of the purchase price over the fair value of tangible and identifiable intangible assets acquired and liabilities assumed in our acquisitions.

Goodwill consists of the following (Dollar amounts in thousands of U.S. dollars):

	Ting	Wavelo	Tucows Domains	Total
Balances, December 31, 2020	$ 8,618	$ -	$ 107,686	$ 116,304
Simply Bits, LLC acquisition	14,106	-	-	14,106
Balances, December 31, 2021	$ 22,724	$ -	$ 107,686	$ 130,410
Balances, December 31, 2022	$ 22,724	$ -	$ 107,686	$ 130,410

The Company's Goodwill balance is $130.4 million as of December 31, 2022 and $130.4 million as of December 31, 2021. The Company's goodwill relates 83% ($107.7 million) to its Tucows Domains operating segment and 17% ($22.7 million) to its Ting operating segment.

Goodwill is not amortized, but is subject to an annual impairment test. The Company performed an impairment analysis as outlined in "Note 2(g) – Significant Accounting Policies" and there were no indications of impairment for Fiscal 2022 and Fiscal 2021.

Other Intangible Assets:

Intangible assets consist of acquired brand, technology, customer relationships, surname domain names, direct navigation domain names and network rights. The Company considers its intangible assets consisting of surname domain names and direct navigation domain names as indefinite life intangible assets. The Company has the exclusive right to these domain names as long as the annual renewal fees are paid to the applicable registry. Renewals occur routinely and at a nominal cost. The indefinite life intangible assets are not amortized, but are subject to impairment assessments performed throughout the year. During Fiscal 2022, we assessed whether certain domain names that were originally acquired in the June 2006 acquisition of Mailbank.com Inc. that were up for renewal, should not be renewed. During the years ended December 31, 2022, December 31, 2021, and December 31, 2020, no impairment of indefinite life intangible assets was recorded.

Finite-life intangible assets, comprising brand, technology, customer relationships and network rights are being amortized on a straight-line basis over periods of two to fifteen years.

Throughout 2022, the Company purchased customer relationship assets through hosting agreements whereby customer assets and domain names were obtained. These customer assets are being amortized over seven years.

In June 2020, in light of developments in the economy and the business and leisure travel industries as a result of the COVID-19 pandemic, the Company decided to discontinue the operation of Roam Mobility. As a consequence of the decision to shut down its Roam Mobility operations, the Company recorded an impairment loss associated with Roam Mobility customer relationships of $1.4 million during the year ended December 31, 2020.

In August 2020, the Company sold the mobile customer accounts that are marketed and sold under the Ting brand (other than certain customer accounts associated with one network operator), and as such de-recognized any capitalized customer relationships associated with those accounts. See Note 17 - Other income, for more information.

Acquired intangible assets consist of the following (Dollar amounts in thousands of U.S. dollars):

Amortization period	Surname domain names indefinite life	Direct navigation domain names indefinite life	Brand 7 years	Customer relationships 3 - 7 years	Technology 2 -7 years	Network rights 15 years	Total
Balances, December 31, 2020	$ 11,157	$ 1,135	$ 7,021	$ 26,664	$ 274	$ 1,193	$ 47,444
Simply Bits acquisition	-	-	-	9,160	-	-	9,160
Uniregistry acquisition	-	-	-	-	3,039	-	3,039
Acquisition of customer relationship	-	-	-	224	-	-	224
Acquisition of brand	-	-	59	-	-	-	59
Acquisition of technology	-	-	-	-	491	-	491
Additions to/(disposals from) domain portfolio, net	(1)	-	-	-	-	-	(1)
Amortization expense	-	-	(2,070)	(7,414)	(412)	(111)	(10,007)
Balances December 31, 2021	$ 11,156	$ 1,135	$ 5,010	$ 28,634	$ 3,392	$ 1,082	50,409
Acquisition of customer relationship	-	-	-	782	-	-	782
Additions to/(disposals from) domain portfolio, net	(1)	(6)	-	-	-	-	(7)
Amortization expense	-	-	(2,070)	(8,603)	(622)	(99)	(11,394)
Balances December 31, 2022	$ 11,155	$ 1,129	$ 2,940	$ 20,813	$ 2,770	$ 983	$ 39,790

The following table shows the estimated amortization expense for each of the next 5 years and thereafter, assuming no further additions to acquired intangible assets are made (Dollar amounts in thousands of U.S. dollars):

	Year ending December 31,
2023	$ 10,375
2024	5,411
2025	4,205
2026	2,648
2027	1,616
Thereafter	3,251
Total	$ 27,506

6. Fair Value Measurement:

For financial assets and liabilities recorded in our financial statements at fair value we utilize a valuation hierarchy for disclosure of the inputs to valuation used to measure fair value. This hierarchy prioritizes the inputs into three broad levels. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on the Company's own assumptions used to measure assets and liabilities at fair value. A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

Equity investments without readily determinable fair value include ownership rights that do not provide the Company with control or significant influence. Such equity investments are recorded at cost, less any impairment, and adjusted for subsequent observable price changes as of the date that an observable transaction takes place. Subsequent adjustments are recorded in other income (expense), net.

The following table provides a summary of the fair values of the Company's derivative instruments measured at fair value on a recurring basis as at December 31, 2022 (Dollar amounts in thousands of U.S. dollars):

	December 31, 2022			
	Fair Value Measurement Using			Assets
	Level 1	Level 2	Level 3	at Fair value
Derivative instrument asset, net	$ -	$ 1,514	$ -	$ 1,514
Total Assets, net	$ -	$ 1,514	$ -	$ 1,514

The following table provides a summary of the fair values of the Company's derivative instruments measured at fair value on a recurring basis as at December 31, 2021 (Dollar amounts in thousands of U.S. dollars):

	December 31, 2021			
	Fair Value Measurement Using			Assets
	Level 1	Level 2	Level 3	at Fair value
Derivative instrument asset, net	$ -	$ 452	$ -	$ 452
Total Assets, net	$ -	$ 452	$ -	$ 452

7. Derivative Instruments and Hedging Activities:

The Company is exposed to certain risks relating to its ongoing business operations. The primary risks managed by using derivative instruments are foreign exchange rate risk and interest rate risk.

Foreign currency forward contracts

Since October 2012, the Company has employed a hedging program with a Canadian chartered bank to limit the potential foreign exchange fluctuations incurred on its future cash flows related to a portion of payroll, taxes, rent and payments to Canadian domain name registry suppliers that are denominated in Canadian dollars and are expected to be paid by its Canadian operating subsidiary. In May 2020, the Company entered into a pay-fixed, receive-variable interest rate swap with a Canadian chartered bank to limit the potential interest rate fluctuations incurred on its future cash flows related to variable interest payments on the Second Amended 2019 Credit Facility. The notional value of the interest rate swap was $70 million.

The Company does not use hedging forward contracts for trading or speculative purposes. The foreign exchange contracts typically mature between one and twelve months, and the interest rate swap matures in June 2023.

The Company has designated certain of these foreign exchange transactions as cash flow hedges of forecasted transactions under ASU 2017-12, Derivatives and Hedging (Topic 815) (“ASC Topic 815”). For certain contracts, as the critical terms of the hedging instrument, and of the entire hedged forecasted transaction, are the same, in accordance with ASC Topic 815, the Company has been able to conclude that changes in fair value and cash flows attributable to the risk of being hedged are expected to completely offset at inception and on an ongoing basis. The Company designated the interest rate swap as a cash flow hedge of expected future interest payments at the inception of the contract. Accordingly, for the foreign exchange, unrealized gains or losses on the effective portion of these contracts were included within other comprehensive income and reclassified to earnings when the hedged transaction is settled. Cash flows from hedging activities were classified under the same category as the cash flows from the hedged items in the consolidated statements of cash flows. The fair value of the contracts, as of December 31, 2022 and December 31, 2021, is recorded as derivative instrument assets or liabilities. For certain contracts where the hedged transactions are no longer probable to occur, the loss on the associated forward contract is recognized in earnings.

During the third quarter of fiscal year 2022, the Company elected to discontinue its application of hedge accounting to its interest rate swaps prospectively. The derivatives continue to be carried at fair value in the accompanying Consolidated Balance Sheets with changes in their fair value from the date of discontinuance recognized in current period earnings in Interest expense, net in the Consolidated Statements of Operations and Comprehensive Income. Amounts previously accumulated in Accumulated other comprehensive income prior to discontinuance will continue to be realized over the remaining term of the underlying forecasted interest payments as a component of Accumulated other comprehensive income in Stockholders’ equity and the amounts in AOCI as of the date of the hedge discontinuance will be recorded into interest expense over the original term of the hedged debt. Prior to the discontinuance, for the interest rate swap contracts, unrealized gains or losses on the effective portion of these contracts had been included within other comprehensive income and reclassified to earnings when the hedged transaction is settled.

As of December 31, 2022, the notional amount of forward contracts that the Company held to sell U.S. dollars in exchange for Canadian dollars was $49.7 million, of which $49.7 million met the requirements of ASC Topic 815 and were designated as hedges.

As of December 31, 2021 the notional amount of forward contracts that the Company held to sell U.S. dollars in exchange for Canadian dollars was $31.8 million, of which $26.8 million met the requirements of ASC Topic 815 and were designated as hedges.

As of December 31, 2022, we had the following outstanding forward contracts to trade U.S. dollars in exchange for Canadian dollars:

Maturity date (Dollar amounts in thousands of U.S. dollars)	Notional amount of U.S. dollars	Weighted average exchange rate of U.S. dollars	Fair value
January - March 2023	15,132	1.3283	(270)
April - June 2023	13,074	1.3385	(119)
July - September 2023	11,332	1.3633	113
October - December 2023	10,150	1.3744	192
	$ 49,688	1.3484	$ (84)

Fair value of derivative instruments and effect of derivative instruments on financial performance

The effect of these derivative instruments on our consolidated financial statements as of, and for the years ended December 31, 2022 and 2021, were as follows (amounts presented do not include any income tax effects).

Fair value of derivative instruments in the consolidated balance sheets (see “Note 6 – Fair Value Measurement”*)*

Derivatives (Dollar amounts in thousands of U.S. dollars)	Balance Sheet Location	As of December 31, 2022 Fair Value Asset	As of December 31, 2021 Fair Value Asset
Foreign Currency forward contracts designated as cash flow hedges (net)	Derivative instruments	$ (84)	$ 62
Interest rate swap contract designated as a cash flow hedge (net)	Derivative instruments	1,598	390
Foreign Currency forward contracts not designated as cash flow hedges (net)	Derivative instruments	-	-
Total foreign currency forward contracts and interest rate swaps (net)	Derivative instruments	$ 1,514	$ 452

Movement in AOCI balance for the year ended December 31, 2022 (Dollar amounts in thousands of U.S. dollars)

	Gains and losses on cash flow hedges	Tax impact	Total AOCI
Opening AOCI balance - December 31, 2021	$ 450	$ (107)	$ 343
Other comprehensive income (loss) before reclassifications	550	(132)	418
Amount reclassified from AOCI	793	(193)	600
Amortization of discontinued cash flow hedge	(761)	184	(577)
Other comprehensive income (loss) for the year ended December 31, 2022	582	(141)	441
Ending AOCI Balance - December 31, 2022	$ 1,032	$ (248)	$ 784

Movement in AOCI balance for the year ended December 31, 2021 (Dollar amounts in thousands of U.S. dollars)

	Gains and losses on cash flow hedges	Tax impact	Total AOCI
Opening AOCI balance - December 31, 2020	$ 3,038	$ (702)	$ 2,336
Other comprehensive income (loss) before reclassifications	794	(222)	572
Amount reclassified from AOCI	(3,382)	817	(2,565)
Other comprehensive income (loss) for the year ended December 31, 2021	(2,588)	595	(1,993)
Ending AOCI Balance - December 31, 2021	$ 450	$ (107)	$ 343

Movement in AOCI balance for the year ended December 31, 2020 (Dollar amounts in thousands of U.S. dollars)

	Gains and losses on cash flow hedges	Tax impact	Total AOCI
Opening AOCI balance - December 31, 2019	$ 625	$ (152)	$ 473
Other comprehensive income (loss) before reclassifications	2,142	(489)	1,653
Amount reclassified from AOCI	271	(61)	210
Other comprehensive income (loss) for the year ended December 31, 2020	2,413	(550)	1,863
Ending AOCI Balance - December 31, 2020	$ 3,038	$ (702)	$ 2,336

Effects of derivative instruments on income and other comprehensive income (OCI) (Dollar amounts in thousands of U.S. dollars)

Derivatives in Cash Flow Hedging Relationship	Amount of Gain or (Loss) Recognized in OCI, net of tax, on Derivative	Location of Gain or (Loss) Reclassified from AOCI into Income	Amount of Gain or (Loss) Reclassified from AOCI into Income
		Operating expenses	$ (691)
Foreign currency forward contracts for the year ended December 31, 2022	$ (1,014)	Cost of revenues	$ (171)
Interest rate swap contract for the year ended December 31, 2022	$ 1,430	Interest expense, net	$ 69
		Operating expenses	$ 2,652
Foreign currency forward contracts for the year ended December 31, 2021	$ (2,203)	Cost of revenues	$ 615
Interest rate swap contract for the year ended December 31, 2021	$ (210)	Interest expense, net	$ 115
		Operating expenses	$ (188)
Foreign currency forward contracts for the year ended December 31, 2020	$ 2,026	Cost of revenues	$ (66)
Interest rate swap contract for the year ended December 31, 2020	$ (163)	Interest expense, net	$ (17)

For those foreign currency forward contracts not designated as hedges, the Company recorded the following fair value adjustments on settled and outstanding contracts (Dollar amounts in thousands of U.S. dollars):

	Year Ended December 31,		
Forward currency contracts not designated as hedges:	**2022**	**2021**	**2020**
Gain (loss) on settlement	$ -	$ 883	$ (117)
Gain (loss) on change in fair value	-	(606)	500
	$ -	$ 277	$ 383

For those interest rate swap contracts not designated as hedges, the Company recorded the following fair value adjustments on settled and outstanding contracts (Dollar amounts in thousands of U.S. dollars):

	Year Ended December 31,		
Interest rate swap contracts not designated as hedges:	**2022**	**2021**	**2020**
Gain (loss) on matured swaps	$ 777	$ -	$ -
Gain (loss) on change in fair value on unsettled swaps	(281)	-	-
	$ 496	$ -	$ -

8. Loan Payable:

Amended 2019 Credit Facility

On June 14, 2019, the Company and its wholly-owned subsidiaries, Tucows.com Co., Ting Fiber, Inc., Ting Inc., Tucows (Delaware) Inc. and Tucows (Emerald), LLC entered into an Amended and Restated Senior Secured Credit Agreement (the “Amended 2019 Credit Facility”) with Royal Bank (“RBC”), as administrative agent, and lenders party thereto (collectively with RBC, the “Lenders”) under which the Company had access to an aggregate of up to $240 million in funds, which consisted of $180 million guaranteed credit facility and a $60 million accordion facility. The Amended 2019 Credit Facility replaced the Company’s 2017 Amended Credit Facility.

In connection with the Amended 2019 Credit Facility, the Company incurred $0.3 million of fees paid to the Lenders and $0.2 million of legal fees related to the debt issuance. Of these fees, $0.4 million are debt issuance costs, which have been reflected as a reduction to the carrying amount of the loan payable and will be amortized over the term of the credit facility agreement and $0.1 million were recorded in General and administrative expenses for the year ended December 31, 2019.

The obligations of the Company under the Amended 2019 Credit Agreement are secured by a first priority lien on substantially all of the personal property and assets of the Company and has a four-year term, maturing on June 13, 2024.

Second Amended 2019 Credit Facility

On October 26, 2021, the Company entered into a Second Amended and Restated Senior Secured Credit Agreement (the “Second Amended 2019 Credit Agreement”) with the Lenders and Toronto-Dominion Bank (collectively the “New Lenders”) to, among other things, increase the existing revolving credit facility from $180 million to $240 million. The Second Amended Credit 2019 Agreement provides the Company with access to an aggregate of $240 million in committed funds. The Second Amended 2019 Credit Agreement also provides for two additional interest rate tiers if the Company exceeds a 3.50x Total Funded Debt to Adjusted EBITDA Ratio.

In connection with the Second Amended 2019 Credit Facility, the Company incurred $0.3 million of fees related to the debt issuance, which have been reflected as a reduction to the carrying amount of the loan payable and will be amortized over the term of the credit facility agreement.

Third Amended 2019 Credit Facility

On August 8, 2022, the Company entered into a Third Amended and Restated Senior Secured Credit Agreement (the “Amended Credit Agreement”) with its existing syndicate of lenders (the Lenders). The Amended Credit Agreement continue to provide the Company with access to an aggregate of $240 million in committed funds (the Credit Facility). Under the Amended Credit Agreement, and in connection with the Unit Purchase Agreement (as defined in Note 13 - Redeemable preferred shares), the Lenders agreed that Ting Fiber Inc. (converted to Ting LLC) and its wholly owned subsidiaries ceased to be Guarantors under the Credit Facility and shall automatically be released from the respective guarantee and security documents, including a release of the Lenders' security interests and liens upon the assets of such entities. Additionally, the Amended Credit Agreement extended the maturity of the Credit Facility to June 14, 2024. The Company was subject to the following financial covenants at all times, which are to be calculated on a rolling four quarter basis: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.00:1.00 until September 29, 2023 and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. The financial covenant calculations will exclude the financial results of Ting Fiber Inc. (converted to Ting LLC) and its wholly owned subsidiaries. The Amended Credit Agreement also requires the Company to comply with other customary terms and conditions. The Amended Credit Agreement added SOFR loans as a form of advance available under the Credit Facility to replace LIBOR rate advances, and such SOFR Loans may bear interest based on Adjusted Daily Simple SOFR (defined to be the applicable SOFR rate published by the Federal Reserve bank of New York plus 0.10% per annum subject to a floor of zero) or Adjusted Term SOFR (defined to be the applicable SOFR rate published by CME Group Benchmark Administration Limited plus 0.10% for one-month, 0.15% for three-months, and 0.25% for six-months per annum).

On March 14, 2023, the Company entered into an Amending Agreement No.2 to the Third Amended and Restated Senior Secured Credit Agreement (the "Credit Agreement Amendment") with its existing syndicate of lenders as more fully described in Note 21(c) - Subsequent events.

Credit Facility Terms

The Credit Facility is revolving with interest only payments with no scheduled repayments during the term.

The Amended Credit Facility Agreement contains customary representations and warranties, affirmative and negative covenants, and events of default. The Amended Credit Agreement was entered into in August 2022 which required the Company to comply with the following financial covenants at all times, which are to be calculated on a rolling four quarter basis: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.00:1.00 until September 29, 2023; (ii) 3.75:100 thereafter and; (iii) minimum Interest Coverage Ratio of 3.00:1.00. As at and for the periods ending December 31, 2022 and December 31, 2021 the Company was in compliance with these covenants.

Borrowings under the Amended Credit Agreement will accrue interest and standby fees based on the Company's Total Funded Debt to Adjusted EBITDA ratio and the availment type as follows:

	If Total Funded Debt to EBITDA is:					
Availment type or fee	Less than 1.75	Greater than or equal to 1.75 and less than 2.25	Greater than or equal to 2.25 and less than 2.75	Greater than or equal to 2.75 and less than 3.25	Greater than or equal to 3.25 and less than 3.75	Greater than or equal to 3.75
Canadian dollar borrowings based on Bankers' Acceptance or U.S. dollar borrowings based on SOFR (Margin)	1.50%	1.75%	2.25%	2.50%	2.75%	3.00%
Canadian or U.S. dollar borrowings based on Prime Rate or U.S. dollar borrowings based on Base Rate (Margin)	0.25%	0.50%	1.0%	1.25%	1.50%	1.75%
Standby fees	0.30%	0.35%	0.45%	0.50%	0.55%	0.60%

The following table summarizes the Company's borrowings under the credit facilities (Dollar amounts in thousands of U.S. dollars):

	December 31, 2022	December 31, 2021
Revolver	$ 239,700	$ 191,400
Less: unamortized debt discount and issuance costs	(770)	(652)
Total loan payable	238,930	190,748
Less: loan payable, current portion	-	-
Loan payable, long-term portion	$ 238,930	$ 190,748

The following table summarizes our scheduled principal repayments as of December 31, 2022 (Dollar amounts in thousands of U.S. dollars):

2023	-
2024	239,700
	$ 239,700

Each reporting period, the Company assesses its ability to continue as a going concern for one year from the date the financial statements are issued. The Company's evaluation includes its ability to meet its future contractual obligations and other conditions and events that may impact liquidity.

As of December 31, 2022, the Company had cash and cash equivalents of $23.5M. In the next 12 months, Excluding Ting has lease commitments of $0.9 million and other operating expense commitments of $17.6 million and no capital expenditure commitments. We believe that the current cash and cash equivalents and capital commitments along with operating cash flows will be sufficient to fund operations, loan repayments and cash flow requirements for the next twelve months.

In the long-term, we may seek additional financing to accelerate the growth of our Wavelo business, repurchase shares or future acquisitions.

9. Income Taxes:

The provision for income taxes differs from the amount computed by applying the statutory federal income tax rate of 21% for the years ended December 31, 2022, December 31, 2021 and December 31, 2020, to income before provision for income taxes as a result of the following (Dollar amounts in thousands of U.S. dollars):

	Year ended December 31,		
	2022	**2021**	**2020**
Income (loss) for the year before provision for income taxes	$ (27,788)	$ 7,270	$ 10,760
Computed federal tax expense	(5,836)	1,527	2,259
Increase (decrease) in income tax expense resulting from:			
State income taxes	845	314	303
Foreign earnings	386	382	(175)
Changes in valuation allowance	4,023	2,300	1,867
Expired business tax credits	-	-	1,044
Shortfall (excess) tax benefits on share-based compensation	138	(1,556)	(407)
Permanent differences	(112)	205	(161)
Others	339	734	255
Provision (recovery) for income taxes	$ (217)	$ 3,906	$ 4,985

Our effective tax rate is mainly driven by changes in valuation allowance on foreign tax credits that we are not expected to realize in future years

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and liabilities as of December 31, 2022, and December 31, 2021 are presented below (Dollar amounts in thousands of U.S. dollars):

	December 31, 2022	December 31, 2021
Deferred tax assets:		
Foreign tax credits	$ 17,554	$ 13,531
Deferred revenue	5,349	5,694
Net operating losses	2,468	537
Interest limitation	1,047	-
Amortization	379	-
Accruals, including foreign exchange and other	3,909	2,991
Total deferred tax assets	30,706	22,753
Valuation allowance	(17,554)	(13,531)
Total deferred tax assets	$ 13,152	$ 9,222
Deferred tax liabilities:		
Prepaid registry fees and expenses	$ (17,941)	$ (18,165)
Investment in partnership	(6,727)	
Amortization	-	(6,578)
Indefinite life intangible assets	(2,968)	(3,229)
Limited life intangible assets	(629)	(2,969)
Foreign branch deferred tax liabilities	(607)	(828)
Total deferred tax liability	$ (28,872)	$ (31,769)
Net deferred tax assets (liabilities)	$ (15,720)	$ (22,547)

The enactment of the Tax Cuts and Jobs Act since 2017 in combination of the change in the geographical mix of income have a material impact on our ability to utilize the foreign tax credits, and we have determined that it is not more likely than not that we will ultimately be able to fully utilize the existing foreign taxes paid as foreign tax credits in future years. Therefore, a full valuation allowance is recorded against the deferred tax assets on foreign tax credits. Should our operating results continue to improve and projections to show utilization of the foreign tax credits, we would take the positive evidence into consideration and reassess our valuation allowance position.

We believe it is more likely than not that our remaining deferred tax assets, net of the valuation allowance, will be realized based on current income tax laws, and expectations of future taxable income stemming from forecasted profits from ongoing operations and from the reversal of existing deferred tax liabilities.

The Company had nil total gross unrecognized tax benefits as of both December 31, 2022 and December 31, 2021.

The Company recognizes interest and penalties related to income tax matters within the provision for income taxes. No material interest and penalties were recognized as of December 31, 2022 and December 31, 2021.

10. Revenue:

Significant accounting policy

The Company's revenues are derived from (a) the provisioning of retail fiber Internet services through Ting, (b) the CSP solutions and professional services through Wavelo; and from (c) domain name registration contracts, other domain related value-added services, domain sale contracts, and other advertising revenue through Tucows Domains Services. Certain revenues are disclosed under Tucows Corporate as they are considered non-core business activities including Mobile Retail Services, Transition Services Agreement ("TSA") revenue and eliminations of intercompany revenue. Amounts received in advance of meeting the revenue recognition criteria described below are recorded as deferred revenue. All products are generally sold without the right of return or refund.

Revenue is measured based on consideration specified in a contract with a customer and excludes any sales incentives and amounts collected on behalf of third parties. The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to a customer.

