Cowen 49th Annual Technology, Media & Telecom Conference

June 1st, 2021

Note Regarding Forward-Looking Statements and Non-GAAP Financial Measures

This presentation contains “forward-looking statements” within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, which are subject to a number of risks and uncertainties. All statements other than statements of historical facts contained in this presentation, including without limitation statements regarding the projected financial results for the second quarter of 2021 and beyond, potential COVID-19 impacts, customer engagement and momentum, and plans for future product development and manufacturing, are forward-looking statements. Without limiting the foregoing, the words “believes”, “estimates”, “expects”, “expectations”, “intends”, “may”, “plans”, “projects” and other similar language, are intended to identify forward-looking statements.

Forward-looking statements are based on our current expectations and assumptions and are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results to be materially different from any future results or performance expressed or implied by the forward-looking statements including, but not limited to, risks related to the continuing COVID-19 pandemic; risks that we will not realize estimated cost savings and/or anticipated benefits from the acquisition of ECI Telecom Group Ltd. (“ECI”); failure to realize anticipated benefits from the sale of the Kandy Communications business (“Kandy”); supply chain disruptions resulting from component availability; risks to operations and sales resulting from geopolitical instabilities and disputes, including the conflict in Israel; unpredictable fluctuations in quarterly revenue and operating results; failure to compete successfully against telecommunications equipment and networking companies; credit risks; the timing of customer purchasing decisions and our recognition of revenues; macro economic conditions; our ability to recruit and retain key personnel; the impact of restructuring and cost-containment activities; litigation; rapid technological and market change; our ability to protect our intellectual property rights and obtain necessary licenses; risks related to cybersecurity and data intrusion; the potential for defects in our products; risks related to the terms of our credit agreement; higher risks in international operations and markets; increases in tariffs, trade restrictions or taxes on our products; currency fluctuations; failure or circumvention of our controls and procedures and the other risks and uncertainties disclosed in our periodic reports filed with the U.S. Securities and Exchange Commission, including our most recent Annual Report on Form 10-K.

Any forward-looking statements represent our views only as of the date on which such statement is made and should not be relied upon as representing our views as of any subsequent date. While we may elect to update forward-looking statements at some point, we specifically disclaim any obligation to do so, except as may be required by law.

This presentation also includes certain non-GAAP financial measures in addition to the U.S. GAAP financials. Our management believes that presenting certain non-GAAP financial measures provides meaningful information to investors in understanding our operating results and may enhance investors' ability to analyze financial and business trends including the ability to compare period to period more easily by excluding items that could have a disproportionately negative or positive impact on results in a given financial period. The non-GAAP measures have limitations as analytical tools and you should not consider them in isolation or as a substitute for the most directly comparable financial measures prepared in accordance with U.S. GAAP. We urge you to review the reconciliation of our non-GAAP financial measures to the most directly comparable GAAP financial measures set forth in the Appendix to this presentation, and not to rely on any single financial measure to evaluate our business.

Ribbon at a Glance

ribbon communications

Global provider of software and network solutions to service providers, enterprises, and critical infrastructure sectors enabling communications and high-bandwidth networking and connectivity

Headquarters: **Plano, Texas** • NASDAQ: **RBBN**

1000+	$935M	3,700	140	1000+
Customers[1]	2021 Revenue[2] (outlook)	Employees[1] (global)	Countries[1]	Patents[1]

Software & Services	Maintenance	Geographic Mix	RBBN Stock[3]
66% of 2020 Revenue	~ 80% of 2021 Renewals Completed	55% of 2020 Revenues Non-US	81% Increase YoY (NASDAQ 46%)

Notes:
1. As of December 31, 2020.
2. Based on midpoint of Full Year 2021 Business Outlook provided on Apr 28, 2021.
3. As of May 28, 2021.