In the third quarter of 2022, the Company renamed its three operating and reportable segments to reflect their branded names: Ting, Wavelo and Tucows Domains, previously called Fiber Internet Services, Platform Services and Domain Services, respectively. There were no changes to the activities or financial results attributed to each segment.

Nature of goods and services

The following is a description of principal activities – separated by reportable segments – from which the Company generates its revenue. For more detailed information about reportable segments. See Note 20 – Segment Reporting for more information.

(a) Ting

The Company generates Ting revenues primarily through the provisioning of fixed high-speed Internet access, Ting Internet.

Ting Internet contracts provide customers Internet access at their home or business through the installation and use of our fiber optic network. Ting Internet contracts are generally prepaid and grant customers with unlimited bandwidth based on a fixed price per month basis. Because consideration is collected before the service period, revenue is initially deferred and recognized as the Company performs its obligation to provide Internet access. Though the Company does not consider the installation of fixed Internet access to be a distinct performance obligation, the fees related to installation are immaterial and therefore revenue is recognized as billed.

Ting Internet access services are primarily contracted through the Ting website, for one month at a time and contain no commitment to renew the contract following each customer's monthly billing cycle. The Company's billing cycle for all Ting Internet customers is computed based on the customer's activation date. In addition, revenues associated with the sale of Internet hardware to subscribers are recognized when title and risk of loss is transferred to the subscriber and shipment has occurred. Incentive marketing credits given to customers are recorded as a reduction of revenue.

In those cases, where payment is not received at the time of sale, revenue is not recognized at contract inception unless the collection of the related accounts receivable is reasonably assured. The Company records costs that reflect expected refunds, rebates and credit card charge-backs as a reduction of revenues at the time of the sale based on historical experiences and current expectations.

(b) Wavelo

The Company generates Wavelo revenues by providing billing and provisioning platform services to Communication Service Providers ("CSPs") to whom we also provide other professional services.

Platform service agreements contain both platform services and professional services. Platform services offer a variety of solutions that support CSPs, including subscription and billing management, network orchestration and provisioning, and individual developer tools through a single, cloud based service. Consideration under platform service arrangements includes both a variable component that changes each month depending on the number of subscribers hosted on the platform, as well as fixed payments and credits. The Company recognizes variable subscriber fees, including variable amounts in excess of substantive minimum fees where appropriate, as the fees are invoiced. Platform services represent a single promise to provide continuous access (i.e. a stand-ready performance obligation) to the platform. As each month of providing access to the platform is substantially the same and the customer simultaneously receives and consumes the benefits as access is provided, the performance obligation is comprised of a series of distinct service periods. Professional services provided under platform service arrangements can include implementation, training, consulting or software development/modification services. Revenues related to professional services are distinct from the other promises in the contract(s) and are recognized as the related services are performed, on the basis of hours consumed. Consideration is allocated between the platform services and professional services performance obligations by estimating the standalone selling price ("SSP") of each performance obligation. The Company estimates the SSP of professional services based on observable standalone sales. The SSP of platform services is derived using the residual approach by estimating the total contract consideration and subtracting the SSP of professional services. Total contract consideration is estimated at contract inception, considering any constraints that may apply and updating the estimates as new information becomes available.

Other professional services consist of professional service arrangements with platform services customers which are billed based on separate Statement of Work ("SOW") arrangements for bespoke feature development. Revenues for professional services contracted through separate SOWs are recognized at a point-in-time when the final acceptance criteria have been met.

(c) Tucows Domains

Domain registration contracts, which can be purchased for terms of one to ten years, provide our resellers and retail registrant customers with the exclusive right to a personalized internet address from which to build an online presence. The Company enters into domain registration contracts in connection with each new, renewed and transferred-in domain registration. At the inception of the contract, the Company charges and collects the registration fee for the entire registration period. Though fees are collected upfront, revenue from domain registrations are recognized rateably over the registration period as domain registration contracts contain a 'right to access' license of IP, which is a distinct performance obligation measured over time. The registration period begins once the Company has confirmed that the requested domain name has been appropriately recorded in the registry under contractual performance standards.

Domain related value-added services like digital certifications, WHOIS privacy, website hosting and hosted email provide our resellers and retail registrant customers with tools and additional functionality to be used in conjunction with domain registrations. All domain related value-added services are considered distinct performance obligations which transfer the promised service to the customer over the contracted term. Fees charged to customers for domain related value-added services are collected at the inception of the contract, and revenue is recognized on a straight-line basis over the contracted term, consistent with the satisfaction of the performance obligations.

The Company is an ICANN accredited registrar. Thus, the Company is the primary obligor with our reseller and retail registrant customers and is responsible for the fulfillment of our registrar services to those parties. As a result, the Company reports revenue in the amount of the fees we receive directly from our reseller and retail registrant customers. Our reseller customers maintain the primary obligor relationship with their retail customers, establish pricing and retain credit risk to those customers. Accordingly, the Company does not recognize any revenue related to transactions between our reseller customers and their ultimate retail customers.

The Company also sells the rights to the Company's portfolio domains or names acquired through the Company's domain expiry stream. Revenue generated from sale of domain name contracts, containing a distinct performance obligation to transfer the domain name rights under the Company's control, is generally recognized once the rights have been transferred and payment has been received in full.

Advertising revenue is derived through domain parking monetization, whereby the Company contracts with third-party Internet advertising publishers to direct web traffic from the Company's domain expiry stream domains and Internet portfolio domains to advertising websites. Compensation from Internet advertising publishers is calculated variably on a cost-per-action basis based on the number of advertising links that have been visited in a given month. Given that the variable consideration is calculated and paid on a monthly basis, no estimation of variable consideration is required.

Disaggregation of Revenue

The following is a summary of the Company's revenue earned from each significant revenue stream (Dollar amounts in thousands of U.S. dollars):

	2022	2021	2020
Ting:			
Fiber Internet Services	$ 42,425	$ 25,327	$ 17,151
Wavelo:			
Platform Services	22,594	13,031	1,839
Other professional services	1,750	3,750	-
Total Wavelo	24,344	16,781	1,839
Tucows Domains:			
Wholesale			
Domain Services	187,542	189,091	186,893
Value Added Services	20,712	20,942	18,526
Total Wholesale	208,254	210,033	205,419
Retail	34,904	35,543	36,835
Total Tucows Domains	243,158	245,576	242,254
Tucows Corporate:			
Mobile Services and eliminations	11,215	16,653	49,958
	$ 321,142	$ 304,337	$ 311,202

As of December 31, 2022, one customer represented 46% of total accounts receivable. As of December 31, 2021 one customer represented 46% of total accounts receivable. As of December 31, 2020, one customer represented 59% of total accounts receivable.

During the years ended December 31, 2022, December 31, 2021 and December 31, 2020 no customer accounted for more than 10% of total revenue.

The following is a summary of the Company's cost of revenue from each significant revenue stream (Dollar amounts in thousands of U.S. dollars):

	2022	2021	2020
Ting:			
Fiber Internet Services	$ 17,004	$ 12,035	$ 6,856
Wavelo:			
Platform Services	1,294	504	183
Other professional services	1,632	804	-
Total Wavelo	2,926	1,308	183
Tucows Domains:			
Wholesale			
Domain Services	147,894	147,213	146,788
Value Added Services	2,514	2,544	3,016
Total Wholesale	150,408	149,757	149,804
Retail	16,482	17,731	17,647
Total Tucows Domains	166,890	167,488	167,451
Tucows Corporate:			
Mobile Services and eliminations	9,448	12,208	25,911
Network Expenses:			
Network, other costs	17,433	14,769	10,194
Network, depreciation and amortization costs	29,101	18,035	13,484
Network, impairment	92	201	1,638
Total Network Expenses	46,626	33,005	25,316
	$ 242,894	$ 226,044	$ 225,717

Contract Balances

The following table provides information about contract liabilities (deferred revenue) from contracts with customers. The Company accounts for contract assets and liabilities on a contract-by-contract basis, with each contract presented as either a net contract asset or a net contract liability accordingly.

Given that Company's long-term contracts with customers are billed in advance of service, the Company's contract liabilities relate to amounts recorded as deferred revenues. The Company does not have material streams of contracted revenue that have not been billed.

Deferred revenue primarily relates to the portion of the transaction price received in advance related to the unexpired term of domain name registrations and other domain related value-added services, on both a wholesale and retail basis, net of external commissions.

The opening balance of deferred revenue was $147.8 million as of January 1, 2022. Significant changes in deferred revenue were as follows (Dollar amounts in thousands of U.S. dollars):

	Year ended December 31, 2022
Balance, beginning of period	$ 147,793
Deferred revenue	257,127
Recognized revenue	(259,789)
Balance, end of period	$ 145,131

Remaining Performance Obligations:

As the Company fulfills its performance obligations, the following table includes revenues expected to be recognized in the future related performance obligations that are unsatisfied (or partially unsatisfied) as at December 31, 2022 (Dollar amounts in thousands of U.S. dollars)

	December 31, 2022
2023	$ 120,083
2024	10,033
2025	4,715
2026	2,871
2027	1,781
Thereafter	2,837
Total	$ 142,320

For professional services and internet access services, where the performance obligation is part of contracts that have an original expected duration of one year or less, the Company has elected to apply a practical expedient to not disclose revenues expected to be recognized in the future related performance obligations that are unsatisfied (or partially unsatisfied).

Although domain registration contracts are deferred over the lives of the individual contracts, which can range from one to ten years, approximately 80 percent of our deferred revenue balance related to domain contracts is expected to be recognized within the next twelve months.

Deferred revenue related to Exact hosting contracts is also deferred over the lives of the individual contracts, which are expected to be fully recognized within the next twelve months.

11. Costs to obtain and fulfill a contract

(a) Deferred costs of acquisition

We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the period of benefit of those costs to be longer than one year and those costs are expected to be recoverable under the term of the contract. We have identified certain sales incentive programs and other customer acquisition fees that meet the requirements to be capitalized, and therefore, capitalized them as contract costs in the amount of $1.8 million at December 31, 2022.

Capitalized contract acquisition costs are amortized into operating expense based on the transfer of goods or services to which the assets relate which typically range from two – ten years. For the year ended December 31, 2022, the Company capitalized $1.5 million and also amortized $0.7 million of contract costs, respectively. The breakdown of the movement in the deferred costs of acquisition balance for the year ended December 31, 2022 is as follows (Dollar amounts in thousands of U.S. dollars):

	Year ended December 31, 2022
Balance, beginning of period	$ 1,079
Capitalization of costs	1,494
Amortization of costs	(746)
Balance, end of period	$ 1,827

When the amortization period for costs incurred to obtain a contract with a customer is less than one year, we have elected to apply a practical expedient to expense the costs as incurred. These costs include our internal sales compensation program, certain partner sales incentive programs and other customer acquisition fees.

(b) Deferred costs of fulfillment

Deferred costs to fulfill contracts primarily consist of domain registration costs which have been paid to a domain registry, and are capitalized as deferred costs of fulfillment. These costs are deferred and amortized over the life of the domain which generally ranges from one to ten years. The Company also defers certain technology design and data migration costs it incurs to fulfil its performance obligations contained in our platform services arrangements. For the year ended December 31, 2022, the Company capitalized $169.5 million and also amortized $171.5 million of contract costs. There were no impairment losses recognized in relation to the costs capitalized during the year ended December 31, 2022. Amortization expense is primarily included in cost of revenue. The breakdown of the movement in the deferred costs of fulfillment balance for the year ended December 31, 2022 is as follows (Dollar amounts in thousands of U.S. dollars).

	Year ended December 31, 2022
Balance, beginning of period	$ 112,711
Deferral of costs	169,457
Recognized costs	(171,494)
Balance, end of period	$ 110,674

12. Leases

We lease datacenters, corporate offices, antenna tower and fiber-optic cables under operating leases. The Company does not have any leases classified as finance leases.

Our leases have remaining lease terms of 1 year to 19 years, some of which may include options to extend the leases for up to 5 years, and some of which may include options to terminate the leases within 1 year.

The components of lease expense were as follows (Dollar amounts in thousands of U.S. dollars):

	Year Ended December 31, 2022	Year Ended December 31, 2021
Operating Lease Cost (leases with a total term greater than 12 months)	$ 4,200	$ 2,840
Short-term Lease Cost (leases with a total term of 12 months or less)	244	117
Variable Lease Cost	1,223	763
Total Lease Cost	$ 5,667	$ 3,720

Lease Cost is presented in general and administrative expenses and direct cost of revenues within our consolidated statements of operations and comprehensive income.

Information related to leases was as follows (Dollar amounts in thousands of U.S. dollars):

Supplemental cashflow information:	Year Ended December 31, 2022	Year Ended December 31, 2021
Operating Lease - Operating Cash Flows (Fixed Payments)	$ 4,896	$ 5,120
Operating Lease - Operating Cash Flows (Liability Reduction)	$ 3,984	$ 2,468
New ROU Assets - Operating Leases	$ 6,726	$ 9,032

Supplemental balance sheet information related to leases:	December 31, 2022	December 31, 2021
Weighted Average Discount Rate	4.14%	3.09%
Weighted Average Remaining Lease Term	6.56 yrs	7.74 yrs

Maturity of lease liability as of December 31, 2022 (Dollar amounts in thousands of U.S. dollars):

	December 31, 2022
2023	$ 5,198
2024	4,657
2025	3,186
2026	1,669
2027	951
Thereafter	3,218
Total future lease payments	18,879
Less interest	1,799
Total	$ 17,080

Operating lease payments include payments under the non-cancellable term, without any additional amounts related to options to extend lease terms that are reasonably certain of being exercised.

As of December 31, 2022, we not entered into any lease agreements that have not yet commenced, and therefore are not included in the lease liability.

The Company has elected to use the single exchange rate approach when accounting for lease modifications. Under the single exchange rate approach, the entire right of use asset is revalued at the date of modification in the Company's functional currency provided the re-measurement is *not* considered a separate contract or if the re-measurement is related to change the lease term or assessment of a lessee option to purchase the underlying asset being exercised.

13. Redeemable preferred shares:

The Company entered into a Series A Preferred Unit Purchase Agreement (the “Unit Purchase Agreement”) with Generate TF Holdings, LLC, a Delaware limited liability company (“Generate”) on August 8, 2022 (the "Effective Date"), and closed the transaction contemplated thereby on August 11, 2022 (the "Transaction Close") pursuant to which the Company issued and sold 10,000,000 units of its Series A Preferred Units to Generate at a cash purchase price of $6.00 per unit ("Initial Funding"). Under the Unit Purchase Agreement, after the Transaction Close until the third anniversary of the Effective Date (the "End Date") the Company will, upon the achievement of pre-determined operational and financial drawdown milestones issue and sell in subsequent fundings an aggregate of 23,333,333.34 units of additional Series A Preferred Units on the same terms and conditions as in the Initial Funding ("Milestone Fundings"). The investment provided the Company with $60 million of capital upon the Initial Funding, with an additional $140 million of capital commitments available to The Company over the subsequent three-year period if the milestones are achieved. From the Transaction Close until the earlier of (i) the End Date and (ii) the date upon which Generate has paid $140 million pursuant to Milestone Fundings, the Company is required to pay Generate a standby fee at a rate of 0.50% of any portion of the unpaid $140 million capital commitment which will be paid quarterly. The Series A Preferred Units accrue a preferred return to the holder at a rate of 15% per annum, subject to adjustments based on the value of approved projects under the Equity Capital Contribution Agreement (the “ECC Agreement”). The preferred return on the Series A Preferred Units purchased under the Unit Purchase Agreement may be adjusted down to a floor of 13% or up to a ceiling of 17% per annum based on commitment and contribution amounts under the ECC Agreement. The preferred return accrues daily, and is compounded quarterly. The preferred return accrued during the first two years is not payable unless and until the Series A Preferred Units are redeemed. The preferred return accrued after the second anniversary of the Transaction Close is payable by the Company quarterly. If the Company should redeem the Series A Preferred Units prior to the fourth anniversary of the Transaction Close, the Company is required to pay a make-whole premium, which is calculated as the cumulative and compounded preferred return that would have accrued (at the preferred return rate in effect immediately prior to such redemption) on the outstanding unreturned capital balance with respect to the Series A Preferred Units through and including the six-year anniversary of the Transaction Close had such Series A Preferred Unit not been redeemed, discounted at an agreed upon treasury rate plus 50 basis points, compounded quarterly (the "Make-Whole-Premium").

The Company's Amended and Restated Limited Liability Company Agreement (the "LLC Agreement"), states that in the event that (i) the Company fails to pay the preferred return for two consecutive quarters, (ii) the Company fails to pay the redemption price in connection with any redemption of the Series A Preferred Units, (iii) the Company materially breaches its obligations under the LLC Agreement, (iv) there occurs an event of default (or similar term) under Tucows Inc.’s or its affiliates’ credit agreement, (v) there occurs material breach if not cured or otherwise remedied in accordance with the terms of any credit facility (taking into account any cure periods), by the Company or any of its Subsidiaries under any debt facilities where the Company or any of its Subsidiaries incurs indebtedness for borrowed money, or (vi) the Company breaches any covenant under the Unit Purchase Agreement, Generate has the option to either (i) convert Series A Preferred Units based on the Redemption Price into common units of the Company based on the then applicable conversion price ; or (ii) compelling the sale of certain assets of the Company or its subsidiaries of equal value to the Redemption Price.

Under the terms of the LLC Agreement, the Company is mandatorily required to redeem the redeemable preferred shares prior to the earliest of (i) a sale of the Company, (ii) a public offering, (iii) an event of default (or similar term) by Tucows Inc. or any of its affiliates under, (iv) a material breach if not cured or otherwise remedied in accordance with the terms of any credit facility (taking into account any cure periods), by the Company or any of its Subsidiaries under any debt facilities where the Company or any of its Subsidiaries incurs indebtedness for borrowed money, (v) the Company failed to pay the preferred return for two consecutive quarters, and (vi) the six-year anniversary of the Transaction Close. Due to the fact that the redeemable preferred shares are mandatorily redeemable, the redeemable preferred units are classified as a liability in the accompanying consolidated balance sheets. The liability was initially recorded at fair value and subsequently recorded at the present value of the settlement amount, which includes the preferred return payments required until the instrument's expected maturity on the sixth anniversary of the Transaction Close, August 10, 2028 using the implicit rate of return of the instrument, 15%. The Company recorded and $3.9 million accretion expense on the redeemable preferred shares for the year ended December 31, 2022, recorded as interest expense, net in the accompanying consolidated statements of operations and comprehensive income (loss).

The Company incurred $0.8 million of legal fees related to the redeemable preferred share issuance, which have been reflected as a reduction to the carrying amount of the redeemable preferred unit balance and will be amortized to interest expense, net in the accompanying consolidated statements of operations and comprehensive income (loss) over the expected six-year term instrument.

On December 5, 2022, the Company issued and sold an additional 4,583,333 units of its Series A Preferred Units to Generate at a cash purchase price of $6.00 per unit. The Milestone Funding provided the Company with an additional $27.5 million of capital. As of December 31, 2022, the remaining capital commitment on the Unit Purchase Agreement was $112.5 million.

The redeemable preferred units have an aggregate liquidation preference of $87.5 million, plus any accrued and unpaid preferred return thereon, plus a Make-Whole Premium should redemption occur before the fourth anniversary of the Transaction Date and are senior to the Ting Fiber, LLC common shares with respect to sale, dissolution, liquidation or winding up of the Company.

On January 30, 2023, the Company issued and sold an additional 5,000,000 units of its Series A Preferred Units to Generate at a cash purchase price of $6.00 per unit. The Milestone Funding provided the Company with an additional $30.0 million of capital. See "Note 21(b) - Subsequent Events" for more information on the Milestone Funding.

The following table summarizes the Company’s borrowings under the preferred share agreement (Dollar amounts in thousands of U.S. dollars):

	December 31, 2022	December 31, 2021
Opening Balance	$ -	$ -
Add: Funding at Transaction Close	60,000	
Add: Milestone Funding	27,500	
Add: Accretion of redeemable preferred shares	3,896	
Less: Deferred Preferred Financing Costs	(962)	-
Total Redeemable Preferred Shares	$ 90,434	$ -

The following table summarizes our scheduled repayments as of December 31, 2022 (Dollar amounts in thousands of U.S. dollars):

2023	$ -
2024	6,882
2025	17,691
2026	17,691
2027 and thereafter	144,822
	$ 187,086

14. Common Shares

The Company's authorized common share capital is 250 million shares of common stock without nominal or par value. On December 31, 2022, there were 10,817,110 shares of common stock outstanding (December 31, 2021: 10,747,417).

Repurchase of common shares:

(a) Normal Course Issuer Bids:

2023 Stock Buyback Program

On February 9, 2023, the Company announced that its Board of Directors ("Board") has approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 10, 2023 and is expected to terminated on February 9, 2024. Please see "Note 21 (a) - Subsequent Events" for more information on the 2023 stock buyback program.

2022 Stock Buyback Program

On February 10, 2022, the Company announced that its Board of Directors ("Board") have approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 11, 2022 and terminated on February 10, 2023. The Company did not repurchase shares under this program.

2021 Stock Buyback Program

On February 9, 2021, the Company announced that its Board of Directors ("Board") approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 10, 2021 and terminated on February 9, 2022. The Company did not repurchase shares under this program.

2020 Stock Buyback Program

On February 12, 2020, the Company announced that its Board has approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 13, 2020 and terminated on February 9, 2021. During year ended December 31, 2020, the Company repurchased 70,238 shares under this program for total consideration of $3.3 million.

2019 Stock Buyback Program

On February 13, 2019, the Company announced that its Board has approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 14, 2019 and terminated on February 12, 2020. During the year ended December 31, 2019, the Company repurchased 101,816 shares under this program, for a total of $5.0 million. During the year ended December 31, 2020 no repurchases were made under this program.

(b) Net Exercise of Stock Options

Our current equity-based compensation plans include provisions that allow for the "net exercise" of stock options by all plan participants. In a net exercise, any required payroll taxes, federal withholding taxes and exercise price of the shares due from the option holder can be paid for by having the option holder tender back to the Company a number of shares at fair value equal to the amounts due. These transactions are accounted for by the Company as a purchase and retirement of shares and are included in the table on the following page as common stock received in connection with share-based compensation.

The following table summarizes our share repurchase activity for the periods covered below (Dollar amounts in thousands of US dollars, except for share data):

	Year Ended December 31, 2022	2021	2020
Common stock repurchased on the open market or through tender offer			
Number of shares	-	-	70,238
Aggregate market value of shares (in thousands)	$ -	$ -	$ 3,281
Average price per share	$ -	$ -	$ 46.70
Common stock received in connection with share-based compensation			
Number of shares	3,053	45,824	48,013
Aggregate market value of shares (in thousands)	$ 197	$ 3,669	$ 2,957
Average price per share	$ 64.67	$ 80.07	$ 61.58

15. Stock Option Plans:

2006 Tucows Equity Compensation Plan

On November 22, 2006, the shareholders of the Company approved the Company's 2006 Equity Compensation Plan (the "2006 Plan"), which was amended and restated effective July 29, 2010 and which serves as a successor to the 1996 Plan. The 2006 Plan has been established for the benefit of the employees, officers, directors and certain consultants of the Company. The maximum number of common shares which have initially set aside for issuance under the 2006 Plan is 1.25 million shares. On October 8, 2010, the 2006 Plan was amended to increase the number of shares set aside for issuance by an additional 0.475 million shares to 1.725 million shares. In September 2015, the 2006 Plan was amended to increase the number of shares set aside for issuance by an additional 0.75 million shares to 2.475 million shares. In November 2020, the 2006 Plan was amended to increase the number of shares set aside for issuance by an additional 1.53 million shares to 4.0 million shares. Generally, options issued under the 2006 Plan vest over a four-year period and have a term not exceeding seven years, except for automatic formula grants of non-qualified stock options, which vest after one year and have a five-year term. Prior to the September 2015 amendment to the 2006 Plan, automatic formula grants of non-qualified stock options vested immediately upon grant.

Our current equity-based compensation plans include provisions that allow for the "net exercise" of stock options by all plan participants. In a net exercise, any required payroll taxes, federal withholding taxes and exercise price of the shares due from the option holder can be paid for by having the option holder tender back to the Company a number of shares at fair value equal to the amounts due. These transactions are accounted for by the Company as a purchase and retirement of shares.

The fair value of each option grant ("Company Option") is estimated on the date of grant using the Black-Scholes option-pricing model. Because option-pricing models require the use of subjective assumptions, changes in these assumptions can materially affect the fair value of the options. The assumptions presented in the table below represent the weighted average of the applicable assumption used to value stock options at their grant date. The Company calculates expected volatility based on historical volatility of the Company's common shares. The expected term, which represents the period of time that options granted are expected to be outstanding, is estimated based on historical exercise experience. The Company evaluated historical exercise behavior when determining the expected term assumptions. The risk-free rate assumed in valuing the options is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the option. The Company determines the expected dividend yield percentage by dividing the expected annual dividend by the market price of Tucows Inc. common shares at the date of grant.

The fair value of Company Options granted during the years ended December 31, 2022, December 31, 2021 and December 31, 2020 was estimated using the following weighted average assumptions:

	Year Ended December 31, 2022	2021	2020
Volatility	34.9%	35.7%	39.0%
Risk-free interest rate	3.4%	0.8%	1.8%
Expected life (in years)	4.60	4.60	4.54
Dividend yield	0.0%	0.0%	0.0%
The weighted average grant date fair value for options issued, with the exercise price equal to market value on the date of grant	$ 14.93	$ 24.83	$ 19.98

Details of Company Option transactions are as follows:

	Year Ended December 31, 2022		Year Ended December 31, 2021		Year Ended December 31, 2020	
	Number of shares	Weighted average exercise price per share	Number of shares	Weighted average exercise price per share	Number of shares	Weighted average exercise price per share
Outstanding, beginning of period	904,151	$ 64.36	845,020	$ 55.31	754,497	$ 49.94
Granted	262,980	42.15	282,625	79.30	239,325	61.21
Exercised	(40,459)	31.95	(179,321)	45.04	(113,132)	30.53
Forfeited	(55,234)	68.11	(41,240)	65.72	(26,468)	60.29
Expired	(34,690)	58.92	(2,933)	60.70	(9,202)	58.96
Outstanding, end of period	1,036,748	59.97	904,151	64.36	845,020	55.31
Options exercisable, end of period	520,679	$ 62.74	415,925	$ 56.44	401,345	$ 49.21

As of December 31, 2022, the exercise prices, weighted average remaining contractual life of outstanding options and intrinsic values were for Company Options were as follows:

Exercise price	Options outstanding: Number outstanding	Options outstanding: Weighted average exercise price per share	Options outstanding: Weighted average remaining contractual life (years)	Options outstanding: Aggregate intrinsic value	Options exercisable: Number exercisable	Options exercisable: Weighted average exercise price per share	Options exercisable: Weighted average remaining contractual life (years)	Options exercisable: Aggregate intrinsic value
$30.70 - $30.74	20,000	$ 30.71	6.9	$ 64	-	$ -	-	$ -
$40.04 - $48.00	236,830	42.37	6.1	-	7,000	47.29	2.1	-
$51.82 - $59.98	198,508	55.72	1.7	-	192,958	55.72	1.6	-
$60.01 - $68.41	316,485	62.08	3.6	-	222,878	62.67	3.3	-
$70.13 - $79.51	248,425	78.41	5.2	-	90,906	77.59	4.9	-
$80.61 - $82.07	16,500	81.27	5.8	-	6,937	81.60	5.8	-
	1,036,748	$ 59.97	4.3	$ 64	520,679	$ 62.74	3.0	$ -

Total unrecognized compensation cost relating to unvested Company Options at December 31, 2022, prior to the consideration of expected forfeitures, is approximately $8.2 million and is expected to be recognized over a weighted average period of 2.6 years.

The total intrinsic value of Company Options exercised during the years ended December 31, 2022, December 31, 2021 and December 31, 2020 was $0.8 million, $6.4 million and $3.7 million, respectively. Cash received from the exercise of stock options during the years ended December 31, 2022, December 31, 2021 and December 31, 2020 was $1.1 million, $4.8 million and $1.0 million respectively.

2022 Wavelo Equity Compensation Plan

On November 9, 2022 the Board of Wavelo approved Wavelo's Equity Compensation Plan (ECP), which has been established for the benefit of the employees, officers, directors and certain consultants of Wavelo or Tucows. The Wavelo stock options were introduced in order to provide variable compensation that helps retain executives and ensures that our executives' interests are aligned with those stakeholders of the business to grow long-term value. Wavelo is a wholly owned subsidiary of Tucows. The maximum number of Wavelo common shares which have been set aside for issuance under the 2022 Plan is 20 million shares, currently there are 100 million shares outstanding. The options issued under the ECP primarily vest over a period of three years and have a 7-year term. For the initial grants under the plan, the first 25% became exercisable within three months and vesting ratably monthly thereafter, after the third year. Compensation costs for awards of stock-based compensation settled in shares are determined based on the fair value of share-based instrument at the time of the grant and are recognized as expense over the vesting period of the share-based instrument. The Company recognizes forfeitures as they occur.

The fair value of each option grant is estimated on the date of grant using the Black-Scholes option-pricing model. Because option-pricing models require the use of subjective assumptions, changes in these assumptions can materially affect the fair value of the options. The assumptions presented in the table below represent the weighted average of the applicable assumption used to value stock options at their grant date. The Company calculates expected volatility based on the actual volatility of comparable publicly traded companies. The expected term, which represents the period of time that options granted are expected to be outstanding, is estimated based on historical exercise experience. The Company evaluated historical exercise behavior when determining the expected term assumptions. The risk-free rate assumed in valuing the options is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the option. The Company assumes the expected dividend yield to be zero.

The fair value of stock options granted during the year ended December 31, 2022 was estimated using the following weighted average assumptions:

	Year Ended December 31, 2022	2021	2020
Volatility	40.7%	N/A	N/A
Risk-free interest rate	4.4%	N/A	N/A
Expected life (in years)	4.16	N/A	N/A
Dividend yield	0.0%	N/A	N/A
The weighted average grant date fair value for options issued, with the exercise price equal to fair value of subsidiary shares on the date of grant	$ 0.49	N/A	N/A

Details of Wavelo's stock option transactions are as follows:

	Year Ended December 31, 2022		Year Ended December 31, 2021		Year Ended December 31, 2020	
	Number of shares	Weighted average exercise price per share	Number of shares	Weighted average exercise price per share	Number of shares	Weighted average exercise price per share
Outstanding, beginning of period	-	$ -	N/A	N/A	N/A	N/A
Granted	15,975,528	1.27	N/A	N/A	N/A	N/A
Exercised	-	-	N/A	N/A	N/A	N/A
Forfeited	-	-	N/A	N/A	N/A	N/A
Expired	-	-	N/A	N/A	N/A	N/A
Outstanding, end of period	15,975,528	1.27	N/A	N/A	N/A	N/A
Options exercisable, end of period	-	$ -	N/A	N/A	N/A	N/A

As of December 31, 2022, the exercise prices, weighted average remaining contractual life of outstanding options and intrinsic values were for Wavelo stock options were as follows:

	Options outstanding				Options exercisable			
Exercise price	Number outstanding	Weighted average exercise price per share	Weighted average remaining contractual life (years)	Aggregate intrinsic value	Number exercisable	Weighted average exercise price per share	Weighted average remaining contractual life (years)	Aggregate intrinsic value
$0.00 - $1.27	15,975,528	$ 1.27	6.9	$ -	$ -	$ -	-	$ -
	15,975,528	$ 1.27	6.9	$ -	$ -	$ -	-	$ -

Total unrecognized compensation cost relating to unvested Wavelo stock options at December 31, 2022, prior to the consideration of expected forfeitures, is approximately $5.9 million and is expected to be recognized over a weighted average period of 2.9 years.

The Company recorded stock-based compensation for Company options amounting to $5.8 million, $4.6 million and $3.7 million for the years ended December 31, 2022, 2021 and 2020 respectively. Stock-based compensation for the Company stock has been included in operating expenses as follows (Dollar amounts in thousands of US dollars):

	Year Ended December 31,		
	2022	2021	2020
Network expenses	$ 399	$ 531	$ 472
Sales and marketing	1,498	1,941	1,678
Technical operations and development	545	824	756
General and administrative	3,337	1,296	812
	$ 5,779	$ 4,592	$ 3,718

Stock-based compensation for the Wavelo stock options has been included in operating expenses as follows (Dollar amounts in thousands of US dollars):

	Year Ended December 31,		
	2022	2021	2020
Network expenses	$ 104	$ -	$ -
Sales and marketing	508	-	-
Technical operations and development	407	-	-
General and administrative	801	-	-
	$ 1,820	$ -	$ -

16. Foreign Exchange:

A foreign exchange loss amounting to $0.2 million has been recorded in general and administrative expenses during the year ended December 31, 2022. A foreign exchange loss amounting to $0.4 million has been recorded in general and administrative expenses during the year ended December 31, 2021. A foreign exchange gain amounting to $0.4 million has been recorded in general and administrative expenses during the year ended December 31, 2020.

17. Other Income (Expenses):

On August 1, 2020, the Company entered into an Asset Purchase Agreement (the "Purchase Agreement"), by and between the Company and DISH Wireless L.L.C.("DISH"). Under the Purchase Agreement and in accordance with the terms and conditions set forth therein, the Company sold to DISH its mobile customer accounts that are marketed and sold under the Ting brand (other than certain customer accounts associated with one network operator) ("Transferred Assets"). For a period of 10 years following the execution of the Purchase Agreement, DISH will pay a monthly fee to the Company generally equal to an amount of net revenue received by DISH in connection with the transferred customer accounts minus certain fees and expenses, as further set forth in the Purchase Agreement. During the year ended December 31, 2022, the Company earned $18.5 million under the Purchase Agreement.

On August 1, 2020, the Company derecognized intangible assets and capitalized contract costs associated with the Transferred Assets in the amount of $3.5 million. As an accounting policy, the Company only records contingent consideration when the consideration is resolved. As such the Company will continue to record contingent consideration in Other income as the consideration is invoiced on a monthly basis over the 10-year period following the execution of the Purchase Agreement. The income is presented net of the original cost base of the Transferred Assets:

	For the twelve months ended		
	2022	2021	2020
Write-down of Ting Mobile intangible assets	$ -	$ -	$ (2,581)
Write-down of Ting Mobile contract costs	-	-	(932)
Income earned on sale of Transferred Assets	18,507	20,030	11,125
Income earned on sale of Ting customer assets	$ 18,507	$ 20,030	$ 7,612

18. Earnings Per Common Share:

The following table reconciles the numerators and denominators of the basic and diluted earnings per common share computation (Dollar amounts in thousands of US dollars, except for share data):

	Year ended December 31,		
	2022	2021	2020
Numerator for basic and diluted earnings per common share:			
Net income for the period	$ (27,571)	$ 3,364	$ 5,775
Denominator for basic and diluted earnings per common share:			
Basic weighted average number of common shares outstanding	10,769,280	10,662,337	10,590,684
Effect of outstanding stock options	-	155,132	101,597
Diluted weighted average number of shares outstanding	10,769,280	10,817,468	10,692,281
Basic earnings per common share	$ (2.56)	$ 0.32	$ 0.55
Diluted earnings per common share	$ (2.56)	$ 0.31	$ 0.54

For the year ended December 31, 2022, the Company recorded a net loss, thus all outstanding options were considered anti-dilutive and excluded from the computation of diluted income per common share.

For the year ended December 31, 2021, options to purchase 39,889 common shares were outstanding (2020: 83,177) but were not included in the computation of diluted income per common share because the options' exercise price was greater than the average market price of the common shares for the year.

19. Commitments and Contingencies:

(a) The Company has several non-cancelable lease and purchase obligations primarily for general office facilities, service contracts for mobile telephone services and equipment that expire over the next ten years. Future minimum payments under these agreements are as follows (Dollar amounts in thousands of US dollars):

Contractual Obligations for the year ending December 31,	Contractual Lease Obligations	Debt Obligations	Redeemable preferred share financing Obligations	Capital Purchase Obligations	Purchase Obligations (1)	Total Obligations
2023	$ 5,198	$ -	$ -	$ 35,082	$ 13,947	$ 54,227
2024	4,657	239,700	6,882	-	16,489	267,728
2025	3,186	-	17,691	-	15,266	36,143
2026	1,669	-	17,691	-	2,394	21,754
2027	951	-	17,691	-	722	19,364
Thereafter	3,218	-	127,131	-	3,446	133,795
	$ 18,879	$ 239,700	$ 187,086	$ 35,082	$ 52,264	$ 533,011

(1) Purchase obligations include all other legally binding service contracts for mobile telephone services and other operational agreements to be delivered during Fiscal 2023 and subsequent years.
(2) Purchase obligations include minimum revenue commitments of $39.5 million with the Company's MNO partner between 2023 and 2026.

(b) On February 9, 2015 Ting Fiber, Inc.(“Ting”) entered into a lease and network operation agreement with the City of Westminster, Maryland (the “City”) relating to the deployment of a new fiber network throughout the Westminster area (“WFN”).

Under the agreement, the City will finance, construct, and maintain the WFN which will be leased to Ting for a period of ten years. The network will be constructed in phases, the scope and timing of which shall be determined by the City, in cooperation with Ting.

Under the terms of the agreement, Ting may be required to advance funds to the City in the event of a quarterly shortfall between the City’s revenue from leasing the network to Ting and the City’s debt service requirements relating to financing of the network. Ting could be responsible for shortfalls between $50,000 and $150,000 per quarter. In Fiscal 2016, the City has entered into financing for the construction of the WFN which allows the City to draw up to $21.0 million, from their lenders, over the next five years with interest only payments during that period with a loan maturity of 30 years. As of December 31, 2022, the City has drawn $16.2 million and the City’s revenues from Ting exceed the City’s debt service requirements. The Company does not believe it will be responsible for any shortfall in Fiscal 2023.

(c) On September 17, 2018 Ting entered into a non-exclusive access and use agreement with SiFi Networks Fullerton, LLC (“SiFi”). The agreement memorializes a long-term (15-year) relationship wherein Ting will be granted the non-exclusive right to act as an Internet service provider for a fiber-optic network to be constructed in the city of Fullerton, California. Under the terms of the agreement, SiFi is fully responsible for constructing, operating and maintaining a wholesale fiber-optic network, as well as the financing of those activities.

Ting is responsible for paying a fee per subscriber to SiFi. Through a “take or pay” arrangement, Ting has agreed to certain minimum charges based on minimum subscriber rates. These minimum fees are variable based on the percentage completion of the fiber optic network, and thus have not been considered an unconditional purchase obligation for the purposes of the table in Note 19(a).

(d) On November 4, 2019 Ting entered into an access and use agreement with Netly, LLC (“Netly”). The agreement memorializes a long-term (12-year) relationship wherein Ting will be granted the right to act as an Internet service provider for fiber-optic networks to be constructed in and around the cities of Solana Beach, California. Under the terms of the agreement, Ting will have a 3-year “Headstart” period over each completed segment of the network, whereby Ting shall be the exclusive provider of services to subscribers during the “Headstart” period. Netly is fully responsible for constructing, operating and maintaining a wholesale fiber optic network, as well as the financing of those activities.

Ting is responsible for paying a fee per subscriber to Netly, as well as an unlit door fee for each serviceable address not subscribed. Through a “take or pay” arrangement, Ting has agreed to certain minimum charges based on minimum subscriber rates. To the extent that construction of the fiber optic network is complete, our minimum commitments have been included in the contractual lease obligations of the table in Note 18 (a). With respect to future obligations based on the future construction of the fiber optic network, these minimum fees are variable and thus have not been considered an unconditional purchase obligation for the purposes of the table in Note 19(a).

(e) On January 7, 2022, Ting Fiber, Inc., entered into a 25-year lease agreement with Colorado Springs Utilities (“CSU”), a municipally owned utility. The lease agreement names Ting Fiber the anchor tenant on a city-wide fiber network that is intended to pass 200,000 homes in Colorado Springs, Colorado. CSU expects to begin construction of the fiber network by the third quarter of 2022. The lease obligates Ting, and its ultimate parent Tucows, Inc., to pay a per month fee for addresses passed by the network (as they are passed and become serviceable for customers to connect to the network) and for certain fiber infrastructure, including co-location space. Total costs of the lease, over its twenty-five-year term, are approximately $593,000,000 based on a fully completed fiber-to-the-home network, however the minimum fees are variable based on the percentage completion of the fiber optic network, and thus have not been considered an unconditional purchase obligation for the purposes of the table in Note 19(a).

(f) On May 11, 2022, Ting Fiber, LLC, entered into a "Rights-of-Way" agreement with the City of Alexandria, Virginia whereby the City granted Ting Fiber the right to install, place, construct, maintain, operate, upgrade, repair, and replace a Communications System to provide Broadband Services within the Public Rights-of-Way (a space in, upon, above, along, across, over and below the public and City-owned property that is used as a public rights-of-way) for a fee. Per the agreement, Ting Fiber is to pay the City throughout the 20-year term of the agreement, an amount equal to 3% of Ting Fiber's Broadband Revenues once the network is live, and subscribers are obtained, and this fee is to be paid on a quarterly basis. The agreement commences once Ting Fiber has launched the network in Alexandria, the current estimated launch date is March 2023. Since these fees are currently variable in nature, they have not been considered an unconditional purchase obligation for the purposes of the table in Note 19(a).

(g) In the normal course of its operations, the Company becomes involved in various legal claims and lawsuits. The Company intends to vigorously defend these claims. While the final outcome with respect to any actions or claims outstanding or pending as of December 31, 2021 cannot be predicted with certainty, management does not believe that the resolution of these claims, individually or in the aggregate, will have a material adverse effect on the Company's financial position.

20. Segment Reporting:

Reportable operating segments:

We are organized and managed based on three operating segments which are differentiated primarily by their services, the markets they serve and the regulatory environments in which they operate. No operating segments have been aggregated to determine our reportable segments.

During the first quarter of 2022, the Company completed a reorganization of its reporting structure into three operating and reportable segments: Ting, Wavelo and Tucows Domains. Previously, the Company disclosed the three operating and reportable segments: Fiber Internet Services, Mobile Services and Domain Services. The retail portion of the previously disclosed Mobile Services, including the earn-out of the sale of legacy subscribers are now included within Tucows Corporate and ISP platform revenues and related results previously included within Ting are now included within Wavelo.

The change to our reportable operating segments was the result of a shift in our business and management structures that was completed during the first quarter of 2022. The operations supporting what was previously known as our Mobile Services segment have become increasingly operationally distinct between our mobile retail services and our platform services. As a result, commencing in the first quarter of 2022, our Chief Executive Officer ("CEO"), who is also our chief operating decision maker, reviews the operating results of Fiber Internet Services, Platform Services and Domains Services as three distinct segments in order to make key operating decisions as well as evaluate segment performance. Certain revenues and expenses disclosed under the Corporate category are excluded from segment EBITDA results as they are centrally managed and not monitored by or reported to our CEO by segment, including Mobile Retail Services, eliminations of intercompany transactions, portions of Finance and Human Resources that are centrally managed, Legal and Corporate IT. In the third quarter of 2022, the Company renamed its three operating and reportable segments to reflect their branded names: Ting, Wavelo and Tucows Domains, previously called Fiber Internet Services, Platform Services and Domain Services, respectively. There were no changes to the activities or financial results attributed to each segment.

Our reportable operating segments and their principal activities consist of the following:

1. Ting - This segment derives revenue from the retail high speed Internet access to individuals and small businesses primarily through the Ting website. Revenues are generated in the United States.

2. Wavelo – This segment derives revenue from platform and other professional services related to communication service providers, including Mobile Network Operators and Internet Service Providers, and are primarily generated in the United States.

3. Tucows Domains – This segment includes wholesale and retail domain name registration services, value added services and portfolio services. The Company primarily earns revenues from the registration fees charged to resellers in connection with new, renewed and transferred domain name registrations; the sale of retail Internet domain name registration and email services to individuals and small businesses. Domain Services revenues are attributed to the country in which the contract originates, primarily Canada and the United States.

Our segmented results include shared services allocations, including a profit margin, from Tucows Corporate for Finance, Human Resources and other technical services, to the operating units. In addition, Wavelo charges Ting a subscriber based monthly charge services rendered. Financial impacts from these allocations and cross segment charges are eliminated as part of the Tucows Corporate results.

Key measure of segment performance:

The CEO, as the chief operating decision maker, regularly reviews the operations and performance by segment. The CEO reviews segment revenue, gross margin and adjusted EBITDA (as defined below) as (i) key measures of performance for each segment and (ii) to make decisions about the allocation of resources. Sales and marketing expenses, technical operations and development expenses and general and administrative expenses and not reviewed or managed by the CEO separate from adjusted EBITDA, and are thus not included as separate measurements of segment profitability. Depreciation of property and equipment, amortization of intangibles assets, impairment of indefinite life intangible assets, gain on currency forward contracts and other expense net are organized along functional lines and are not included in the measurement of segment profitability. Total assets and total liabilities are centrally managed and are not reviewed at the segment level by the CEO.

Our key measures of segment performance and their definitions are:

1. Segment gross margin - Net revenues less Direct cost of revenues attributable to each segment.

2. Segment adjusted EBITDA - segment gross margin as well as the recurring gain on sale of Ting Customer Assets, less network expenses and certain operating expenses attributable to each segment, such as sales and marketing, technical operations and development, general and administration expenses but excludes gains and losses from unrealized foreign currency, stock-based compensation and transactions that are not indicative of on-going performance, including acquisition and transition costs. Certain revenues and expenses disclosed under the Tucows Corporate category are excluded from segment EBITDA results as they are centrally managed and not monitored by or reported to our CEO by segment, including Mobile Retail Services, eliminations of intercompany transactions, portions of Finance and Human Resources that are centrally managed, Legal and Corporate IT.

The Company believes that both segment gross margin and adjusted EBITDA measures are important indicators of the operational strength and performance of its segments, by identifying those items that are not directly a reflection of each segment's performance or indicative of ongoing operational and profitability trends. Segment gross margin and segment adjusted EBITDA both exclude depreciation of property and equipment, amortization of intangibles assets, impairment of indefinite life intangible assets that are included in the measurement of income before provision for income taxes pursuant to generally accepted accounting principles ("GAAP"). Total assets and total liabilities are centrally managed and are not reviewed at the segment level by the CEO.

Information by reportable segments (with the exception of disaggregated revenue, which is discussed in "Note 10 – Revenue"), which is regularly reported to the chief operating decision maker, and the reconciliations thereof to our income before taxes, are set out in the following tables (Dollar amounts in thousands of US dollars):

	Ting	Wavelo	Tucows Domains	Tucows Corporate	Consolidated Totals
Year Ended December 31, 2022					
Net Revenues					
External Revenues	$ 42,425	$ 23,632	$ 243,158	$ 11,927	$ 321,142
Intersegment Revenues	-	712	-	(712)	-
Total Net Revenues	42,425	24,344	243,158	11,215	321,142
Direct cost of revenues	17,004	2,926	166,890	9,448	196,268
Segment Gross Margin	25,421	21,418	76,268	1,767	124,874
Network, other costs					17,433
Network, depreciation of property and equipment					27,589
Network, amortization of intangible assets					1,512
Network, impairment of property and equipment					92
Gross profit					78,248
Expenses:					
Sales and marketing					53,937
Technical operations and development					14,187
General and administrative					30,845
Depreciation of property and equipment					598
Loss on disposition of property and equipment					461
Amortization of intangible assets					9,882
Loss (gain) on currency forward contracts					-
Total expenses					109,910
Income (Loss) from operations					(31,662)
Other income (expenses):					
Interest expense, net					(14,456)
Income earned on sale of transferred assets, net					18,507
Other expense, net					(177)
Total other income (expenses)					3,874
Income (Loss) before provision for income taxes					$ (27,788)
Adjusted EBITDA	$ (21,557)	$ 3,875	$ 44,834	$ 10,438	$ 37,590

	Ting	Wavelo	Tucows Domains	Tucows Corporate	Consolidated Totals
Year Ended December 31, 2021					
Net Revenues					
External Revenues	$ 25,327	$ 16,781	$ 245,576	$ 16,653	$ 304,337
Intersegment Revenues	-	-	-	-	-
Total Net Revenues	25,327	16,781	245,576	16,653	304,337
Direct cost of revenues	12,035	1,308	167,488	12,208	193,039
Segment Gross Margin	13,292	15,473	78,088	4,445	111,298
Network, other costs					14,769
Network, depreciation of property and equipment					17,452
Network, amortization of intangible assets					583
Network, impairment of property and equipment					201
Gross profit					78,293
Expenses:					
Sales and marketing					39,471
Technical operations and development					14,310
General and administrative					22,370
Depreciation of property and equipment					534
Loss (gain) on disposition of property and equipment					234
Amortization of intangible assets					9,424
Impairment of definite life intangible assets					(277)
Gain on currency forward contracts					-
Total expenses					86,066
Income (Loss) from operations					(7,773)
Other income (expenses):					
Interest expense, net					(4,617)
Gain on sale of Ting customer assets, net					20,030
Other expense, net					(370)
Total other income (expenses)					15,043
Income (Loss) before provision for income taxes					$ 7,270
Adjusted EBITDA	$ (18,778)	$ 7,334	$ 47,765	$ 12,500	$ 48,821

	Ting	Wavelo	Tucows Domains	Tucows Corporate	Consolidated Totals
Year Ended December 31, 2020					
Net Revenues					
External Revenues	$ 17,151	$ 1,839	$ 242,254	$ 49,958	$ 311,202
Intersegment Revenues	-	-	-	-	-
Total Net Revenues	17,151	1,839	242,254	49,958	311,202
Direct cost of revenues	6,856	183	167,451	25,911	200,401
Segment Gross Margin	10,295	1,656	74,803	24,047	110,801
Network, other costs					10,194
Network, depreciation of property and equipment					12,144
Network, amortization of intangible assets					1,340
Network, impairment of property and equipment					1,638
Gross profit					85,485
Expenses:					
Sales and marketing					34,274
Technical operations and development					12,427
General and administrative					20,268
Depreciation of property and equipment					488
Loss (gain) on disposition of property and equipment					(17)
Amortization of intangible assets					10,080
Impairment of definite life intangible assets					1,431
Gain on currency forward contracts					(383)
Total expenses					78,568
Income (Loss) from operations					6,917
Other income (expenses):					
Interest expense, net					(3,611)
Gain on sale of Ting customer assets, net					7,612
Other expense, net					(158)
Total other income (expenses)					3,843
Income (Loss) before provision for income taxes					$ 10,760
Adjusted EBITDA	$ (6,349)	$ (5,381)	$ 46,158	$ 16,545	$ 50,973

Reconciliation of Income before Provision for Income Taxes to Adjusted EBITDA (In Thousands of US Dollars)	**Twelve months ended December 31, 2022**	**2021**	**2020**
Net Income for the period	$ (27,571)	$ 3,364	$ 5,775
Less:			
Provision for income taxes	(217)	3,906	4,985
Depreciation of property and equipment	28,187	17,986	12,632
Impairment and loss on disposition of property and equipment	553	435	1,621
Amortization of intangible assets	11,394	10,007	11,420
Impairment of definite life intangible assets	-	-	1,431
Write-down on disposal of Ting Mobile customer assets	-	-	3,513
Interest expense, net	14,456	4,617	3,611
Accretion of contingent liability	248	383	344
Stock-based compensation	7,599	4,592	3,718
Unrealized loss (gain) on change in fair value of foreign currency forward contracts	-	606	(500)
Unrealized loss (gain) on foreign exchange revaluation of foreign denominated monetary assets and liabilities	281	219	461
Acquisition and other costs[1]	2,660	2,706	1,962
Adjusted EBITDA	$ 37,590	$ 48,821	$ 50,973

[1] Acquisition and other costs represents transaction-related expenses, transitional expenses, such as redundant post-acquisition expenses, primarily related to our acquisition of Cedar in January 2020 and Simply Bits in November 2021 and the disposition of certain Ting Mobile assets in August 2020. Expenses include severance or transitional costs associated with department, operational or overall company restructuring efforts, including geographic alignments.

(b) The following is a summary of the Company's cost of revenues from each significant revenue stream (Dollar amounts in thousands of US dollars):

	2022	2021	2020
Ting:			
Fiber Internet Services	$ 17,004	$ 12,035	$ 6,856
Wavelo:			
Platform Services	1,294	504	183
Other professional services	1,632	804	-
Total Wavelo	2,926	1,308	183
Tucows Domains:			
Wholesale			
Domain Services	147,894	147,213	146,788
Value Added Services	2,514	2,544	3,016
Total Wholesale	150,408	149,757	149,804
Retail	16,482	17,731	17,647
Total Tucows Domains	166,890	167,488	167,451
Tucows Corporate:			
Mobile Services and eliminations	9,448	12,208	25,911
Network Expenses:			
Network, other costs	17,433	14,769	10,194
Network, depreciation and amortization costs	29,101	18,035	13,484
Network, impairment	92	201	1,638
Total Network Expenses	46,626	33,005	25,316
	$ 242,894	$ 226,044	$ 225,717

(c) The following is a summary of the Company's property and equipment by geographic region (Dollar amounts in thousands of US dollars):

	December 31, 2022	December 31, 2021
Canada	$ 1,240	$ 1,994
United States	280,219	170,630
Europe	36	38
	$ 281,495	$ 172,662

(d) The following is a summary of the Company's amortizable intangible assets by geographic region (Dollar amounts in thousands of US dollars):

	December 31, 2022	December 31, 2021
Canada	$ 2,736	$ 1,386
United States	24,770	36,732
	$ 27,506	$ 38,118

(e) The following is a summary of the Company's deferred tax asset, net of valuation allowance, by geographic region (Dollar amounts in thousands of US dollars):

	December 31, 2022	December 31, 2021
Canada	$ -	$ 22
	$ -	$ 22

(f) Valuation and qualifying accounts (Dollar amounts in thousands of US dollars):

Allowance for doubtful accounts	Balance at beginning of period	Charged to costs and expenses	Write-offs during period	Balance at end of period
Year Ended December 31, 2022	$ 541	$ 152	$ -	$ 693
Year Ended December 31, 2021	$ 222	$ 319	$ -	$ 541

21. Subsequent Events:

***a**. 2023 Stock Buyback Program*

On February 9, 2023, the Company announced that its Board of Directors ("Board") has approved a stock buyback program to repurchase up to $40 million of its common stock in the open market. The $40 million buyback program commenced on February 10, 2023 and is expected to terminated on February 9, 2024. The previously announced $40 million buyback program for the period February 11, 2022 to February 10, 2023 was terminated. According to the terms of our Third Amended 2019 Credit Facility, share repurchases require the Lenders' consent if the Company's Total Funded Debt to Adjusted EBITDA ratio exceeds 2.00:1.

b. Issuance of Preferred Units by Ting Fiber, LLC

On January 30, 2023, the Company issued and sold an additional 5,000,000 units of its Series A Preferred Units to Generate at a cash purchase price of $6.00 per unit pursuant to the Unit Purchase Agreement. The Milestone Funding provided the Company with an additional $30.0 million of capital and reduced Generate's future capital commitment under the Unit Purchase Agreement to $82.5 million.

c. *Amending Agreement No.2 to the Third Amended and Restated Senior Secured Credit Agreement*

On March 14, 2023 the Company entered into an Amending Agreement No.2 (the "Credit Agreement Amendment") to the Third Amended and Restated Senior Secured Credit Agreement with its existing syndicate of lenders (The "Amended Credit Agreement"). The Amended Credit Agreement continues to provide the Company with access to an aggregate of $240 million in committed funds, however there is a suspension to the $60 million accordion during the relief period (the "Leverage Step Up Period"), which is defined as from Closing (March 14, 2023) to the date that the Company delivers a compliance certificate for the period ending on December 31, 2023 demonstrating compliance with financial covenants. Additionally, the Credit Agreement Amendment has extended the maturity of the Credit Facility to September 30, 2024. As a result of the closing of the Credit Agreement, the Company is subject to the following financial covenants at all times, with monthly testing during the Leverage Step Up Period and reverting to quarterly tests thereafter: (i) maximum Total Funded Debt to Adjusted EBITDA Ratio of 4.50:1.00 from March 14, 2023 up to and including September 29, 2023; 4.00:1.00 from September 30, 2023 up to and including December 30, 2023; and 3.75:1.00 thereafter; and (ii) minimum Interest Coverage Ratio of 3.00:1.00. On March 14, 2023 the Company made a repayment of $2.8 million on the Credit Facility.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

	Tucows Inc.
DATE: March 15, 2023	**By:** /s/ ELLIOT NOSS
	Name: Elliot Noss
	Title: *Chief Executive Officer and President*

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons of behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ ELLIOT NOSS Elliot Noss	President, Chief Executive Officer (Principal Executive Officer) and Director	March 15, 2023
/s/ DAVINDER SINGH Davinder Singh	Chief Financial Officer (Principal Financial and Accounting Officer)	March 15, 2023
/s/ ALLEN KARP Allen Karp	Director	March 15, 2023
/s/ Marlene Carl Marlene Carl	Director	March 15, 2023
/s/ ROBIN CHASE Robin Chase	Director	March 15, 2023
/s/ EREZ GISSIN Erez Gissin	Director	March 15, 2023
/s/ JEFFREY SCHWARTZ Jeffrey Schwartz	Director	March 15, 2023
/s/ BRAD BURNHAM Brad Burnham	Director	March 15, 2023

Exhibit 4.1

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

The following summary describes the common stock, no par value per share, of Tucows Inc. (the "Company", "our", "us", or "we"), which are the only securities of the Company registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The following is a summary and does not purport to be complete. The summary is subject to and qualified by the provisions of our Fourth Amended and Restated Articles of Incorporation (the "Articles"), Second Amended and Restated Bylaws (the "Bylaws"), and the Pennsylvania Business Corporation Law ("PBCL").

Authorized Capital Stock

Our authorized capital stock consists of 250,000,000 shares of common stock, no par value per share, and 1,250,000 shares of preferred stock, no par value per share, all of which shares of preferred stock are undesignated.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of shareholders, and will be entitled to receive dividends and other distributions when and if declared by our Board of Directors at any regular or special meeting, subject to the rights of the holders of shares of any series of preferred stock.

If we are liquidated, subject to the rights, if any, of the holders of any outstanding shares of preferred stock, the holders of shares of our common stock will be entitled to share, ratably according to the number of shares of common stock held by them, in our remaining assets available for distribution to our stock.

The holders of shares of our common stock will not have preemptive rights to purchase or subscribe for any stock or any other of our securities. There are no conversion, redemption, or sinking fund provisions applicable to our common stock.

Preferred Stock

Under the terms of the Articles, our Board of Directors is authorized to issue shares of preferred stock from time to time in one or more series without shareholder approval. Our Board of Directors has the full authority to fix by resolution full, limited, fractional, or no voting rights, and such designations, preferences, qualifications, privileges, limitations, restrictions, options, conversion rights and other special or relative rights of any series of preferred stock. This authority is subject to the limitation that no shares of preferred stock may have more than one vote per share with respect to any matter on which shares of preferred stock vote together with shares of our common stock.

Anti-takeover Provisions of the Articles, Bylaws, and Pennsylvania Law

The provisions of the PBCL, the Articles, and Bylaws may have the effect of delaying, deferring, or discouraging another person from acquiring control of the Company.

Pennsylvania Law

The PBCL has several anti-takeover provisions which apply to registered corporations. A registered corporation is generally a corporation that has a class or series of shares entitled to vote in the election of directors registered under the Exchange Act.

We are a registered corporation, however, we have elected to opt-out of substantially all of the anti-takeover provisions of the PBCL, specifically Subchapters 25E, G, H and Section 2538 of Subchapter 25D. These provisions do not apply to us.

We are subject to the provisions of Subchapter 25F of the PBCL prohibiting business combination transactions with a person that becomes a beneficial owner of shares representing 20% or more of the voting power in an election of our directors unless:

- the business combination or the acquisition of the 20% interest is approved by our Board of Directors before the 20% interest is acquired;
- the person beneficially owns at least 80% of the outstanding shares and the business combination is approved by a majority vote of the disinterested shareholders, and satisfies minimum price and other conditions prescribed in the PBCL;
- the business combination is approved by a majority vote of the disinterested shareholders at a meeting called no earlier than five years after the date the 20% interest is acquired; or
- the business combination is approved by shareholder vote at a meeting called no earlier than five years after the date the 20% interest is acquired, and satisfies minimum price and other conditions prescribed in the PBCL.

A "business combination" includes mergers, consolidations, asset sales, share exchanges, divisions of a registered corporation or any subsidiary thereof and other transactions resulting in a disproportionate financial benefit to an interested shareholder.

The above description of Subchapter 25F of the PBCL merely summarizes the material anti-takeover provisions applicable to us that are contained in the PBCL, but are not a complete discussion of those provisions.

The PBCL contains other provisions applicable to us that may have an anti-takeover effect. For instance, under Section 1715 of the PBCL, our directors are not required to consider the interests of the shareholders as being dominant or controlling in considering our best interests. Our directors may consider, to the extent they consider appropriate, such factors as:

- the effects of any action upon any group affected by such action, including our shareholders, employees, suppliers, customers and creditors and upon communities in which we have offices or other establishments;
- our short-term and long-term interests, including benefits that may accrue to us from our long term plans and the possibility that these interests may be best served by our continued independence;
- the resources, intent and conduct of any person seeking to acquire control of us; and
- all other pertinent factors.

Section 1715 further provides that any act of our Board of Directors, a committee of the Board of Directors or an individual director relating to or affecting an acquisition or potential or proposed acquisition of control to which a majority of our disinterested directors have assented will be presumed to satisfy the standard of care set forth in the PBCL, unless it is proven by clear and convincing evidence that our disinterested directors did not consent to such act in good faith after reasonable investigation. As a result of this and the other provisions of Section 1715, our directors are provided with broad discretion with respect to actions that may be taken in response to acquisitions or proposed acquisitions of corporate control.

Fourth Amended and Restated Articles of Incorporation

Shareholders of the Company do not have the right to cumulate their votes with respect to the election of directors.

Second Amended and Restated Bylaws

Board of Director Vacancies

The Bylaws provide that vacancies in the Board of Directors, including vacancies resulting from an increase in the number of directors, may be filled by a majority vote of the remaining members of the Board of Directors though less than a quorum, or by a sole remaining director.

Shareholder Action; Special Meeting of Shareholders

The Bylaws provide that shareholders may not take any action by unanimous written consent or partial consent in lieu of a meeting. The Bylaws further provide that a special meeting of shareholders may only be called by the Chief Executive Officer, the Chairman of the Board of Directors, or the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors.

Advance Notice Requirements for Shareholder Proposals and Director Nominations

The Bylaws provide advance notice procedures for shareholders seeking to bring business before our annual meeting of shareholders, or to nominate candidates for election as directors at our annual meeting of shareholders. To be timely, a shareholder’s notice must be delivered, in writing, to the Secretary at our principal executive offices not more than 90 days nor less than 60 days prior to the date on which the Company first mailed its proxy materials for the preceding year’s annual meeting if the date of the annual meeting is not more than 30 days before and not more than 30 days after the first anniversary of the preceding year’s annual meeting. If the date of the annual meeting is more than 30 days before or more than 30 days after the first anniversary of the preceding year’s annual meeting, a shareholder’s notice must be delivered not more than 120 days nor less than 90 days prior to such annual meeting, or no later than the tenth day following the public announcement of the annual meeting.

For a special meeting, to be timely, a shareholder notice must be delivered, in writing, to the Secretary at our principal executive offices not more than 90 days nor less than 60 days prior to the date of such special meeting, and no later than the tenth day following the public announcement of a special meeting.

The Bylaws also specify certain requirements regarding the form and content of the shareholder's notice.

These provisions might preclude our shareholders from bringing matters before our annual meeting of shareholders or special meetings or making nominations for directors at our annual meetings or special meetings.

Listing

Our common stock is listed on the NASDAQ Capital Market under the symbol "TCX" and on the TSX Exchange under the symbol "TC".

<u>AMENDING AGREEMENT NO. 1</u>

THIS AMENDING AGREEMENT NO. 1 (this "**<u>Amending Agreement</u>**") is made as of November 2, 2022.

WHEREAS:

A. Reference is made to the third amended and restated senior secured credit agreement dated as of August 8, 2022 between, *inter alios*, Tucows.com Co., Tucows (Delaware) Inc., Ting Inc., Tucows (Emerald), LLC and Wavelo, Inc., as borrowers (collectively, the "**<u>Borrowers</u>**" and each a "**<u>Borrower</u>**"), Tucows Inc., as parent (the "**<u>Parent</u>**"), Royal Bank of Canada, as administrative agent (the "**<u>Agent</u>**"), and the financial institutions party thereto, as lenders (the "**<u>Lenders</u>**") (the "**<u>Credit Agreement</u>**").

B. The Borrowers, the Parent, the Agent and the Lenders wish to amend the Credit Agreement as provided herein.

NOW THEREFORE THIS AGREEMENT WITNESSES that, in consideration of the mutual covenants and agreements contained in this Amending Agreement and for other good and valuable consideration, the receipt and sufficiency of which are acknowledged, the parties hereto agree as follows:

ARTICLE 1
INTERPRETATION

1.1 Defined Terms. In this Amending Agreement, unless something in the subject matter or context is inconsistent:

(a) terms defined in the description of the parties or in the recitals have the respective meanings given to them in the description or recitals, as applicable; and

(b) all other capitalized terms have the respective meanings given to them in the Credit Agreement as amended by Article Two of this Amending Agreement (collectively, the "**<u>Amended Credit Agreement</u>**").

1.2 Headings. The headings of the Articles and Sections of this Amending Agreement are inserted for convenience of reference only and shall not affect the construction or interpretation of this Amending Agreement.

1.3 References. All references to Articles, Sections, Exhibits and Schedules, unless otherwise specified, are to Articles, Sections, Exhibits and Schedules of the Credit Agreement.

ARTICLE 2
AMENDMENTS

2.1 **Amendments**. Effective as of the date hereof:

(a) the definition of "Change of Control" in Section 1.01 of the Credit Agreement is hereby amended by adding the following additional words in the parenthetical in clause (iv) thereof immediately after the words "Majority Lenders":

"and other than Wavelo, Inc. as a result of the issuance of common stock of Wavelo, Inc. pursuant to the Wavelo Stock Option Plan provided that the Parent shall retain ownership at all times of, directly or indirectly, not less than 80% of the common stock of Wavelo, Inc.".

(b) Section 1.01 of the Credit Agreement is hereby amended by adding the following new definition of "Wavelo Stock Option Plan":

"Wavelo Stock Option Plan" means the "2022 Equity Compensation Plan" of Wavelo, Inc. effective September 23, 2022, a full, true complete copy of which has been provided to the Agent and the Lenders.

(c) Section 8.01(9) of the Credit Agreement is hereby amended by adding the following words at the end of the second sentence thereof immediately prior to the "." therein:

"other than in the case of Wavelo, Inc. as a result of the issuance of common stock of Wavelo, Inc. pursuant to the Wavelo Stock Option Plan".

(d) Section 9.02(7) of the Credit Agreement is hereby amended by deleting the word "and" at the beginning of clause (iv) thereof and adding the following immediately prior to the "." at the end of clause (iv) thereof:

"; and (v) so long as no Default or Event of Default has occurred and is continuing or would result therefrom, purchases of common stock of Wavelo, Inc. issued pursuant to the Wavelo Stock Option Plan, (a) at any time that the Total Funded Debt to Adjusted EBITDA Ratio is less than 2.00:1 (both before and after giving effect to any such share repurchases and any Funded Debt incurred in connection therewith) or (b) at any time that the Total Funded Debt to Adjusted EBITDA Ratio is equal to or greater than 2.00:1 (both before and after giving effect to any such share repurchases and any Funded Debt incurred in connection therewith), in an aggregate amount not to exceed $1,000,000 in any Financial Year".

(e) Section 9.02(13) of the Credit Agreement is hereby amended by adding the following words immediately after the words "2022 Reorganization":

"and the Wavelo Stock Option Plan"

(f) Section 9.02(17) of the Credit Agreement is hereby amended by adding thefollowing at the end of clause (i) thereof immediately prior to the ";" therein:

"other than amendments made to the constating documents of Wavelo, Inc. to permit the Wavelo Stock Option Plan; provided that the Parent shall not, directly or indirectly, nor shall it permit Wavelo, Inc. to, directly or indirectly, amend the terms and conditions of the Wavelo Stock Option Plan nor the constating documents of Wavelo, Inc. in a manner that would be prejudicial in any material respect to the interests of the Agent or any of the Lenders under the Loan Documents except (a) with the consent of the Agent, or (b) to the extent necessary to bring any such documents into compliance with any applicable law or regulation, including, without limitation, for the purpose of preventing taxation of Wavelo, any grantee or transferee under the Wavelo Stock Option Plan with respect to any grant under the Wavelo Stock Option Plan under Section 409A of the Internal Revenue Code of 1986, as amended (provided that, with respect to amendments pursuant to clause (b), Wavelo shall provide prior written notice of the same to the Agent)".

ARTICLE 3
REPRESENTATIONS AND WARRANTIES

3.1 Confirmation of Representations. The Parent and each Borrower represents and warrants that, as at the date of this Amending Agreement and assuming that the amendments made to the Credit Agreement by this Amending Agreement have become effective:

(a) this Amending Agreement has been duly authorized, executed and delivered by each of the signatory Loan Parties;

(b) the Credit Agreement, as amended hereby, constitutes a legal, valid and binding obligation of the Borrower, enforceable in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditor's rights generally and subject to general principles of equity, regardless of whether considered in a proceeding in equity or at law;

(c) no Default or Event of Default has occurred and is continuing; and

(d) the representations and warranties contained in Article 8 of the Credit Agreement are true and correct in all material respect as if made on the date hereof, except to the extent such representations and warranties specifically refer to an earlier date, in which case they are true and correct as of such earlier date.

ARTICLE 4
CONDITIONS

4.1 Conditions Precedent. This Amending Agreement shall become effective on the date upon which there has been receipt by the Agent of a counterpart of this Amending Agreement executed by each party hereto.

ARTICLE 5
GENERAL

5.1 Confirmation. Except as specifically stated herein, Credit Agreement and the other Loan Documents shall continue in full force and effect in accordance with the provisions thereof. In particular but without limitation the Parent, the Borrowers and each of the Guarantors hereby acknowledge and agree that:

(a) the Guaranties and the Security provided by it in favour of the Agent and the Secured Parties continues in full force and effect notwithstanding the execution and delivery of this Amending Agreement and the amendments to the Credit Agreement effected hereby;

(b) such guarantees and indemnities extend to the indebtedness, liabilities and obligations of the Borrowers under the Amended Credit Agreement; and

(c) the secured liabilities described in the Security include indebtedness, liabilities and obligations arising under or in relation to the Amended Credit Agreement, and the Liens granted thereunder extend thereto.

5.2 Interpretation. All references to the “this Agreement” or the “Credit Agreement” and all similar references in any of the other Loan Documents shall hereafter include, mean and be a reference to the Amended Credit Agreement without any requirement to amend such Loan Documents. This Amending Agreement shall constitute a “Loan Document” under, and as defined in, the Credit Agreement.

5.3 Binding Nature. This Amending Agreement shall enure to the benefit of and be binding upon the Borrowers, the Parent, the Agent and the Lenders and their respective successors and permitted assigns.

5.4 Severability. Any provision of this Amending Agreement which is prohibited or unenforceable in any jurisdiction shall, as to that jurisdiction, be ineffective to the extent of such prohibition or unenforceability and shall be severed from the balance of this Amending Agreement, all without affecting the remaining provisions of this Amending Agreement or affecting the validity or enforceability of such provision in any other jurisdiction.

5.5 Conflicts. If, after the date of this Amending Agreement, any provision of this Amending Agreement is inconsistent with any provision of the Credit Agreement, the relevant provision of this Amending Agreement shall prevail.

5.6 Governing Law. This Amending Agreement will be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.

5.7 Counterpart and Facsimile. This Amending Agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same instrument. Delivery of an executed signature page to this Amending Agreement by any party by facsimile or other form of electronic transmission shall be as effective as delivery of a manually executed copy of this Amending Agreement by such party.

[signatures on the following pages]

IN WITNESS WHEREOF the undersigned has caused this Amending Agreement to be duly executed as of the date set out on the first page.

ROYAL BANK OF CANADA, as Agent

By: /s/ Helena Sadowski
Name: Helena Sadowski
Title: Manager, Agency

ROYAL BANK OF CANADA, as Lender, Swingline Lender and Fronting Letter of Credit Lender

By: /s/ Brad Clarkson
Name: Brad Clarkson
Title: Director, Corporate Client Group, Mid-Market Leverage and Infrastructure Finance

By:
Name:
Title:

BANK OF MONTREAL, as Lender

By: /s/ Daniel Pichini
Name: Daniel Pichini
Title: Director, Commercial Banking

By:
Name:
Title:

BANK OF NOVA SCOTIA, as Lender

By: /s/ Mitch Gillingwater
Name: Mitch Gillingwater
Title: Director, National Accounts

By: /s/ Sebastian Reveredo
Name: Sebastian Reveredo
Title: Director, National Accounts

HSBC BANK CANADA, as Lender

By: /s/ Gregory Mancina
Name: Gregory Mancina
Title: Director, Corporate Banking

By: /s/ Jordan Stewart
Name: Jordan Stewart
Title: Senior Director & Team Lead

CANADIAN IMPERIAL BANK OF COMMERCE, as Lender

By: /s/ Mark McQueen
Name: Mark McQueen
Title: Executive MD, Authorized Signatory

By: /s/ Adam Weiers
Name: Adam Weiers
Title: Executive Director, Authorized Signatory

THE TORONTO-DOMINION BANK, as Lender

By: /s/ Justin Whiteside
Name: Justin Whiteside
Title: Director, National Accounts

By: /s/ Tabish Anjum
Name: Tabish Anjum
Title: Senior Manager, Commercial Credit

TUCOWS INC., as Parent

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS.COM CO., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TING INC., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS (EMERALD), LLC, as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

WAVELO, INC., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS (DELAWARE) INC., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

Acknowledged and agreed to as of the date first written above.

ENOM, LLC, as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS DOMAINS INC., as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

ASCIO TECHNOLOGIES, CORP., as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS DOMAINS SERVICES, INC., as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

<u>**AMENDING AGREEMENT NO. 2**</u>

THIS AMENDING AGREEMENT NO. 2 (this "**<u>Amending Agreement</u>**") is made as of March 14, 2023.

WHEREAS:

A. Reference is made to the third amended and restated senior secured credit agreement dated as of August 8, 2022 between, *inter alios*, Tucows.com Co., Tucows (Delaware) Inc., Ting Inc., Tucows (Emerald), LLC and Wavelo, Inc., as borrowers (collectively, the "**<u>Borrowers</u>**" and each a "**<u>Borrower</u>**"), Tucows Inc., as parent (the "**<u>Parent</u>**"), Royal Bank of Canada, as administrative agent (the "**<u>Agent</u>**"), and the financial institutions party thereto, as lenders (the "**<u>Lenders</u>**") (as amended by amending agreement no. 1 dated as of November 2, 2022, the "**<u>Credit Agreement</u>**").

B. The Borrowers, the Parent, the Agent and the Lenders wish to amend the Credit Agreement as provided herein.

NOW THEREFORE THIS AGREEMENT WITNESSES that, in consideration of the mutual covenants and agreements contained in this Amending Agreement and for other good and valuable consideration, the receipt and sufficiency of which are acknowledged, the parties hereto agree as follows:

ARTICLE 1
INTERPRETATION

1.1 Defined Terms. In this Amending Agreement, unless something in the subject matter or context is inconsistent:

(a) terms defined in the description of the parties or in the recitals have the respective meanings given to them in the description or recitals, as applicable; and

(b) all other capitalized terms have the respective meanings given to them in the Credit Agreement as amended by Article Two of this Amending Agreement (collectively, the "**<u>Amended Credit Agreement</u>**").

1.2 Headings. The headings of the Articles and Sections of this Amending Agreement are inserted for convenience of reference only and shall not affect the construction or interpretation of this Amending Agreement.

1.3 References. All references to Articles, Sections, Exhibits and Schedules, unless otherwise specified, are to Articles, Sections, Exhibits and Schedules of the Credit Agreement.

ARTICLE 2
AMENDMENTS

2.1 Amendments. Effective as of the date hereof:

(a) The definition of "Applicable Commitment Fee Rate" in Section 1.01 of the Credit Agreement is hereby amended by replacing the words "in respect of any Financial Quarter" in the third sentence thereof with "in respect of any Rolling Period".

(b) The definition of "Applicable Margin" in Section 1.01 of the Credit Agreement is hereby amended by replacing the words "in respect of any Financial Quarter" in the fifth sentence thereof with "in respect of any Rolling Period".

(c) The definition of "Interest Coverage Ratio" in Section 1.01 of the Credit Agreement is hereby deleted in its entirety and replaced with the following:

"Interest Coverage Ratio" means, in respect of any Rolling Period, the ratio of (i) Adjusted EBITDA for such Rolling Period to (ii) Interest Expense for such Rolling Period.

(d) The following new definition of "Leverage Step Up Period" is hereby added to Section 1.01 of the Credit Agreement in the proper alphabetical order:

"Leverage Step Up Period" means the period commencing on March 14, 2023 to and including the date that the Parent delivers a Compliance Certificate to the Agent pursuant to Section 9.01(1)(c) for the Rolling Period ending on December 31, 2023, demonstrating that it is in compliance with the financial covenants in Section 9.03 hereof.

(e) The definition of "Maturity Date" in Section 1.01 of the Credit Agreement is hereby deleted in its entirety and replaced with the following:

"Maturity Date" means September 30, 2024.

(f) The following new definition of "Rolling Period" is hereby added to Section 1.01 of the Credit Agreement in the proper alphabetical order:

"Rolling Period" means each Financial Quarter taken together with the three immediately preceding Financial Quarters; provided that, for purposes of calculating the financial covenants in Section 9.03 for the calendar months ending on April 30, 2023, May 31, 2023, July 31, 2023, August 31, 2023, October 31, 2023 and November 30, 2023 "Rolling Period" shall mean the relevant calendar month together with the eleven calendar months immediately preceding such calendar month.

(g) The definition of "Total Funded Debt to Adjusted EBITDA Ratio" in Section 1.01 of the Credit Agreement is hereby deleted in its entirety and replaced with the following:

"Total Funded Debt to Adjusted EBITDA Ratio" means, at any time, the ratio of (i) Total Funded Debt at such time less cash or Cash Equivalents of the Parent and Guarantors in an aggregate amount of not more than $5,000,000 on deposit with the Agent or one or more of the Lenders in respect of which the Agent (for the benefit of itself and the other Secured Parties) has a first priority Lien; to (ii) Adjusted EBITDA for the relevant Rolling Period in respect of which the Parent has delivered a Compliance Certificate hereunder.

(h) The first sentence of Section 2.14(1) of the Credit Agreement is hereby deleted in its entirety and replaced with the following:

From time to time by notice in writing to the Agent, given at least 180 days prior to the Maturity Date, the Parent may request that the Commitment be increased, such increase to be in a minimum amount of $10,000,000 for any one increase (and integrals of $1,000,000), to a maximum aggregate increase in the Commitments taken as a whole of $60,000,000 (each such increase of the Commitment being an "**Increased Commitment**"); provided that, the Parent shall not be permitted to make a request for an Increased Commitment at any time during the Leverage Step Up Period.

(i) Section 6.02 is hereby amended by replacing the words "(in each case for the last four Financial Quarters in respect of which the Agent and the Lenders have received a Compliance Certificate hereunder)" with the words "(in each case for the relevant Rolling Period in respect of which the Agent and the Lenders have received a Compliance Certificate hereunder)".

(j) Paragraph (c) in Section 9.01(1) is deleted in its entirety and replaced with the following:

(c) (i) concurrently with the financial statements furnished pursuant to (a) and (b) above, a Compliance Certificate duly executed by a senior officer or other qualified officer of the Parent, demonstrating compliance with the financial covenants in Section 9.03 hereof, a management discussion and analysis in respect of any material variances between the actual results to date and the projections contained in the most recent Annual Business Plan presented to the Agent and the Lenders and concurrently with the financial statements furnished pursuant to (b) above, a management prepared reconciliation of such financial statements to remove the financial results of Ting Fiber, LLC and its subsidiaries from the financial results of the Parent, and (ii) with respect to the calendar months ending on April 30, 2023, May 31, 2023, July 31, 2023, August 31, 2023, October 31, 2023 and November 30, 2023, as soon as available and in any event within 30 days after the end of each such calendar month, a Compliance Certificate duly executed by a senior officer or other qualified officer of the Parent, including an income statement, and demonstrating compliance with the financial covenants in Section 9.03 hereof; and

(k) Section 8.01(6) of the Credit Agreement is hereby amended by replacing the words "required to be delivered for the Financial Quarter in which such Material Authorization was obtained" with "required to be delivered pursuant to Section 9.01(1)(c) hereof".

(l) Section 9.01(1)(a) of the Credit Agreement is hereby amended by replacing the words “Fiscal Quarter” with the words “Financial Quarter”.

(m) Sections 9.03(1) and (2) of the Credit Agreement are hereby deleted in their entirety and replaced with the following:

(1) **Leverage Ratio**. Maintain, at all times, a Total Funded Debt to Adjusted EBITDA Ratio of not more than (i) 4.0:1:00 at any time from and after the date hereof to and including March 13, 2023; (ii) 4.5:1:00 from March 14, 2023 to and including September 29, 2023; (iii) 4.0:1.00 from September 30, 2023 to and including December 30, 2023; and (iv) 3.75:1.00 thereafter.

(2) **Interest Coverage Ratio.** Maintain, as at the end of each Rolling Period, an Interest Coverage Ratio of not less than 3.00:1.00.

(n) The following new sentence is hereby added to the end of Section 9.02(3) of the Credit Agreement:

Notwithstanding the foregoing or any other provision of this Agreement, the Parent shall not directly or indirectly sell or otherwise dispose of, or permit any of its Subsidiaries to sell or otherwise dispose of, any of its Assets with a fair market value in excess of $1,500,000, individually or in the aggregate, during the Leverage Step Up Period without the prior written consent of the Majority Lenders.

(o) The following new sentence is hereby added to the end of Section 9.02(5) of the Credit Agreement:

Notwithstanding the foregoing or any other provision of this Agreement, the Parent shall not make or acquire, or permit any of its Subsidiaries to make or acquire, any (i) Permitted Acquisitions pursuant to Section 9.02(5)(i) above in excess of $500,000, individually or in the aggregate, (ii) any further Investment in a Subsidiary of the Parent that is not a Loan Party or in any other Person pursuant to Section 9.02(5)(iii) above, or (iii) any Investment in Ting Fiber, LLC and its subsidiaries pursuant to Section 9.02(5)(vii) above, in each case, during the Leverage Step Up Period without the prior written consent of the Majority Lenders.

(p) Schedule 6 to the Credit Agreement is hereby deleted in its entirety and replaced with Schedule 6 attached hereto.

(q) The words “[Financial Quarter] [Financial Year]” in Schedule 9 to the Credit Agreement are hereby deleted and replaced with “[Rolling Period]”.

ARTICLE 3
REPRESENTATIONS AND WARRANTIES

3.1 Confirmation of Representations. The Parent, each Borrower and each Guarantor represents and warrants that, as at the date of this Amending Agreement and assuming that the amendments made to the Credit Agreement by this Amending Agreement have become effective:

(a) this Amending Agreement has been duly authorized, executed and delivered by each of the signatory Loan Parties;

(b) the Credit Agreement, as amended hereby, constitutes a legal, valid and binding obligation of the Parent, the Borrowers, and the Guarantors enforceable in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditor's rights generally and subject to general principles of equity, regardless of whether considered in a proceeding in equity or at law;

(c) no Default or Event of Default has occurred and is continuing; and

(d) the representations and warranties contained in Article 8 of the Credit Agreement are true and correct in all material respect as if made on the date hereof, except to the extent such representations and warranties specifically refer to an earlier date, in which case they are true and correct as of such earlier date.

ARTICLE 4
CONDITIONS

4.1 Conditions Precedent. This Amending Agreement shall become effective upon satisfaction of the following conditions precedent:

(a) the Agent shall have received from each party hereto a counterpart of this Amending Agreement signed on behalf of each party hereto;

(b) payment by the Parent to the Agent of an amending fee equal to U.S.$20,000 per Lender that has executed this Amending Agreement

(c) payment by the Parent to the Agent on account of the Lenders, as consideration for the Lenders agreeing to extend the Maturity Date pursuant to this Amending Agreement, an extension fee of 3 bps of the Commitment;

(d) payment by the Parent to the Agent, for its own account, of the arrangement fee pursuant to the amended and restated fee letter dated as of the date hereof between the Parent and the Agent; and

(e) payment of all other fees and other amounts due from the Parent, including, to the extent invoiced, reimbursement or payment of all reasonable legal fees in connection with this Amending Agreement or arrangements satisfactory to the Agent for payment of any such fees and other amounts at an agreed upon date.

ARTICLE 5
GENERAL

5.1 Confirmation. Except as specifically stated herein, Credit Agreement and the other Loan Documents shall continue in full force and effect in accordance with the provisions thereof. In particular but without limitation the Parent, the Borrowers and each of the Guarantors hereby acknowledge and agree that:

(a) the Guarantees and the Security provided by it in favour of the Agent and the Secured Parties continues in full force and effect notwithstanding the execution and delivery of this Amending Agreement and the amendments to the Credit Agreement effected hereby;

(b) such guarantees and indemnities extend to the indebtedness, liabilities and obligations of the Borrowers under the Amended Credit Agreement; and

(c) the secured liabilities described in the Security include indebtedness, liabilities and obligations arising under or in relation to the Amended Credit Agreement, and the Liens granted thereunder extend thereto.

5.2 Interpretation. All references to the “this Agreement” or the “Credit Agreement” and all similar references in any of the other Loan Documents shall hereafter include, mean and be a reference to the Amended Credit Agreement without any requirement to amend such Loan Documents. This Amending Agreement shall constitute a “Loan Document” under, and as defined in, the Credit Agreement.

5.3 Binding Nature. This Amending Agreement shall enure to the benefit of and be binding upon the Borrowers, the Parent, the Agent and the Lenders and their respective successors and permitted assigns.

5.4 Severability. Any provision of this Amending Agreement which is prohibited or unenforceable in any jurisdiction shall, as to that jurisdiction, be ineffective to the extent of such prohibition or unenforceability and shall be severed from the balance of this Amending Agreement, all without affecting the remaining provisions of this Amending Agreement or affecting the validity or enforceability of such provision in any other jurisdiction.

5.5 Conflicts. If, after the date of this Amending Agreement, any provision of this Amending Agreement is inconsistent with any provision of the Credit Agreement, the relevant provision of this Amending Agreement shall prevail.

5.6 Governing Law. This Amending Agreement will be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.

5.7 Counterpart and Facsimile. This Amending Agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same instrument. Delivery of an executed signature page to this Amending Agreement by any party by facsimile or other form of electronic transmission shall be as effective as delivery of a manually executed copy of this Amending Agreement by such party.

[signatures on the following pages]

IN WITNESS WHEREOF the undersigned has caused this Amending Agreement to be duly executed as of the date set out on the first page.

ROYAL BANK OF CANADA, as Agent

By: /s/ Helena Sadowski
Name: Helena Sadowski
Title: Manager, Agency

ROYAL BANK OF CANADA, as Lender, Swingline Lender and Fronting Letter of Credit Lender

By: /s/ Brad Clarkson
Name: Brad Clarkson
Title: Director, Corporate Client Group, Mid-Market Leverage and Infrastructure Finance

By: /s/ Andrea Heerdegen
Name: Andrea Heerdegen
Title: Authorized Signatory

BANK OF MONTREAL, as Lender

By: /s/ Paulina Kursa
Name: Paulina Kursa
Title: Managing Director

By: /s/ David Graham
Name: David Graham
Title: Managing Director & Team Lead

BANK OF NOVA SCOTIA, as Lender

By: /s/ Caitlin Furtado
Name: Caitlin Furtado
Title: Director, National Accounts

By: /s/ Sebastian Reveredo
Name: Sebastian Reveredo
Title: Director, National Accounts

HSBC BANK CANADA, as Lender

By: /s/ Ashley Charlton
Name: Ashley Charlton
Title: Relationship Director

By: /s/ Jordan Stewart
Name: Jordan Stewart
Title: Senior Director & Team Lead

CANADIAN IMPERIAL BANK OF COMMERCE, as Lender

By: /s/ Adam Weiers
Name: Adam Weiers
Title: Executive Director, Authorized Signatory

By: /s/ Jon Gross
Name: Jon Gross
Title: Associate, Authorized Signatory

THE TORONTO-DOMINION BANK, as Lender

By: /s/ Justin Whiteside
Name: Justin Whiteside
Title: Director, National Accounts

By: /s/ Kyla Rackley
Name: Kyla Rackley
Title: Associate Vice President Credit

TUCOWS INC., as Parent

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS.COM CO., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TING INC., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS (EMERALD), LLC, as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

WAVELO, INC., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS (DELAWARE) INC., as Borrower

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

Acknowledged and agreed to as of the date first written above.

ENOM, LLC, as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS DOMAINS INC., as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

ASCIO TECHNOLOGIES, CORP., as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

TUCOWS DOMAINS SERVICES, INC., as Guarantor

By: /s/ Davinder Singh
Name: Davinder Singh
Title: Chief Financial Officer

SCHEDULE 6

APPLICABLE COMMITMENT FEE AND APPLICABLE MARGINS

Level	Total Funded Debt to Adjusted EBITDA	Canadian Prime Rate / Base Rate Advances	BAs / Fixed Rate Advances / Letters of Credit	Applicable Commitment Fee Rate
1	<1.75x	25 bps	150 bps	30 bps
2	≥1.75 & <2.25x	50 bps	175 bps	35 bps
3	≥2.25 & <2.75x	100 bps	225 bps	45 bps
4	≥2.75 & <3.25x	125 bps	250 bps	50 bps
5	≥3.25 & <3.75x	150 bps	275 bps	55 bps
6	≥3.75x & <4.00x	175 bps	300 bps	60 bps
7	≥4.00x	225 bps	350 bps	70 bps

The applicable “Revolving Credit Facility Commitment Fee” and “Applicable Margins” are expressed herein in basis points per annum.

Exhibit 10.16

WAVELO, INC.

2022 EQUITY COMPENSATION PLAN

Effective September 23, 2022

TABLE OF CONTENTS

WAVELO, INC.

2022 EQUITY COMPENSATION PLAN

The purpose of the Wavelo, Inc. 2022 Equity Compensation Plan (the "Plan") is to provide (i) designated employees of Wavelo, Inc. (the "Company") and its subsidiaries, (ii) certain consultants and advisors who perform services for the Company or its subsidiaries (iii) non-employee members of the Board of Directors of the Company (the "Board"), (iv) certain employees of the Company's affiliates who provide direct services to the Company, and (v) certain employees of Tucows Inc. ("Tucows"), with the opportunity to receive grants of incentive stock options and nonqualified stock options, as set forth below; provided that the grants to the employees, consultants and advisors sent forth in clauses (i) through (v) satisfy applicable laws. The Company believes that the Plan will encourage the participants to contribute materially to the growth of the Company, thereby benefiting the Company's stockholders, and will align the economic interests of the participants with those of the Company's stockholders.

SECTION 1 Administration

(a) Committee. The Plan shall be administered and interpreted by the Board or by a committee consisting of members of the Board, which shall be appointed by the Board. However, the Board shall approve and administer all Grants (as defined below in Section 2) made to non-employee members of the Board. The Board or the committee may delegate authority to one or more subcommittees, or one or more Company officers, to the extent it deems appropriate. To the extent the Board, committee, subcommittee, or Company officer(s) administers the Plan pursuant to any such authority or delegated authority, references in the Plan and Grant Instrument to the "Committee" shall be deemed to refer to such Board, committee, subcommittee, or Company officer(s). Notwithstanding the foregoing, the Board may not delegate authority to one or more Company officers (i) to amend the Plan, (ii) to make determinations regarding employees who are subject to Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or (iii) to the extent such delegation would violate applicable law or applicable stock exchange rules.

(b) Committee Authority. The Committee shall have the sole authority to (i) determine the individuals to whom Grants shall be made under the Plan, (ii) determine the type, size and terms of the Grants to be made to each such individual, (iii) determine the time when the Grants will be made and the duration of any applicable exercise or restriction period, including the criteria for exercisability and vesting and the acceleration of exercisability and vesting, (iv) amend the terms of any previously issued Grant, and (v) resolve any other matters arising under the Plan.

(c) Committee Determinations. The Committee shall have full power and authority to administer and interpret the Plan, to make factual determinations and to adopt or amend such rules, regulations, agreements and instruments for implementing the Plan and for the conduct of its business as it deems necessary or advisable, in its sole discretion. The Committee's interpretations of the Plan and all determinations made by the Committee pursuant to the powers vested in it hereunder shall be conclusive and binding on all persons having any interest in the Plan or in any awards granted hereunder. All powers of the Committee shall be executed in its sole discretion, in the best interest of the Company, not as a fiduciary with respect to any Grantee or the beneficiaries of any Grantee, and in keeping with the objectives of the Plan and need not be uniform as to similarly situated individuals.

SECTION 2 Grants

Awards under the Plan may consist of grants (each a "Grant", and collectively referred to herein as "Grants") of incentive stock options ("Incentive Stock Options") and nonqualified stock options ("Nonqualified Stock Options"), each as described in Section 5 (Incentive Stock Options and Nonqualified Stock Options are collectively referred to as "Options"). All Grants shall be subject to the terms and conditions set forth herein and to such other terms and conditions consistent with this Plan as the Committee deems appropriate and as are specified in writing by the Committee to the individual in a grant instrument or an amendment to the grant instrument (the "Grant Instrument"). All Grants shall be made conditional upon the Grantee's (as defined below in Section 4(b)) acknowledgement, in writing or by acceptance of the Grant, that all decisions and determinations of the Committee shall be final and binding on the Grantee, the Grantee's beneficiaries and any other person having or claiming an interest under such Grant. Grants under a particular Section of the Plan need not be uniform as among the Grantees. At the time an Option is exercised, the Company shall deliver to the Grantee holding such Option the number of shares of Company Stock underlying the Option that the Grantee designates to be exercised, provided that the Committee may, in its discretion, and in lieu of issuing shares of Company Stock, elect to pay such Grantee a cash amount equal to the difference between the Fair Market Value of the number of shares of Company Stock exercised by the Grantee and the exercise price of such shares.

SECTION 3 Shares Subject to the Plan

(a) Shares Authorized. Subject to adjustment as described below, the aggregate number of shares of Company common stock, par value $0.001 per share ("Company Stock"), that may be issued or transferred under the Plan is 20,000,000 shares of Company Stock. The aggregate number of shares of Company Stock that may be issued or transferred under the Plan pursuant to Incentive Stock Options shall not exceed 20,000,000 shares of Company Stock.

(b) Determination of Authorized Shares. The shares referred to in Section 3(a) may be authorized but unissued shares of Company Stock or reacquired shares of Company Stock. If and to the extent Options granted under the Plan terminate, expire, or are canceled, forfeited, exchanged or surrendered without having been exercised, the shares subject to such Grants shall again be available for purposes of the Plan. To the extent the Committee elects, in its discretion, to pay a Grantee a cash amount equal to the difference between the Fair Market Value of a share of Company Stock underlying the Grant and the exercise price of such share, in lieu of issuing a share of Company Stock to such Grantee at the time a Grant is exercised, then such payment shall count as the issuance of a share under the Plan and such share shall not be available for purposes of the Plan.

(c) Adjustments. If there is any change in the number or kind of shares of Company Stock outstanding by reason of (i) a stock dividend, spinoff, recapitalization, stock split, reverse stock split or combination or exchange of shares, (ii) a merger, reorganization or consolidation, (iii) a reclassification or change in par value, or (iv) any other extraordinary or unusual event affecting the outstanding Company Stock as a class without the Company's receipt of consideration, or if the value of outstanding shares of Company Stock is substantially reduced as a result of a spinoff or the Company's payment of an extraordinary dividend or distribution, the maximum number of shares of Company Stock available for issuance under the Plan, the kind and number of shares covered by outstanding Grants, the kind and number of shares issued and to be issued under the Plan, and the price per share or the applicable market value of such Grants may be equitably adjusted by the Committee, in such a manner as the Committee deems appropriate, to reflect any increase or decrease in the number of, or change in the kind or value of, the issued shares of Company Stock to preclude, to the extent practicable, the enlargement or dilution of rights and benefits under the Plan and such outstanding Grants; provided, however, that any fractional shares resulting from such adjustment shall be eliminated. In addition, in the event of a Change of Control (as defined below in Section 9) of the Company, the provisions of Section 10 of the Plan shall apply. Any adjustments to outstanding Grants shall be consistent with Section 409A or 424 of the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder (the "Code"), to the extent applicable. Any adjustments determined by the Committee shall be final, binding and conclusive.

SECTION 4 Eligibility for Participation

(a) Eligible Persons. All employees of the Company and of any of its Controlled Subsidiaries, as defined below in this Section 4(a) ("Employees"), including Employees who are officers or members of the Board, and members of the Board who are not Employees ("Non-Employee Directors") shall be eligible to participate in the Plan. Consultants and advisors who perform direct services for the Company or any of its Controlled Subsidiaries ("Key Advisors"), and employees of Tucows or of any subsidiary or affiliate of the Company who perform direct services for the Company or any of its Controlled Subsidiaries ("Affiliate Employees") shall be eligible to participate in the Plan if the Key Advisors or Affiliate Employees, as applicable, render bona fide direct services to the Company or its Controlled Subsidiaries, the services are not in connection with the offer and sale of securities in a capital-raising transaction and the Key Advisors or Affiliate Employees, as applicable, do not directly or indirectly promote or maintain a market for the Company's securities. In addition, an employee of Tucows or subsidiary or affiliate thereof shall be eligible to participate in the Plan, if, during such individual's taxable year in which any Option is granted to such individual, any amount that might otherwise be included in such individual's income for that year with respect to such Option (including but not limited to Sections 83 and 409A of the Code) is excludable for Federal income tax purposes pursuant to any bilateral or multilateral convention, agreement or treaty to which the United States is a party ("Nonresident Alien Employee"). Each Grant to a Grantee must be compliant with applicable law including Section 409A of the Code (to the extent not exempt from Section 409A of the Code). A "Controlled Subsidiary" for purposes of the Plan is any direct or indirect subsidiary of the Company in which the Company has a controlling interest under Treas. Reg. Section 1.414(c)-1(b)(2) (except that 50% shall be substituted for 80% wheresoever it may appear therein), and any other subsidiary of the Company in which the Company has a controlling interest for purposes of Treas. Reg. Section 1.409A-1(b)(5).

(b) Selection of Grantees. The Committee shall select the Employees, Non-Employee Directors, Key Advisors, Affiliate Employees, and Nonresident Alien Employees, to receive Grants and shall determine the number of shares of Company Stock subject to a particular Grant in such manner as the Committee determines. Employees, Key Advisors, Non-Employee Directors, Affiliate Employees, and Nonresident Alien Employees, who receive Grants under this Plan shall be referred to herein as "Grantees." No person may be a Grantee in any year who is not eligible to participate in the Plan under Section 4(a) in such year.

SECTION 5 Options

The Committee may grant Options to a person eligible to be a Grantee upon such terms as the Committee deems appropriate. The following provisions are applicable to Options:

(a) Number of Shares. The Committee shall determine the number of shares of Company Stock that will be subject to each Grant of Options to Grantees.

(b) Type of Option and Price.

(i) The Committee may grant Incentive Stock Options that are intended to qualify as "incentive stock options" within the meaning of Section 422 of the Code or Nonqualified Stock Options that are not intended so to qualify or any combination of Incentive Stock Options and Nonqualified Stock Options, all in accordance with the terms and conditions set forth herein. Incentive Stock Options may be granted only to employees of the Company or a subsidiary corporation or a parent corporation (within the meaning of Section 424(f) of the Code) of the Company. Nonqualified Stock Options may be granted to any person eligible to be a Grantee, subject to applicable law.

(ii) The purchase price (the "Exercise Price") of Company Stock subject to an Option shall be determined by the Committee and shall be equal to or greater than the Fair Market Value (as defined below in Section 5(b)(iii)) of a share of Company Stock on the date the Option is granted. However, an Incentive Stock Option may not be granted to an Employee who, at the time of grant, owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any subsidiary of the Company, unless the Exercise Price per share is not less than 110% of the Fair Market Value of Company Stock on the date of grant.

(iii) "Fair Market Value" of Company Stock means, unless the Committee determines otherwise with respect to a particular Grant, (i) if the principal trading market for the Company Stock is a national securities exchange, the last reported sale price during regular trading hours of Company Stock on the relevant date or (if there were no trades on that date) the last reported sale price during the regular trading hours on the latest preceding date upon which a sale was reported, (ii) if the Company Stock is not principally traded on such exchange, the mean between the last reported "bid" and "asked" prices of Company Stock during regular trading hours on the relevant date, as reported on the OTC Bulletin Board, or (iii) if the Company Stock is not publicly traded or, if publicly traded, is not so reported, the Fair Market Value per share shall be as determined by the Committee through any reasonable valuation method authorized under the Code.

(c) Option Term. The Committee shall determine the term of each Option. The term of any Option shall not exceed seven years from the date of grant. However, an Incentive Stock Option that is granted to an Employee who, at the time of grant, owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company, or any subsidiary of the Company, may not have a term that exceeds five years from the date of grant.

(d) Exercisability of Options. Options shall become exercisable in accordance with such terms and conditions, consistent with the Plan, as may be determined by the Committee and specified in the Grant Instrument. The Committee may accelerate the exercisability of any or all outstanding Options at any time for any reason.

(e) Grants to Non-Exempt Employees. Notwithstanding any provision of the Plan to the contrary, Options granted to persons who are non-exempt employees under the Fair Labor Standards Act of 1938, as amended, may not be exercisable for at least six months after the date of grant (except that such Options may become exercisable, as determined by the Committee, upon the Grantee's death, Disability (as defined below in Section 5(f)(v)(B)) or retirement, or upon a Change of Control or other circumstances permitted by applicable regulations).

(f) Termination of the Option.

(i) Except as provided below or as otherwise determined by the Committee, an Option may only be exercised while the Grantee is employed by, or providing service to, the Employer (as defined below in Section 5(f)(v)(C)) as an Employee, Non-Employee Director, Key Advisor, Affiliate Employee, or Nonresident Alien Employee.

(ii) In the event that a Grantee ceases to be employed by, or provide service to, the Employer for any reason other than on account of Cause or the Grantee's Disability or death, any Option which is otherwise exercisable by the Grantee on the date Grantee ceases to be employed by, or provide service to, the Employer, shall terminate unless exercised within 90 days after the date on which the Grantee ceases to be employed by, or provide service to, the Employer (or within such other period of time as may be specified by the Committee in the Grant Instrument or otherwise), but in any event no later than the date of expiration of the Option term. Except as otherwise provided by the Committee, any of the Grantee's Options that are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(iii) In the event the Grantee ceases to be employed by, or provide service to, the Employer on account of the Grantee's Disability, any Option which is otherwise exercisable by the Grantee on the date the Grantee ceases to be employed by, or provide service to, the Employer, shall terminate unless exercised within one year after the date on which the Grantee ceases to be employed by, or provide service to, the Employer (or within such other period of time as may be specified by the Committee in the Grant Instrument or otherwise), but in any event no later than the date of expiration of the Option term. Except as otherwise provided by the Committee, any of the Grantee's Options which are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(iv) If the Grantee dies while employed by, or providing service to, the Employer, or within 90 days after the date on which the Grantee ceases to be employed or provide service to the Employer on account of a termination specified in Section 5(f)(ii) above, any Option that is otherwise exercisable by the Grantee shall terminate unless exercised within one year after the date on which the Grantee ceases to be employed by, or provide service to, the Employer (or within such other period of time as may be specified by the Committee in the Grant Instrument or otherwise), but in any event no later than the date of expiration of the Option term. Except as otherwise provided by the Committee, any of the Grantee's Options that are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(v) If a Grantee's services or employment are terminated by the Employer for Cause, any Option which is otherwise exercisable by the Grantee on the date Grantee ceases to be employed by, or provide service to, the Employer, shall terminate immediately. Except as otherwise provided by the Committee, any of the Grantee's Options that are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(vi) For purposes of the Plan:

(A) "Cause" shall have the meaning given to that term in any written employment agreement, offer letter or severance agreement between the Employer and the Grantee, or if no such agreement exists or if such term is not defined therein, and unless otherwise defined in the Grant Instrument, "Cause" shall mean a finding by the Committee that the Grantee has (i) materially breached his or her employment or service contract, or any other contract or written agreement, with the Employer or the Company, (ii) engaged in consistent poor performance after being advised as to the standard required, (iii) intentionally disclosed, or any grossly negligent disclosure of, any of the Company's or the Employer's confidential information, (iv) violated any local, state/provincial, or federal statute, including without limitation, an act of dishonesty such as embezzlement or theft, (v) engaged in conduct that is materially detrimental to the business or the financial position of the Company, or (vi) personal conduct on the part of the Grantee which is of such a serious and substantial nature that it is reasonably likely to cause harm to the reputation of the Company or the Grantee's Employer if the Grantee were retained as an employee or service provider.

(B) "Disability" shall mean a Grantee's becoming disabled within the meaning of Section 22(e)(3) of the Code, within the meaning of the Employer's long-term disability plan applicable to the Grantee, or as otherwise determined by the Committee.

(C) "Employed by, or provide service to, the Employer" shall mean employment or service as an Employee, Non-Employee Director, Key Advisor, Affiliate Employee or Tucows Employee (so that, for purposes of exercising Options, a Grantee shall not be considered to have terminated employment or service until the Grantee ceases to be an Employee, Non-Employee Director, Key Advisor, Affiliate Employee or Tucows Employee), unless the Committee determines otherwise. All variations of "employed by, or provide service to, the employer" shall account for different verb tenses and shall have the same meaning as set forth in this paragraph.

(D) "Employer" shall mean Tucows, the Company, the Company's subsidiaries, and an entity that is a subsidiary of Tucows and an affiliate of the Company, in each case as determined by the Committee.

(E) "Good Reason" shall mean the occurrence of one or more of the following without the Grantee's consent, other than on account of the Grantee's disability: (i) a change by the Employer of more than fifty miles in the Grantee's principal place of employment or service, excluding for the avoidance of doubt, remote work arrangements and travel for business in the course of performing Grantee's duties for the Employer, (ii) a material diminution in the Grantee's base salary, except for any diminution that is part of a broad-based diminution affecting other employees of the Employer, and (iii) any action or inaction that constitutes a material breach by the Company of this Grant Instrument. The Grantee must provide written notice of termination for Good Reason to the Employer within 30 days after the event constituting Good Reason. The Employer shall have a period of 30 days in which it may correct the act or failure to act that constitutes the grounds for Good Reason as set forth in the Grantee's notice of termination. If the Employer does not correct the act or failure to act, the Grantee's employment or service will terminate for Good Reason on the first business day following the Employer's 30-day cure period.

(g) Exercise of Options. A Grantee may exercise an Option that has become exercisable, in whole or in part, by delivering a notice of exercise to the Company. The Grantee shall pay the Exercise Price for an Option as specified in the Grantee's Grant Instrument. The Grantee shall pay the Exercise Price and the amount of any Withholding Taxes due (pursuant to Section 6 below) at such time as may be specified by the Committee.

(h) Limits on Incentive Stock Options. Each Incentive Stock Option shall provide that, if the aggregate Fair Market Value of the stock on the date of the grant with respect to which Incentive Stock Options are exercisable for the first time by a Grantee during any calendar year, under the Plan or any other stock option plan of the Company or a subsidiary, exceeds $100,000, then the Option, as to the excess, shall be treated as a Nonqualified Stock Option. An Incentive Stock Option shall not be granted to any person who is not an Employee of the Company or a subsidiary (within the meaning of Section 424(f) of the Code) of the Company.

SECTION 6 Withholding of Taxes

(a) Required Withholding. All Grants under the Plan shall be subject to withholding of applicable income tax (including U.S. federal, state, and local tax and/or foreign income tax), employment tax (including FICA), payroll tax, social security tax, social insurance, contributions, payment on account obligations, national and local tax or other amounts required to be withheld, collected or accounted for by the Employer in connection with any taxable event with respect to the Grant (the "Withholding Taxes"). The Employer may require that the Grantee or other person receiving or exercising Grants pay to the Employer the amount of any Withholding Taxes with respect to such Grants, or the Employer may deduct from other wages paid by the Employer the amount of any Withholding Taxes due with respect to such Grants.

(b) Election to Withhold Shares. If the Committee so permits, a Grantee may elect to satisfy the Employer's obligation for Withholding Taxes with respect to Grants paid in Company Stock by having shares withheld that have a Fair Market Value equal to the amount of tax to be withheld. Share withholding for taxes shall be based on the Grantee's minimum applicable tax withholding rate, or such other rate permitted by the Committee that does not cause adverse accounting consequences. The election must be in a form and manner prescribed by the Committee and may be subject to the prior approval of the Committee.

SECTION 7 Transferability of Grants

(a) Nontransferability of Grants. Except as provided below, only the Grantee may exercise rights under a Grant during the Grantee's lifetime. A Grantee may not transfer those rights except (i) by will or by the laws of descent and distribution or (ii) with respect to Grants other than Incentive Stock Options, if permitted in any specific case by the Committee, pursuant to a domestic relations order or otherwise as permitted by the Committee consistent with the applicable securities laws and Section 7(c) below. When a Grantee dies, the personal representative or other person entitled to succeed to the rights of the Grantee may exercise such rights. Any such successor must furnish proof satisfactory to the Company of his or her right to receive the Grant under the Grantee's will or under the applicable laws of descent and distribution.

(b) Transfer of Nonqualified Stock Options. Notwithstanding the foregoing, the Committee may provide, in a Grant Instrument, that a Grantee may transfer Nonqualified Stock Options to family members, or one or more trusts or other entities for the benefit of or owned by family members, consistent with the applicable securities laws, according to such terms as the Committee may determine; provided that the Grantee receives no consideration for the transfer of an Option and the transferred Option shall continue to be subject to the same terms and conditions as were applicable to the Option immediately before the transfer.

(c) Prohibition on Certain Transactions. Prior to the date the Company first becomes subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, outstanding Grants under the Plan, together with the shares of Company Stock subject to such Grants, shall not be the subject of any hedge transactions. Except as otherwise provided above in this Section 7 or in Section 8 or Section 9 below, until the date the Company first becomes subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, outstanding Grants under the Plan, together with the shares of Company Stock subject to such Grants, shall not be the subject of any pledges, gifts, hypothecations or other transfers. In addition, all Grants and the Company Stock underlying such Grants under the Plan shall be subject to any applicable hedging, pledging and other policies, that may be implemented by the Board from time to time.

SECTION 8 Right of First Refusal; Repurchase Right

(a) Right of First Refusal.

(i) Offer. Prior to the consummation of a Public Offering, if at any time an individual desires to sell, encumber, or otherwise dispose of shares of Company Stock that were distributed to him or her under this Plan and that are transferable, the individual may do so only pursuant to a bona fide written offer, and the individual shall first offer the shares to the Company by giving the Company written notice disclosing: (i) the name of the proposed transferee of the Company Stock, (ii) the certificate number and number of shares of Company Stock proposed to be transferred or encumbered, (iii) the proposed price, (iv) all other terms of the proposed transfer, and (v) a written copy of the proposed offer. Within 60 days after receipt of such notice, the Company shall have the option to purchase all or part of such Company Stock at the price and on the terms described in the written notice.

(ii) Sale. In the event the Company (or a stockholder, as described below) does not exercise the option to purchase Company Stock, as provided in subsection 8(a)(i) above, the individual shall have the right to sell, encumber, or otherwise dispose of the shares of Company Stock described in subsection (8)(a)(i) at the price and on the terms of the transfer set forth in the written notice to the Company, provided such transfer is effected within 15 days after the expiration of the option period. If the transfer is not effected within such period, the Company must again be given an option to purchase, as provided above.

(b) Repurchase Right by the Company.

(i) Liquidity Windows. Prior to the consummation of a Public Offering, the Company shall provide a repurchase window at such times as the Committee may designate during which the Company will offer to repurchase all, or a portion of, vested shares of Company Stock distributed to Grantees under this Plan (each window a "Liquidity Window"), with the terms of such Liquidity Window, including the length of such Liquidity Window and the amount of Company Stock that may be purchased to be determined by the Committee in its sole discretion. The Company shall provide Grantees advance written notice of each Liquidity Window and all shares of Company Stock repurchased in the Liquidity Window shall be repurchased at Fair Market Value.

(ii) Repurchase Following Termination. If a Grantee ceases to be employed by, or provide service to, the Employer, then, except as provided in Section 8(b)(iii) below, the Company shall have the right, at any time, to purchase all, or part of any, vested shares of Company Stock distributed to the Grantee under this Plan at its then current Fair Market Value or at such other price as may be established in the Grant Instrument; provided, however, that such repurchase shall be made in accordance with applicable law and shall be made in accordance with applicable accounting rules to avoid adverse accounting treatment.

(iii) Repurchase Following Termination by the Company for Cause. If a Grantee's employment by or provision of services to the Employer are terminated by the Employer for Cause, the Company shall have the right, at any time, to purchase all, or part of any, vested shares of Company Stock distributed to the Grantee under this Plan at the lesser of its then current Fair Market Value or the purchase price paid by the Grantee for such shares; provided, however, that such repurchase shall be made in accordance with applicable law and shall be made in accordance with applicable accounting rules to avoid adverse accounting treatment.

(c) Assignment of Rights. The Board, in its sole discretion, may waive the Company's right of first refusal and repurchase right under this Section 8.

(d) Public Offering. On and after the consummation of a Public Offering, the Company shall have no further right to purchase shares of Company Stock under this Section 8. The requirements of this Section 8 shall lapse and cease to be effective upon a Public Offering.

(e) Stockholder's or Other Agreement. Notwithstanding the provisions of this Section 8, if the Committee requires that a Grantee execute a Stockholder Agreement or other agreement with respect to any Company Stock distributed or delivered pursuant to this Plan, which contains a right of first refusal or repurchase right, the provisions of this Section 8 shall not apply to such Company Stock, unless the Committee determines otherwise. "Stockholder Agreement" means one agreement, or, collectively, two or more agreements, as may be amended from time to time, by and among the Company and one or more stockholders of the Company setting forth, among other provisions, restrictions on transfer, rights of first refusal, lock-up arrangements, bring-along rights, drag-along rights, voting agreements or the granting of certain proxies or powers of attorney with respect to shares of capital stock.

SECTION 9 Change of Control of the Company

(a) Change of Control. As used herein, a "Change of Control" shall be deemed to have occurred if:

(i) Any "person," as such term is used in Sections 13(d) and 14(d) of the Exchange Act becomes a "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing more than 50% of the voting power of the then outstanding securities of the Company; provided that a Change of Control shall not be deemed to occur as a result of (A) a transaction or series of related transactions pursuant to which the Company issues securities in a bona fide sale to raise funds for operations, (B) a Public Offering, (C) a transaction in which the Company becomes a subsidiary of another corporation and in which the stockholders of the Company, immediately prior to the transaction, will beneficially own, immediately after the transaction, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the parent corporation would be entitled in the election of directors; or

(ii) The consummation of (A) a merger or consolidation of the Company with another corporation where the stockholders of the Company, immediately prior to the merger or consolidation, will not beneficially own, immediately after the merger or consolidation, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the surviving corporation would be entitled in the election of directors, (B) a sale or other disposition of all or substantially all of the assets of the Company, or (C) a liquidation or dissolution of the Company.

(b) Other Definition. The Committee may modify the definition of Change of Control for a particular Grant as the Committee deems appropriate to comply with Section 409A of the Code or otherwise.

SECTION 10 Consequences of a Change of Control

(a) The Committee may provide in any Grant Instrument terms under which Grants may be exercisable in the event of a Change of Control or in the event of a Grantee's termination of employment or service in connection with, upon or within a specified time period after a Change of Control.

(b) In addition, in the event of a Change of Control, the Committee may take any of the following actions with respect to any or all outstanding Grants: the Committee may (i) determine that outstanding Options shall accelerate, in whole or in part, and become fully exercisable, (ii) determine that all outstanding Options that are not exercised shall be assumed by, or replaced with comparable options by the surviving corporation (or a parent or subsidiary of the surviving corporation), (iii) require that Grantees surrender their outstanding Options, in whole or in part, in exchange for one or more payments, in cash, Company Stock or other property, as determined by the Committee, in an amount, if any, equal to the amount by which the then Fair Market Value of the shares of Company Stock subject to the Grantee's unexercised Options exceeds the Exercise Price of the Options, on such terms as the Committee determines, including providing for the surrender of vested Options and the cancellation of unvested Options or (iv) after giving Grantees an opportunity to exercise their outstanding Options (to the extent then exercisable), in whole or in part, terminate any or all unexercised Options at such time as the Committee deems appropriate or (v) determine that any Grants that are unvested and unexercisable shall be terminated. Such acceleration, assumption, surrender or termination shall take place as of the date of the Change of Control or such other date as the Committee may specify and the Grantee agrees to take all necessary and desirable actions in connection with the consummation of the Change of Control, including the execution of such agreements and such instruments and other actions reasonably necessary to provide the representations, warranties, indemnities, covenants, conditions, non-compete agreements, escrow agreements, releases and other provisions and agreements relating to the Change of Control. Without limiting the foregoing, if the per share Fair Market Value of the Company Stock equals or is less than the per share Exercise Price, the Company shall not be required to make any payment to the Grantee upon surrender of the Option.

SECTION 11 Limitations on Issuance or Transfer of Shares

(a) Stockholder's or Other Agreement. The Committee may require that a Grantee execute a Stockholder Agreement or other agreement, with such terms as the Committee deems appropriate, with respect to any Company Stock issued or distributed pursuant to this Plan. Any and all provisions of this Plan that apply to any Stockholder Agreement shall be deemed to be applicable to any such agreement or agreements referred to in this definition of Stockholder Agreement even if such agreement or agreements are called or titled something other than Stockholder Agreement or Stockholders Agreement.

(b) Limitations on Issuance or Transfer of Shares. No Company Stock shall be issued or transferred in connection with any Grant hereunder unless and until all legal requirements applicable to the issuance or transfer of such Company Stock have been complied with to the satisfaction of the Committee (including, without limitation, any Stockholder Agreement). The Committee shall have the right to condition any Grant made to any Grantee hereunder on such Grantee's undertaking in writing to comply with such restrictions on his or her subsequent disposition of such shares of Company Stock as the Committee shall deem necessary or advisable, and certificates representing such shares may be legended to reflect any such restrictions. Certificates representing shares of Company Stock issued or transferred under the Plan will be subject to such stop-transfer orders and other restrictions as may be required by applicable laws, regulations and interpretations, including any requirement that a legend be placed thereon.

(c) The Committee shall have the right to condition any Grant made to any Grantee hereunder on the Grantee's agreement that the Grantee's right to receive and retain Company Stock in connection with such Grant is conditioned on such Grantee's consent to an agreement or agreements entered into among and between the Company, any of the Company's stockholders, and a creditor or creditors of the Company or of any of the Company's stockholders.

(d) Lock-Up Period. If so requested by the Company or any representative of the underwriters (the "Managing Underwriter") in connection with any underwritten offering of securities of the Company, a Grantee (including any successor or assigns) shall not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any shares or other securities of the Company held by the Grantee (other than those included in the registration) during the 30-day period preceding and the 180-day period following the effective date of a registration statement filed by the Company for such underwriting (or such longer, or shorter, period as the Managing Underwriter or the Company shall request in order to facilitate compliance with applicable rules, regulations and such other factors that the Board deems appropriate) (the "Market Standoff Period"). The Grantee agrees to execute and deliver such other agreements as may be reasonably requested by the Company and/or the Managing Underwriter which are consistent with the foregoing or which are necessary to give further effect thereto. The Company may impose stop-transfer instructions with respect to securities subject to the foregoing restrictions until the end of such Market Standoff Period.

SECTION 12 Amendment and Termination of the Plan

(a) Amendment. The Board may amend or terminate the Plan at any time; provided, however, that the Board shall not amend the Plan without stockholder approval if such approval is required in order to comply with the Code or other applicable law.

(b) Termination of Plan. The Plan shall terminate on the day immediately preceding the tenth anniversary of the Effective Date (as defined below in Section 16), unless the Plan is terminated earlier by the Board or is extended by the Board with the approval of the stockholders, if such stockholder approval is required.

(c) Termination and Amendment of Outstanding Grants. A termination or amendment of the Plan that occurs after a Grant is made shall not materially impair the rights of a Grantee unless the Grantee consents or unless the Committee acts under Section 17(b). The termination of the Plan shall not impair the power and authority of the Committee with respect to an outstanding Grant. Whether or not the Plan has terminated, an outstanding Grant may be terminated or amended under Section 17(b). An outstanding Grant may be amended by the Committee consistent with the Plan, provided that such amendment does not materially impair the rights of the Grantee unless the Grantee consents to such amendment, or unless the Committee acts under Section 17(b).

(d) Governing Document. In the event of any conflict between the provisions of this Plan and the provisions of any applicable Grant Instrument, the Plan shall be the controlling document. No other statements, representations, explanatory materials or examples, oral or written, may amend the Plan in any manner. The Plan shall be binding upon and enforceable against the Company and its successors and assigns. In addition, an outstanding Grant may be amended by the Committee consistent with the Plan, provided that such amendment does not materially impair the rights of the Grantee unless the Grantee consents to the amendment. In the event of any conflict between the provisions of this Plan and the provisions of any applicable Stockholder Agreement (as defined in Section 8(f) above) or other agreement between the Company and the applicable Grantee, including, but not limited to any applicable Grant Instrument, the provisions of such Stockholder Agreement or other agreement shall control except as required to fulfill the intention that this Plan constitute an incentive stock option plan within the meaning of Section 422 of the Code, but insofar as possible the provisions of the Plan and any such Stockholder Agreement or other agreement shall be construed so as to give full force and effect to all such provisions.

SECTION 13 Funding of the Plan

This Plan shall be unfunded. The Company shall not be required to establish any special or separate fund or to make any other segregation of assets to assure the payment of any Grants under this Plan. In no event shall interest be paid or accrued on any Grant, including unpaid installments of Grants.

SECTION 14 Rights of Grantees

Nothing in this Plan shall entitle any Employee, Key Advisor, Non-Employee Director, Affiliate Employee, Tucows Employee, or other person to any claim or right to be granted a Grant under this Plan. Neither this Plan nor any action taken hereunder shall be construed as giving any individual any rights to be retained by or in the employ of the Employer or any other employment rights.

SECTION 15 No Fractional Shares

No fractional shares of Company Stock shall be issued or delivered pursuant to the Plan or any Grant. The Committee shall determine whether cash, other awards or other property shall be issued or paid in lieu of such fractional shares or whether such fractional shares or any rights thereto shall be forfeited or otherwise eliminated.

SECTION 16 Effective Date of the Plan

(a) Effective Date. The Plan shall be effective as of September 23, 2022 (the "Effective Date"), subject to stockholder approval of the Plan as required pursuant to applicable law.

(b) Public Offering. The provisions of the Plan that refer to a Public Offering shall be effective, if at all, upon the initial registration of the Company Stock under Section 12(b) or Section 12(g) of the Exchange Act (a "Public Offering"), and shall remain effective thereafter for so long as such stock is so registered.

SECTION 17 Miscellaneous

(a) Grants in Connection with Corporate Transactions and Otherwise. Nothing contained in this Plan shall be construed to (i) limit the right of the Committee to make Grants under this Plan in connection with the acquisition, by purchase, lease, merger, consolidation or otherwise, of the business or assets of any corporation, firm or association, including Grants to employees thereof who become Employees, or for other proper corporate purposes, or (ii) limit the right of the Company to grant stock options or make other awards outside of this Plan. Without limiting the foregoing, the Committee may make a Grant to an employee, director or advisor of another corporation who becomes an Employee, Non-Employee Director or Key Advisor by reason of a corporate merger, consolidation, acquisition of stock or property, reorganization or liquidation involving the Company or any of its affiliates in substitution for a stock option or stock awards grant made by such corporation. The terms and conditions of the substitute grants may vary from the terms and conditions required by the Plan and from those of the substituted stock incentives. The Committee shall prescribe the provisions of the substitute grants.

(b) Compliance with Law. The Plan, the exercise of Options and the obligations of the Company to issue or transfer shares of Company Stock under Grants shall be subject to all applicable laws and to approvals by any governmental or regulatory agency as may be required. After a Public Offering of the Company, with respect to persons subject to Section 16 of the Exchange Act, it is the intent of the Company that the Plan and all transactions under the Plan comply with all applicable provisions of Rule 16b-3 or its successors under the Exchange Act. It is the intent of the Company that the Plan and Incentive Stock Options granted under the Plan comply with the applicable provisions of Section 422 of the Code and that, to the extent applicable, Grants made under the Plan comply with, or are exempt from, the requirements of Section 409A of the Code and the regulations thereunder. To the extent that any legal requirement as set forth in the Plan ceases to be required under applicable law, the Committee may determine that such Plan provision shall cease to apply. The Committee may revoke any Grant if it is contrary to law or modify a Grant or the Plan to bring a Grant or the Plan into compliance with any applicable law or regulation, including, without limitation, for the purpose of preventing taxation of the Grantee, the Company, or any other person with respect to any Grant under Section 409A of the Code. The Committee may, in its sole discretion, agree to limit its authority under this Section.

(c) Section 409A. The Plan is intended to comply with the requirements of Section 409A of the Code, to the extent applicable. All Grants shall be construed and administered such that the Grant either (i) qualifies for an exemption from the requirements of Section 409A of the Code or (ii) satisfies the requirements of Section 409A of the Code. If a Grant is subject to Section 409A of the Code, (i) distributions shall only be made in a manner and upon an event permitted under Section 409A of the Code, (ii) payments to be made upon a termination of employment shall only be made upon a "separation from service" under Section 409A of the Code, (iii) payments to be made upon a Change of Control shall only be made upon a "change of control event" under Section 409A of the Code, (iv) unless the Grant specifies otherwise, each payment shall be treated as a separate payment for purposes of Section 409A of the Code, and (v) in no event shall a Grantee, directly or indirectly, designate the calendar year in which a distribution is made except in accordance with Section 409A of the Code. Any Grant granted under the Plan that is subject to Section 409A of the Code and that is to be distributed to a key employee (as described below) upon separation from service shall be administered so that any distribution with respect to such Grant shall be postponed for six months following the date of the Grantee's separation from service, if required by Section 409A of the Code. If a distribution is delayed pursuant to Section 409A of the Code, the distribution shall be paid within 30 days after the end of the six-month period. If the Grantee dies during such six-month period, any postponed amounts shall be paid within 60 days of the Grantee's death. The determination of key employees, including the number and identity of persons considered key employees and the identification date, shall be made by the Committee or its delegate each year in accordance with Section 416(i) of the Code and the "specified employee" requirements of Section 409A of the Code. Notwithstanding anything in this Plan or any Grant Instrument to the contrary, each Grantee shall be solely responsible for the tax consequences of Grants under this Plan, and in no event shall the Company have any responsibility or liability if any Grant does not meet the applicable requirements of Section 409A of the Code. Although the Company intends to administer the Plan to prevent taxation under Section 409A of the Code, the Company does not represent or warrant that the Plan or any Grant complies with any provision of federal, state, local or other tax law.

(d) Employees Subject to Taxation outside the United States. With respect to Grantees who are subject to taxation in countries other than the United States, the Committee may make Grants on such terms and conditions as the Committee deems appropriate to comply with the laws of the applicable countries, and the Committee may create such procedures, addenda and subplans and make such modifications as may be necessary or advisable to comply with such laws.

(e) Establishment of Subplans. The Committee may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Committee shall establish such sub-plans by adopting supplements to the Plan setting forth (i) such limitations on the Committee's discretion under the Plan as the Committee deems necessary or desirable and (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Committee shall deem necessary or desirable. All supplements adopted by the Committee shall be deemed to be part of the Plan, but each supplement shall apply only to Grantees within the affected jurisdiction and the Employer shall not be required to provide copies of any supplement to Grantees in any jurisdiction that is not affected.

(f) Clawback Rights. Subject to the requirements of applicable law, the Committee may provide in any Grant Instrument that, if a Grantee breaches any restrictive covenant agreement between the Grantee and the Employer (which may be set forth in any Grant Instrument) or otherwise engages in activities that constitute Cause either while employed by, or providing service to, the Employer or within a specified period of time thereafter, all Grants held by the Grantee shall terminate, and the Company may rescind any exercise of an Option and delivery of shares upon such exercise on such terms as the Committee shall determine, including the right to require that in the event of any such rescission, (i) the Grantee shall return to the Company the shares received upon the exercise of any Option or, (ii) if the Grantee no longer owns the shares, the Grantee shall pay to the Company the amount of any gain realized or payment received as a result of any sale or other disposition of the shares (or, in the event the Grantee transfers the shares by gift or otherwise without consideration, the Fair Market Value of the shares on the date of the breach of the restrictive covenant agreement (including a Grantee's Grant Instrument containing restrictive covenants) or activity constituting Cause), net of the price originally paid by the Grantee for the shares. Payment by the Grantee shall be made in such manner and on such terms and conditions as may be required by the Committee. The Employer shall be entitled to set off against the amount of any such payment any amounts otherwise owed to the Grantee by the Employer. In addition, all Grants under the Plan shall be subject to any applicable clawback or recoupment policies, share trading policies and other policies that may be implemented by the Board from time to time. By accepting a Grant under the Plan, Grantees agree and acknowledge that they are obligated to cooperate with, and provide any and all assistance necessary to, the Company to recover or recoup Company Stock underlying any such Grant or amounts paid under the Plan subject to clawback or recoupment pursuant to such policy, listing standard or law. Such cooperation and assistance shall include, but is not limited to, executing, completing and submitting any documentation necessary to recover or recoup any such Company Stock or amount paid from a Grantee's accounts, or pending or future compensation or Grants under the Plan.

(g) Governing Law. The validity, construction, interpretation and effect of the Plan and Grant Instruments issued under the Plan shall be governed and construed by and determined in accordance with the laws of the State of Delaware without giving effect to the conflict of laws provisions thereof.

* * * * *

Exhibit 10.17

TING FIBER, LLC

2022 EQUITY COMPENSATION PLAN

Effective December 15, 2022

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TING FIBER, LLC

2022 EQUITY COMPENSATION PLAN

The purpose of the Ting Fiber, LLC 2022 Equity Compensation Plan (the "Plan") is to provide (i) designated employees of Ting Fiber, LLC (the "Company") and its subsidiaries, (ii) designated individuals who have become members of the Company because they have exercised options under the Plan, (iii) certain consultants and advisors who perform services for the Company or its subsidiaries, (iv) non-employee members of the Board of Managers of the Company (the "Board"), (v) certain employees of the Company's affiliates who provide direct services to the Company, and (vi) certain employees of Tucows Inc. ("Tucows"), with the opportunity to receive grants of nonqualified options, as set forth below; provided that the grants to the employees, partners, consultants and advisors sent forth in clauses (i) through (vi) satisfy applicable laws. The Company believes that the Plan will encourage the participants to contribute materially to the growth of the Company, thereby benefiting the Company's members, and will align the economic interests of the participants with those of the Company's members.

SECTION 1 Administration

(a) Committee. The Plan shall be administered and interpreted by the Board or by a committee consisting of members of the Board, which shall be appointed by the Board. However, the Board shall approve and administer all Grants (as defined below in Section 2) made to non-employee members of the Board. The Board or the committee may delegate authority to one or more subcommittees, or one or more Company officers, to the extent it deems appropriate. To the extent the Board, committee, subcommittee, or Company officer(s) administers the Plan pursuant to any such authority or delegated authority, references in the Plan and Grant Instrument to the "Committee" shall be deemed to refer to such Board, committee, subcommittee, or Company officer(s). Notwithstanding the foregoing, the Board may not delegate authority to one or more Company officers (i) to amend the Plan, (ii) to make determinations regarding employees who are subject to Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or (iii) to the extent such delegation would violate applicable law or applicable stock exchange rules.

(b) Committee Authority. The Committee shall have the sole authority to (i) determine the individuals to whom Grants shall be made under the Plan, (ii) determine the type, size and terms of the Grants to be made to each such individual, (iii) determine the time when the Grants will be made and the duration of any applicable exercise or restriction period, including the criteria for exercisability and vesting and the acceleration of exercisability and vesting, (iv) amend the terms of any previously issued Grant, and (v) resolve any other matters arising under the Plan.

(c) Committee Determinations. The Committee shall have full power and authority to administer and interpret the Plan, to make factual determinations and to adopt or amend such rules, regulations, agreements and instruments for implementing the Plan and for the conduct of its business as it deems necessary or advisable, in its sole discretion. The Committee's interpretations of the Plan and all determinations made by the Committee pursuant to the powers vested in it hereunder shall be conclusive and binding on all persons having any interest in the Plan or in any awards granted hereunder. All powers of the Committee shall be executed in its sole discretion, in the best interest of the Company, not as a fiduciary with respect to any Grantee or the beneficiaries of any Grantee, and in keeping with the objectives of the Plan and need not be uniform as to similarly situated individuals.

SECTION 2 Grants

Awards under the Plan may consist of grants (each a "Grant", and collectively referred to herein as "Grants") of nonqualified options ("Options"), as described in Section 5. All Grants shall be subject to the terms and conditions set forth herein and to such other terms and conditions consistent with this Plan as the Committee deems appropriate and as are specified in writing by the Committee to the individual in a grant instrument or an amendment to the grant instrument (the "Grant Instrument"). All Grants shall be made conditional upon the Grantee's (as defined below in Section 4(b)) acknowledgement, in writing or by acceptance of the Grant, that all decisions and determinations of the Committee shall be final and binding on the Grantee, the Grantee's beneficiaries and any other person having or claiming an interest under such Grant. Grants under a particular Section of the Plan need not be uniform as among the Grantees. At the time an Option is exercised, the Company shall deliver to the Grantee holding such Option the number of Company Units (as defined below in Section 3(a)) underlying the Option that the Grantee designates to be exercised; provided that the Committee may, in its discretion, and in lieu of issuing Company Units, elect to pay such Grantee a cash amount equal to the difference between the Fair Market Value of the number of Company Units exercised by the Grantee and the exercise price of such units.

SECTION 3 Units Subject to the Plan

(a) Units Authorized.

(b) Subject to adjustment as described below, the aggregate number of Company common units ("Company Units"), that may be issued or transferred under the Plan is ten million (10,000,000) common units.

(c) Determination of Authorized Units. The units that may be issued or transferred under the Plan may be reacquired Company Units. If and to the extent Options granted under the Plan terminate, expire, or are canceled, forfeited, exchanged or surrendered without having been exercised, the units subject to such Grants shall again be available for purposes of the Plan. To the extent the Committee elects, in its discretion, to pay a Grantee a cash amount equal to the difference between the Fair Market Value of a Company Unit underlying the Grant and the exercise price of such unit, in lieu of issuing a Company Unit to such Grantee at the time a Grant is exercised, then such payment shall count as the issuance of a unit under the Plan and such unit shall not be available for purposes of the Plan.

(d) Adjustments. If there is any change in the number or kind of Company Units outstanding by reason of (i) a distribution, spinoff, recapitalization, split, reverse split or combination or exchange of units, (ii) a merger, reorganization or consolidation, (iii) a reclassification or change in par value, or (iv) any other extraordinary or unusual event affecting the outstanding Company Units as a class without the Company's receipt of consideration, or if the value of outstanding Company Units is substantially reduced as a result of a spinoff or the Company's payment of an extraordinary distribution, the maximum number of Company Units available for issuance under the Plan, the kind and number of units covered by outstanding Grants, the kind and number of units issued and to be issued under the Plan, and the price per unit or the applicable market value of such Grants may be equitably adjusted by the Committee, in such a manner as the Committee deems appropriate, to reflect any increase or decrease in the number of, or change in the kind or value of, the issued Company Units to preclude, to the extent practicable, the enlargement or dilution of rights and benefits under the Plan and such outstanding Grants; provided, however, that any fractional units resulting from such adjustment shall be eliminated. In addition, in the event of a Change of Control (as defined below in Section 9) of the Company, the provisions of Section 10 of the Plan shall apply. Any adjustments to outstanding Grants shall be consistent with Section 409A of the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder (the "Code"), to the extent applicable. Any adjustments determined by the Committee shall be final, binding and conclusive.

SECTION 4 Eligibility for Participation

(a) Eligible Persons All employees of the Company and of any of its Controlled Subsidiaries, as defined below in this Section 4(a) ("Employees"), including Employees who are officers or members of the Board, and members of the Board who are not Employees ("Non-Employee Directors") shall be eligible to participate in the Plan. Consultants and advisors who perform direct services for the Company or any of its Controlled Subsidiaries ("Key Advisors"), and employees of Tucows or of any subsidiary or affiliate of the Company who perform direct services for the Company or any of its Controlled Subsidiaries ("Affiliate Employees") shall be eligible to participate in the Plan if the Key Advisors or Affiliate Employees, as applicable, render bona fide direct services to the Company or its Controlled Subsidiaries, the services are not in connection with the offer and sale of securities in a capital-raising transaction and the Key Advisors or Affiliate Employees, as applicable, do not directly or indirectly promote or maintain a market for the Company's securities. In addition, an employee of Tucows or subsidiary or affiliate thereof shall be eligible to participate in the Plan, if, during such individual's taxable year in which any Option is granted to such individual, any amount that might otherwise be included in such individual's income for that year with respect to such Option (including but not limited to Sections 83 and 409A of the Code) is excludable for Federal income tax purposes pursuant to any bilateral or multilateral convention, agreement or treaty to which the United States is a party ("Nonresident Alien Employee"). Each Grant to a Grantee must be compliant with applicable law including Section 409A of the Code (to the extent not exempt from Section 409A of the Code). No Grant may be made to any individual if it would cause Options under the Plan, including Options subject to the Grant, to fail to be exempt from Section 409A of the Code A "Controlled Subsidiary" for purposes of the Plan is any direct or indirect subsidiary of the Company in which the Company has a controlling interest under Treas. Reg. Section 1.414(c)-1(b)(2) (except that 50% shall be substituted for 80% wheresoever it may appear therein), and any other subsidiary of the Company in which the Company has a controlling interest for purposes of Treas. Reg. Section 1.409A-1(b)(5).

(b) Selection of Grantees. The Committee shall select the Employees, Non-Employee Directors, Key Advisors, Affiliate Employees, and Nonresident Alien Employees, to receive Grants and shall determine the number of Company Units subject to a particular Grant in such manner as the Committee determines. Employees, Key Advisors, Non-Employee Directors, Affiliate Employees, and Nonresident Alien Employees, who receive Grants under this Plan shall be referred to herein as "Grantees." No person may be a Grantee in any year who is not eligible to participate in the Plan under Section 4(a) in such year.

SECTION 5 Options

The Committee may grant Options to a person eligible to be a Grantee, upon such terms as the Committee deems appropriate. The following provisions are applicable to Options:

(a) Number of Units. The Committee shall determine the number of Company Units that will be subject to each Grant of Options to Grantees.

(b) Type of Option and Price.

(i) The Committee may grant Options that are not intended to qualify as "incentive stock options" within the meaning of Section 422 of the Code, in accordance with the terms and conditions set forth herein. Options may be granted to any person eligible to be a Grantee, subject to applicable law.

(ii) The purchase price (the "Exercise Price") of Company Units subject to an Option shall be determined by the Committee and shall be equal to or greater than the Fair Market Value (as defined below in Section 5(b)(iii)) of a Company Unit on the date the Option is granted.

(iii) "Fair Market Value" of Company Units means, unless the Committee determines otherwise with respect to a particular Grant, (i) if the principal trading market for the Company Units is a national securities exchange, the last reported sale price during regular trading hours of Company Units on the relevant date or (if there were no trades on that date) the last reported sale price during the regular trading hours on the latest preceding date upon which a sale was reported, (ii) if the Company Units are not principally traded on such exchange, the mean between the last reported "bid" and "asked" prices of Company Units during regular trading hours on the relevant date, as reported on the OTC Bulletin Board, or (iii) if the Company Units are not publicly traded or, if publicly traded, are not so reported, the Fair Market Value per unit shall be as determined by the Committee through any reasonable valuation method authorized under the Code.

(c) Option Term. The Committee shall determine the term of each Option, which such term shall be specified in the Grant Instrument.

(d) Exercisability of Options. Options shall become exercisable in accordance with such terms and conditions, consistent with the Plan, as may be determined by the Committee and specified in the Grant Instrument. The Committee may accelerate the exercisability of any or all outstanding Options at any time for any reason.

(e) Grants to Non-Exempt Employees. Notwithstanding any provision of the Plan to the contrary, Options granted to persons who are non-exempt employees under the Fair Labor Standards Act of 1938, as amended, may not be exercisable for at least six months after the date of grant (except that such Options may become exercisable, as determined by the Committee, upon the Grantee's death, Disability (as defined below in Section 5(f)(v)(B)) or retirement, or upon a Change of Control or other circumstances permitted by applicable regulations).

(f) Termination of the Option.

(i) Except as provided below or as otherwise determined by the Committee, an Option may only be exercised while the Grantee is employed by, or providing service to, the Employer (as defined below in Section 5(f)(v)(C)) as an Employee, Key Advisor, Non-Employee Director, Affiliate Employee, or Nonresident Alien Employee.

(ii) In the event that a Grantee ceases to be employed by, or provide service to, the Employer for any reason other than on account of Cause or the Grantee's Disability or death, any Option which is otherwise exercisable by the Grantee on the date Grantee ceases to be employed by, or provide service to, the Employer, shall terminate unless exercised within 90 days after the date on which the Grantee ceases to be employed by, or provide service to, the Employer (or within such other period of time as may be specified by the Committee in the Grant Instrument or otherwise), but in any event no later than the date of expiration of the Option term. Except as otherwise provided by the Committee, any of the Grantee's Options that are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(iii) In the event the Grantee ceases to be employed by, or provide service to, the Employer on account of the Grantee's Disability, any Option which is otherwise exercisable by the Grantee on the date the Grantee ceases to be employed by, or provide service to, the Employer, shall terminate unless exercised within one year after the date on which the Grantee ceases to be employed by, or provide service to, the Employer (or within such other period of time as may be specified by the Committee in the Grant Instrument or otherwise), but in any event no later than the date of expiration of the Option term. Except as otherwise provided by the Committee, any of the Grantee's Options which are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(iv) If the Grantee dies while employed by, or providing service to, the Employer, or within 90 days after the date on which the Grantee ceases to be employed or provide service to the Employer on account of a termination specified in Section 5(f)(ii) above, any Option that is otherwise exercisable by the Grantee shall terminate unless exercised within one year after the date on which the Grantee ceases to be employed by, or provide service to, the Employer (or within such other period of time as may be specified by the Committee in the Grant Instrument or otherwise), but in any event no later than the date of expiration of the Option term. Except as otherwise provided by the Committee, any of the Grantee's Options that are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(v) If a Grantee's services or employment are terminated by the Employer for Cause, any Option which is otherwise exercisable by the Grantee on the date Grantee ceases to be employed by, or provide service to, the Employer, shall terminate immediately. Except as otherwise provided by the Committee, any of the Grantee's Options that are not otherwise exercisable as of the date on which the Grantee ceases to be employed by, or provide service to, the Employer shall terminate as of such date.

(vi) For purposes of the Plan:

(A) "Cause" shall have the meaning given to that term in any written employment agreement, offer letter or severance agreement between the Employer and the Grantee, or if no such agreement exists or if such term is not defined therein, and unless otherwise defined in the Grant Instrument, "Cause" shall mean a finding by the Committee that the Grantee has (i) materially breached his or her employment or service contract, or any other contract or written agreement, with the Employer or the Company, (ii) engaged in consistent poor performance after being advised as to the standard required, (iii) intentionally disclosed, or any grossly negligent disclosure of, any of the Company's or the Employer's confidential information, (iv) violated any local, state/provincial, or federal statute, including without limitation, an act of dishonesty such as embezzlement or theft, (v) engaged in conduct that is materially detrimental to the business or the financial position of the Company, or (vi) personal conduct on the part of the Grantee which is of such a serious and substantial nature that it is reasonably likely to cause harm to the reputation of the Company or the Grantee's Employer if the Grantee were retained as an employee or service provider.

(B) "Disability" shall mean a Grantee's becoming disabled within the meaning of Section 22(e)(3) of the Code, within the meaning of the Employer's long-term disability plan applicable to the Grantee, or as otherwise determined by the Committee.

(C) "Employed by, or providing service to, the Employer" shall mean providing services to the Employer as an Employee, Non-Employee Director, Key Advisor, Affiliate Employee or Nonresident Alient Employee, unless the Committee determines otherwise. All variations of "employed by, or provide service to, the employer" shall account for different verb tenses and shall have the same meaning as set forth in this paragraph.

(D) "Employer" shall mean Tucows, the Company, the Company's subsidiaries, and an entity that is a subsidiary of Tucows and an affiliate of the Company, in each case as determined by the Committee.

(E) "Good Reason" shall mean the occurrence of one or more of the following without the Grantee's consent, other than on account of the Grantee's disability: (i) a change by the Employer of more than fifty miles in the Grantee's principal place of employment or service, excluding for the avoidance of doubt, remote work arrangements and travel for business in the course of performing Grantee's duties for the Employer, (ii) a material diminution in the Grantee's base salary, except for any diminution that is part of a broad-based diminution affecting other employees of the Employer, and (iii) any action or inaction that constitutes a material breach by the Company of this Grant Instrument. The Grantee must provide written notice of termination for Good Reason to the Employer within 30 days after the event constituting Good Reason. The Employer shall have a period of 30 days in which it may correct the act or failure to act that constitutes the grounds for Good Reason as set forth in the Grantee's notice of termination. If the Employer does not correct the act or failure to act, the Grantee's employment or service will terminate for Good Reason on the first business day following the Employer's 30-day cure period.

(g) Exercise of Options. A Grantee may exercise an Option that has become exercisable, in whole or in part, by delivering a notice of exercise to the Company. The Grantee shall pay the Exercise Price for an Option as specified in the Grantee's Grant Instrument. The Grantee shall pay the Exercise Price and the amount of any Withholding Taxes due (pursuant to Section 6 below) at such time as may be specified by the Committee.

SECTION 6 Withholding of Taxes

(a) Required Withholding. All Grants under the Plan shall be subject to withholding of applicable income tax (including U.S. federal, state, and local tax and/or foreign income tax), employment tax (including FICA), payroll tax, social security tax, social insurance, contributions, payment on account obligations, national and local tax or other amounts required to be withheld, collected or accounted for by the Employer in connection with any taxable event with respect to the Grant (the "Withholding Taxes"). The Employer may require that the Grantee or other person receiving or exercising Grants pay to the Employer the amount of any Withholding Taxes with respect to such Grants, or the Employer may deduct from other wages paid by the Employer the amount of any Withholding Taxes due with respect to such Grants.

(b) Election to Withhold Units. If the Committee so permits, a Grantee may elect to satisfy the Employer's obligation for Withholding Taxes with respect to Grants paid in Company Units by having units withheld that have a Fair Market Value equal to the amount of tax to be withheld. Unit withholding for taxes shall be based on the Grantee's minimum applicable tax withholding rate, or such other rate permitted by the Committee that does not cause adverse accounting consequences. The election must be in a form and manner prescribed by the Committee and may be subject to the prior approval of the Committee.

SECTION 7 Transferability of Grants

(a) Nontransferability of Grants. Except as provided below, only the Grantee may exercise rights under a Grant during the Grantee's lifetime. A Grantee may not transfer those rights except by will or by the laws of descent and distribution. When a Grantee dies, the personal representative or other person entitled to succeed to the rights of the Grantee may exercise such rights. Any such successor must furnish proof satisfactory to the Company of his or her right to receive the Grant under the Grantee's will or under the applicable laws of descent and distribution.

(b) Transfer of Options. Notwithstanding the foregoing, the Committee may provide, in a Grant Instrument, that a Grantee may transfer Options to family members, or one or more trusts or other entities for the benefit of or owned by family members, consistent with the applicable securities laws, according to such terms as the Committee may determine; provided that the Grantee receives no consideration for the transfer of an Option and the transferred Option shall continue to be subject to the same terms and conditions as were applicable to the Option immediately before the transfer.

(c) Prohibition on Certain Transactions. Prior to the date the Company first becomes subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, outstanding Grants under the Plan, together with Company Units subject to such Grants, shall not be the subject of any hedge transactions. Except as otherwise provided above in this Section 7 or in Section 8 or Section 9 below, until the date the Company first becomes subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, outstanding Grants under the Plan, together with Company Units subject to such Grants, shall not be the subject of any pledges, gifts, hypothecations or transfers. In addition, all Grants and the Company Units underlying such Grants under the Plan shall be subject to any applicable hedging, pledging and other policies, that may be implemented by the Board from time to time.

SECTION 8 Right of First Refusal; Repurchase Right

(a) Right of First Refusal.

(i) Offer. Prior to the consummation of a Public Offering, if at any time an individual desires to sell, encumber, or otherwise dispose of Company Units that were distributed to him or her under this Plan and that are transferable, the individual may do so only pursuant to a bona fide written offer, and the individual shall first offer the units to the Company by giving the Company written notice disclosing: (i) the name of the proposed transferee of the Company Units, (ii) the certificate number and number of Company Units proposed to be transferred or encumbered, (iii) the proposed price, (iv) all other terms of the proposed transfer, and (v) a written copy of the proposed offer. Within 60 days after receipt of such notice, the Company shall have the option to purchase all or part of such Company Units at the price and on the terms described in the written notice.

(ii) Sale. In the event the Company (or a member, as described below) does not exercise the option to purchase Company Units, as provided in subsection 8(a)(i) above, the individual shall have the right to sell, encumber, or otherwise dispose of Company Units described in subsection (8)(a)(i) at the price and on the terms of the transfer set forth in the written notice to the Company, provided such transfer is effected within 15 days after the expiration of the option period. If the transfer is not effected within such period, the Company must again be given an option to purchase, as provided above.

(b) Repurchase Right by the Company.

(i) Liquidity Windows. Prior to the consummation of a Public Offering, the Company shall provide a repurchase window at such times as the Committee may designate during which the Company will offer to repurchase all, or a portion of, vested Company Units distributed to Grantees under this Plan (each window a "Liquidity Window"), with the terms of such Liquidity Window, including the length of such Liquidity Window and the amount of Company Units that may be purchased to be determined by the Committee in its sole discretion. The Company shall provide Grantees advance written notice of each Liquidity Window and all Company Units repurchased in the Liquidity Window shall be repurchased at Fair Market Value.

(ii) Repurchase Following Termination. If a Grantee ceases to be employed by, or provide service to, the Employer, then, except as provided in Section 8(b)(iii) below, the Company shall have the right, at any time, to purchase all, or part of any, vested Company Units distributed to the Grantee under this Plan at its then current Fair Market Value or at such other price as may be established in the Grant Instrument; provided, however, that such repurchase shall be made in accordance with applicable law and shall be made in accordance with applicable accounting rules to avoid adverse accounting treatment.

(iii) Repurchase Following Termination by the Company for Cause. If a Grantee's employment by or provision of services to the Employer are terminated by the Employer for Cause, the Company shall have the right, at any time, to purchase all, or part of any, vested Company Units distributed to the Grantee under this Plan at the lesser of its then current Fair Market Value or the purchase price paid by the Grantee for such units; provided, however, that such repurchase shall be made in accordance with applicable law and shall be made in accordance with applicable accounting rules to avoid adverse accounting treatment.

(c) Assignment of Rights. The Board, in its sole discretion, may waive the Company's right of first refusal and repurchase right under this Section 8.

(d) Public Offering. On and after the consummation of a Public Offering, the Company shall have no further right to purchase Company Units under this Section 8. The requirements of this Section 8 shall lapse and cease to be effective upon a Public Offering.

(e) Member's or Other Agreement. Notwithstanding the provisions of this Section 8, if the Committee requires that a Grantee execute a Member Agreement or other agreement with respect to any Company Units distributed or delivered pursuant to this Plan, which contains a right of first refusal or repurchase right, the provisions of this Section 8 shall not apply to such Company Units, unless the Committee determines otherwise. "Member Agreement" means one agreement, or, collectively, two or more agreements, as may be amended from time to time, by and among the Company and one or more members of the Company setting forth, among other provisions, restrictions on transfer, rights of first refusal, lock-up arrangements, bring-along rights, drag-along rights, voting agreements or the granting of certain proxies or powers of attorney with respect to capital units.

SECTION 9 Change of Control of the Company

(a) Change of Control. As used herein, a "Change of Control" shall be deemed to have occurred if:

(i) Any "person," as such term is used in Sections 13(d) and 14(d) of the Exchange Act becomes a "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing more than 50% of the voting power of the then outstanding securities of the Company; provided that a Change of Control shall not be deemed to occur as a result of (A) a transaction or series of related transactions pursuant to which the Company issues securities in a bona fide sale to raise funds for operations, (B) a Public Offering, (C) a transaction in which the Company becomes a subsidiary of another corporation and in which the members of the Company, immediately prior to the transaction, will beneficially own, immediately after the transaction, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the parent corporation would be entitled in the election of directors; or

(ii) The consummation of (A) a merger or consolidation of the Company with another corporation where the members of the Company, immediately prior to the merger or consolidation, will not beneficially own, immediately after the merger or consolidation, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the surviving corporation would be entitled in the election of directors, (B) a sale or other disposition of all or substantially all of the assets of the Company, or (C) a liquidation or dissolution of the Company.

(b) Other Definition. The Committee may modify the definition of Change of Control for a particular Grant as the Committee deems appropriate to comply with Section 409A of the Code or otherwise.

SECTION 10 Consequences of a Change of Control

(a) The Committee may provide in any Grant Instrument terms under which Grants may be exercisable in the event of a Change of Control or in the event of a Grantee's termination of employment or service in connection with, upon or within a specified time period after a Change of Control.

(b) In addition, in the event of a Change of Control, the Committee may take any of the following actions with respect to any or all outstanding Grants: the Committee may (i) determine that outstanding Options shall accelerate, in whole or in part, and become fully exercisable, (ii) determine that all outstanding Options that are not exercised shall be assumed by, or replaced with comparable options by the surviving corporation (or a parent or subsidiary of the surviving corporation), (iii) require that Grantees surrender their outstanding Options, in whole or in part, in exchange for one or more payments, in cash, Company Units or other property, as determined by the Committee, in an amount, if any, equal to the amount by which the then Fair Market Value of Company Units subject to the Grantee's unexercised Options exceeds the Exercise Price of the Options, on such terms as the Committee determines, including providing for the surrender of vested Options and the cancellation of unvested Options or (iv) after giving Grantees an opportunity to exercise their outstanding Options (to the extent then exercisable), in whole or in part, terminate any or all unexercised Options at such time as the Committee deems appropriate or (v) determine that any Grants that are unvested and unexercisable shall be terminated. Such acceleration, assumption, surrender or termination shall take place as of the date of the Change of Control or such other date as the Committee may specify and the Grantee agrees to take all necessary and desirable actions in connection with the consummation of the Change of Control, including the execution of such agreements and such instruments and other actions reasonably necessary to provide the representations, warranties, indemnities, covenants, conditions, non-compete agreements, escrow agreements, releases and other provisions and agreements relating to the Change of Control. Without limiting the foregoing, if the per unit Fair Market Value of the Company Units equals or is less than the per unit Exercise Price, the Company shall not be required to make any payment to the Grantee upon surrender of the Option.

SECTION 11 Limitations on Issuance or Transfer of Units

(a) Member's or Other Agreement. The Committee may require that a Grantee execute a Member Agreement or other agreement, with such terms as the Committee deems appropriate, with respect to any Company Units issued or distributed pursuant to this Plan. Any and all provisions of this Plan that apply to any Member Agreement shall be deemed to be applicable to any such agreement or agreements referred to in this definition of Member Agreement even if such agreement or agreements are called or titled something other than Member Agreement.

(b) Limitations on Issuance or Transfer of Units. No Company Units shall be issued or transferred in connection with any Grant hereunder unless and until all legal requirements applicable to the issuance or transfer of such Company Units have been complied with to the satisfaction of the Committee (including, without limitation, any Member Agreement). The Committee shall have the right to condition any Grant made to any Grantee hereunder on such Grantee's undertaking in writing to comply with such restrictions on his or her subsequent disposition of such Company Units as the Committee shall deem necessary or advisable, and certificates representing such units may be legended to reflect any such restrictions. Certificates representing Company Units issued or transferred under the Plan will be subject to such stop-transfer orders and other restrictions as may be required by applicable laws, regulations and interpretations, including any requirement that a legend be placed thereon.

(c) The Committee shall have the right to condition any Grant made to any Grantee hereunder on the Grantee's agreement that the Grantee's right to receive and retain Company Units in connection with such Grant is conditioned on such Grantee's consent to an agreement or agreements entered into among and between the Company, any of the Company's equity holders, and a creditor or creditors of the Company or of any of the Company's equity holders.

(d) Lock-Up Period. If so requested by the Company or any representative of the underwriters (the "Managing Underwriter") in connection with any underwritten offering of securities of the Company, a Grantee (including any successor or assigns) shall not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any units or other securities of the Company held by the Grantee (other than those included in the registration) during the 30-day period preceding and the 180-day period following the effective date of a registration statement filed by the Company for such underwriting (or such longer, or shorter, period as the Managing Underwriter or the Company shall request in order to facilitate compliance with applicable rules, regulations and such other factors that the Board deems appropriate) (the "Market Standoff Period"). The Grantee agrees to execute and deliver such other agreements as may be reasonably requested by the Company and/or the Managing Underwriter which are consistent with the foregoing or which are necessary to give further effect thereto. The Company may impose stop-transfer instructions with respect to securities subject to the foregoing restrictions until the end of such Market Standoff Period.

SECTION 12 Amendment and Termination of the Plan

(a) Amendment. The Board may amend or terminate the Plan at any time; provided, however, that the Board shall not amend the Plan without stockholder approval if such approval is required in order to comply with the Code or other applicable law.

(b) Termination of Plan. The Plan shall terminate on the day immediately preceding the tenth anniversary of the Effective Date (as defined below in Section 16), unless the Plan is terminated earlier by the Board or is extended by the Board with the approval of the members, if such member approval is required.

(c) Termination and Amendment of Outstanding Grants. A termination or amendment of the Plan that occurs after a Grant is made shall not materially impair the rights of a Grantee unless the Grantee consents or unless the Committee acts under Section 17(b). The termination of the Plan shall not impair the power and authority of the Committee with respect to an outstanding Grant. Whether or not the Plan has terminated, an outstanding Grant may be terminated or amended under Section 17(b). In addition, an outstanding Grant may be amended by the Committee consistent with the Plan, provided that such amendment does not materially impair the rights of the Grantee unless the Grantee consents to such amendment, or unless the Committee acts under Section 17(b).

(d) Governing Document. In the event of any conflict between the provisions of this Plan and the provisions of any applicable Grant Instrument, the Plan shall be the controlling document. No other statements, representations, explanatory materials or examples, oral or written, may amend the Plan in any manner. The Plan shall be binding upon and enforceable against the Company and its successors and assigns. In addition, an outstanding Grant may be amended by the Committee consistent with the Plan, provided that such amendment does not materially impair the rights of the Grantee unless the Grantee consents to the amendment. In the event of any conflict between the provisions of this Plan and the provisions of any applicable Member Agreement (as defined in Section 8(f) above) or other agreement between the Company and the applicable Grantee, including, but not limited to any applicable Grant Instrument, the provisions of such Member Agreement or other agreement shall control.

SECTION 13 Funding of the Plan

This Plan shall be unfunded. The Company shall not be required to establish any special or separate fund or to make any other segregation of assets to assure the payment of any Grants under this Plan. In no event shall interest be paid or accrued on any Grant, including unpaid installments of Grants.

SECTION 14 Rights of Grantees

Nothing in this Plan shall entitle any Employee, Non-Employee Director, Key Advisor, Affiliate Employee or Nonresident Alien Employee, or other person to any claim or right to be granted a Grant under this Plan. Neither this Plan nor any action taken hereunder shall be construed as giving any individual any rights to be retained by or in the employ of the Employer or any other employment rights, or to continue to provide services as a member of the Company.

SECTION 15 No Fractional Units

No fractional Company Units shall be issued or delivered pursuant to the Plan or any Grant. The Committee shall determine whether cash, other awards or other property shall be issued or paid in lieu of such fractional units or whether such fractional units or any rights thereto shall be forfeited or otherwise eliminated.

SECTION 16 Effective Date of the Plan

(a) Effective Date. The Plan shall be effective as of December 15, 2022 (the "Effective Date"), subject to member approval of the Plan as required pursuant to applicable law.

(b) Public Offering. The provisions of the Plan that refer to a Public Offering shall be effective, if at all, upon the initial registration of the Company Units under Section 12(b) or Section 12(g) of the Exchange Act (a "Public Offering"), and shall remain effective thereafter for so long as such units are so registered.

SECTION 17 Miscellaneous

(a) Grants in Connection with Corporate Transactions and Otherwise. Nothing contained in this Plan shall be construed to (i) limit the right of the Committee to make Grants under this Plan in connection with the acquisition, by purchase, lease, merger, consolidation or otherwise, of the business or assets of any corporation, firm or association, including Grants to employees thereof who become Employees, or for other proper corporate purposes, or (ii) limit the right of the Company to grant unit options or make other awards outside of this Plan. Without limiting the foregoing, the Committee may make a Grant to an employee, director or advisor of another corporation who becomes an Employee, Non-Employee Director or Key Advisor by reason of a corporate merger, consolidation, acquisition of stock or property, reorganization or liquidation involving the Company or any of its affiliates in substitution for an option or awards grant made by such corporation. The terms and conditions of the substitute grants may vary from the terms and conditions required by the Plan and from those of the substituted stock incentives. The Committee shall prescribe the provisions of the substitute grants.

(b) Compliance with Law. The Plan, the exercise of Options and the obligations of the Company to issue or transfer Company Units under Grants shall be subject to all applicable laws and to approvals by any governmental or regulatory agency as may be required. After a Public Offering of the Company, with respect to persons subject to Section 16 of the Exchange Act, it is the intent of the Company that the Plan and all transactions under the Plan comply with all applicable provisions of Rule 16b-3 or its successors under the Exchange Act. It is the intent of the Company that, to the extent applicable, Grants made under the Plan comply with, or are exempt from, the requirements of Section 409A of the Code and the regulations thereunder. To the extent that any legal requirement as set forth in the Plan ceases to be required under applicable law, the Committee may determine that such Plan provision shall cease to apply. The Committee may revoke any Grant if it is contrary to law or modify a Grant or the Plan to bring a Grant or the Plan into compliance with any applicable law or regulation, including, without limitation, for the purpose of preventing taxation of the Grantee, the Company or any other person with respect to any Grant under Section 409A of the Code. The Committee may, in its sole discretion, agree to limit its authority under this Section.

(c) Section 409A. The Plan is intended to comply with the requirements of Section 409A of the Code, to the extent applicable. All Grants shall be construed and administered such that the Grant either (i) qualifies for an exemption from the requirements of Section 409A of the Code or (ii) satisfies the requirements of Section 409A of the Code. If a Grant is subject to Section 409A of the Code, (i) distributions shall only be made in a manner and upon an event permitted under Section 409A of the Code, (ii) payments to be made upon a termination of employment shall only be made upon a "separation from service" under Section 409A of the Code, (iii) payments to be made upon a Change of Control shall only be made upon a "change of control event" under Section 409A of the Code, (iv) unless the Grant specifies otherwise, each payment shall be treated as a separate payment for purposes of Section 409A of the Code, and (v) in no event shall a Grantee, directly or indirectly, designate the calendar year in which a distribution is made except in accordance with Section 409A of the Code. Any Grant granted under the Plan that is subject to Section 409A of the Code and that is to be distributed to a key employee (as described below) upon separation from service shall be administered so that any distribution with respect to such Grant shall be postponed for six months following the date of the Grantee's separation from service, if required by Section 409A of the Code. If a distribution is delayed pursuant to Section 409A of the Code, the distribution shall be paid within 30 days after the end of the six-month period. If the Grantee dies during such six-month period, any postponed amounts shall be paid within 60 days of the Grantee's death. The determination of key employees, including the number and identity of persons considered key employees and the identification date, shall be made by the Committee or its delegate each year in accordance with Section 416(i) of the Code and the "specified employee" requirements of Section 409A of the Code. Notwithstanding anything in this Plan or any Grant Instrument to the contrary, each Grantee shall be solely responsible for the tax consequences of Grants under this Plan, and in no event shall the Company have any responsibility or liability if any Grant does not meet the applicable requirements of Section 409A of the Code. Although the Company intends to administer the Plan to prevent taxation under Section 409A of the Code, the Company does not represent or warrant that the Plan or any Grant complies with any provision of federal, state, local or other tax law.

(d) Employees Subject to Taxation outside the United States. With respect to Grantees who are subject to taxation in countries other than the United States, the Committee may make Grants on such terms and conditions as the Committee deems appropriate to comply with the laws of the applicable countries, and the Committee may create such procedures, addenda and subplans and make such modifications as may be necessary or advisable to comply with such laws.

(e) Establishment of Subplans. The Committee may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Committee shall establish such sub-plans by adopting supplements to the Plan setting forth (i) such limitations on the Committee's discretion under the Plan as the Committee deems necessary or desirable and (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Committee shall deem necessary or desirable. All supplements adopted by the Committee shall be deemed to be part of the Plan, but each supplement shall apply only to Grantees within the affected jurisdiction and the Employer shall not be required to provide copies of any supplement to Grantees in any jurisdiction that is not affected.

(f) Clawback Rights. Subject to the requirements of applicable law, the Committee may provide in any Grant Instrument that, if a Grantee breaches any restrictive covenant agreement between the Grantee and the Employer (which may be set forth in any Grant Instrument) or otherwise engages in activities that constitute Cause either while employed by, or providing service to, the Employer or within a specified period of time thereafter, all Grants held by the Grantee shall terminate, and the Company may rescind any exercise of an Option and delivery of units upon such exercise on such terms as the Committee shall determine, including the right to require that in the event of any such rescission, (i) the Grantee shall return to the Company the units received upon the exercise of any Option or, (ii) if the Grantee no longer owns the units, the Grantee shall pay to the Company the amount of any gain realized or payment received as a result of any sale or other disposition of the units (or, in the event the Grantee transfers the units by gift or otherwise without consideration, the Fair Market Value of the units on the date of the breach of the restrictive covenant agreement (including a Grantee's Grant Instrument containing restrictive covenants) or activity constituting Cause), net of the price originally paid by the Grantee for the units. Payment by the Grantee shall be made in such manner and on such terms and conditions as may be required by the Committee. The Employer shall be entitled to set off against the amount of any such payment any amounts otherwise owed to the Grantee by the Employer. In addition, all Grants under the Plan shall be subject to any applicable clawback or recoupment policies, unit trading policies and other policies that may be implemented by the Board from time to time. By accepting a Grant under the Plan, Grantees agree and acknowledge that they are obligated to cooperate with, and provide any and all assistance necessary to, the Company to recover or recoup Company Units underlying any such Grant or amounts paid under the Plan subject to clawback or recoupment pursuant to such policy, listing standard or law. Such cooperation and assistance shall include, but is not limited to, executing, completing and submitting any documentation necessary to recover or recoup any such Company Units or amount paid from a Grantee's accounts, or pending or future compensation or Grants under the Plan.

(g) Governing Law. The validity, construction, interpretation and effect of the Plan and Grant Instruments issued under the Plan shall be governed and construed by and determined in accordance with the laws of the State of Delaware without giving effect to the conflict of laws provisions thereof.

* * * * *

Exhibit 21.1

Subsidiaries of Tucows Inc., a Pennsylvania corporation

1. Tucows (Delaware) Inc., a Delaware corporation, is a wholly owned subsidiary of Tucows Inc.
2. Tucows Domains Services, Inc., a Delaware corporation, is a wholly owned subsidiary of Tucows (Delaware) Inc.
3. Tucows.com Co., a Nova Scotia corporation, is a wholly owned subsidiary of Tucows Domains Services, Inc.
4. Wavelo, Inc., a Delaware corporation, is a wholly owned subsidiary of Tucows (Delaware) Inc.
5. Tucows (UK) Limited, a company incorporated in England and Wales, is a wholly owned subsidiary of Tucows.com Co.
6. Tucows (Australia) Pty Limited, a Victoria corporation, is a wholly owned subsidiary of Tucows.com Co.
7. EPAG Domainservices GmbH, a Bonn corporation, is a wholly owned subsidiary of Tucows.com Co.
8. Ting Inc., a Delaware corporation, is a wholly owned subsidiary of Tucows (Delaware) Inc.
9. Tucows Domains Inc., an Ontario corporation, is a wholly owned subsidiary of Tucows.com Co.
10. Contact Privacy Inc., an Ontario corporation, is a wholly owned subsidiary of Tucows.com Co.
11. Tucows Fiber, Inc, a Delaware corporation, is a wholly owned subsidiary of Tucows (Delaware) Inc.
12. Ting Fiber, LLC., a Delaware limited liability company, is a wholly owned subsidiary of Tucows Fiber, Inc.
13. Ting Virginia, LLC, a Virginia limited liability company, is a wholly owned subsidiary of Ting Fiber, LLC.
14. Blue Ridge Websoft, LLC, a Virginia limited liability company, is a wholly owned subsidiary of Ting Virginia, LLC.
15. Fiber Roads, LLC, a Virginia limited liability company, is a wholly owned subsidiary of Ting Virginia, LLC.
16. Navigator Network Services, LLC, a Virginia limited liability company, is a wholly owned subsidiary of Ting Virginia, LLC.
17. Tucows (Emerald), LLC, a Delaware limited liability company, is a wholly owned subsidiary of Tucows Domains Services, Inc.
18. eNom, LLC, a Delaware limited liability company, is a wholly owned subsidiary of Tucows (Emerald), LLC.
19. eNom Canada Corp. a Nova Scotia corporation, is a wholly owned subsidiary of eNom, LLC.
20. Whois Privacy Protection Services, Inc, Nevada corporation, is a wholly owned subsidiary of eNom, LLC.
21. Secure Business Services, Inc., a Nevada corporation, is a wholly owned subsidiary of eNom, LLC.
22. Ascio Technologies, Corp., a Nova Scotia corporation, is a wholly owned subsidiary of Tucows.com Co.
23. Cedar Holdings Group, LLC, a Colorado limited liability company, is a wholly owned subsidiary of Ting Fiber, LLC.
24. Zippytech, LLC, a Colorado limited liability company, is a wholly owned subsidiary of Cedar Holdings Group, LLC.
25. Zippytech of New Mexico, LLC., a New Mexico limited liability company, is a wholly owned subsidiary of Cedar Holdings Group, LLC.
26. Ting Telecom California LLC, a Delaware limited liability company, is a wholly owned subsidiary of Ting Fiber, LLC.
27. Simply Bits, LLC, an Arizona limited liability company, is a wholly owned subsidiary of Ting Fiber, LLC.

KPMG LLP
Vaughan Metropolitan Centre
100 New Park Place
Suite 1400
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Consent of Independent Registered Public Accounting Firm

The Board of Directors of Tucows Inc.:

We consent to the incorporation by reference in the registration statements (No. 333-12279, 333-37545, 333- 61181, 333-30342, 333-74010, 333-106961, 333-140985, 333-169848, 333-207863, 333-250959, 333-260785) on Form S-8 and the Registration Statement (No. 333-125843) on Form S-1 of Tucows Inc. (the Company) of our reports dated March 15, 2023, with respect to the consolidated balance sheets of Tucows Inc. as of December 31, 2022 and 2021, the related consolidated statements of comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2022, which reports appear in the annual report on Form 10-K of Tucows Inc. for the year ended December 31, 2022.

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants

Vaughan, Canada
March 15, 2023

Certification Pursuant to
Rules 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934, as Amended

I, Elliot Noss, certify that:

1. I have reviewed this annual report on Form 10-K of Tucows Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13-a15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13-a15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent function):

    a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 15, 2023

/s/ ELLIOT NOSS
Elliot Noss
Chief Executive Officer and President

Exhibit 31.2

Certification Pursuant to
Rules 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934, as Amended

I, Davinder Singh, certify that:

1. I have reviewed this annual report on Form 10-K of Tucows Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13-a15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13-a15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures, and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent function):

    a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 15, 2023

/s/ DAVINDER SINGH
Davinder Singh
Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C SECTION 1350

In connection with the Annual Report of Tucows Inc. (the "Company") on Form 10-K for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Elliot Noss, Chief Executive Officer and President of the Company, hereby certify to my knowledge, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2023

/s/ ELLIOT NOSS
Elliot Noss
Chief Executive Officer and President

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C SECTION 1350

In connection with the Annual Report of Tucows Inc. (the "Company") on Form 10-K for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Davinder Singh, Chief Financial Officer of the Company, hereby certify to my knowledge, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2023

/s/ DAVINDER SINGH
Davinder Singh
Chief Financial Officer

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