We Provide Real Time Communications Technology

IP Optical Networking

- IP Switching and Routing
- High-capacity Optical Transport
- SDN, Automation & Multi-layer networking

Secure VoIP Communications

- Cloud-based secure Voice over IP
- Voice calling for cloud collaboration applications
- 4G/5G and Fixed voice services network evolution

Driving Open Networking and Cloud Communications

Rich History of Innovation Brought Together as Ribbon

Sonus

Session Border Controllers
Secure and interwork VoIP communications networks and enable cloud communications applications
Founded 1997

GENBAND

Media Gateways
Interwork legacy voice communications networks with Voice over Internet Protocol (VoIP) networks
Founded 1999

NORTEL NETWORKS

Network Modernization
Consolidate and modernize legacy fixed voice communications networks
Founded 1967

2010

2017

2018

2019

2020

edgewater NETWORKS

anova DATA

laurel networks

IP Service Edge Routers
Multiservice IP Edge routers for telecommunications carriers
Founded 1999

2005

ECI

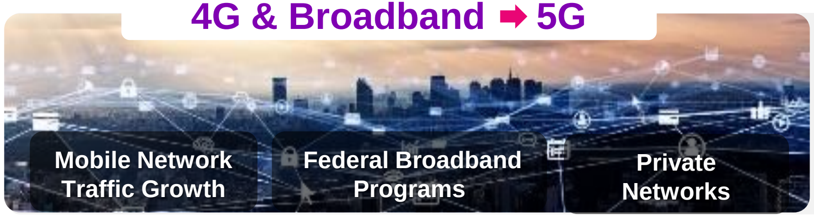
IP Optical Networking
Enable high-capacity broadband connectivity, routing and transport for communications networks
Founded 1961

Solutions Aligned With Favorable Industry Trends

Market & Technology Disruption

Ribbon Focus and Investment

4G & Broadband ➡ 5G



High-capacity IP Optical Networking

5G x-haul, Flex Ethernet, network slicing and timing solutions

Network vendor replacement programs

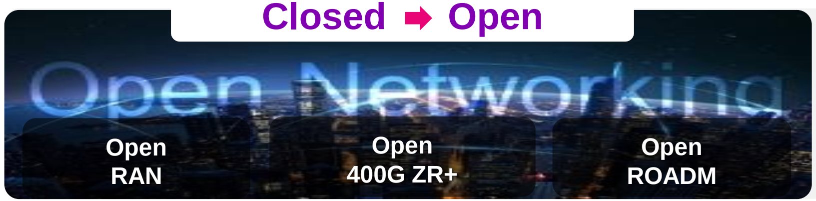
Centralized ➡ Cloud

Cloud-native software for secure communications

Software Defined Networking and automation

Network Functions Virtualization

Closed ➡ Open



Open, interoperable technology enabling best-of-breed approach

Commercial silicon use versus vertical integration

High performance and cost optimized technology ex: 400G ZR+

Positioned for Increased Growth and On-Going Success

Focused on Large Market Segments

- Optical Transport
  - Metro WDM
  - Open, pluggable optics
- IP Switching and Routing
  - Edge IP/MPLS and Segment Routing
  - 5G Backhaul
- Adoption of cloud collaboration platforms
- Secure enterprise communications

Favorable Industry Trends

- 4.5X growth in global mobile traffic from 2020-2026[1]
- Growth in fixed broadband IP traffic
- Shift to open networking
- Expanding use of 5G, cloud and edge technologies
- Exploiting weakened competitors

Disruptive Innovation

- Software-defined, multilayer networking and cloud-native applications
- IP segment routing and 5G network slicing
- High performance optics with disruptive economics
- Analytics, Machine Learning and Automation

Trusted Business Partner

- We have the world's leading service providers as our customers
- Growing enterprise customer base across industry verticals and critical infrastructures
- Diverse product market strengths creates significant cross-sell opportunity

Note:
1. Source: Ericsson Mobility Report, November 2020

Servicing Multiple Segments Across the Network

2020 Serviceable Market

IP Routing

$6B

Dell’Oro Service Provider Edge Router minus China

Optical Transport

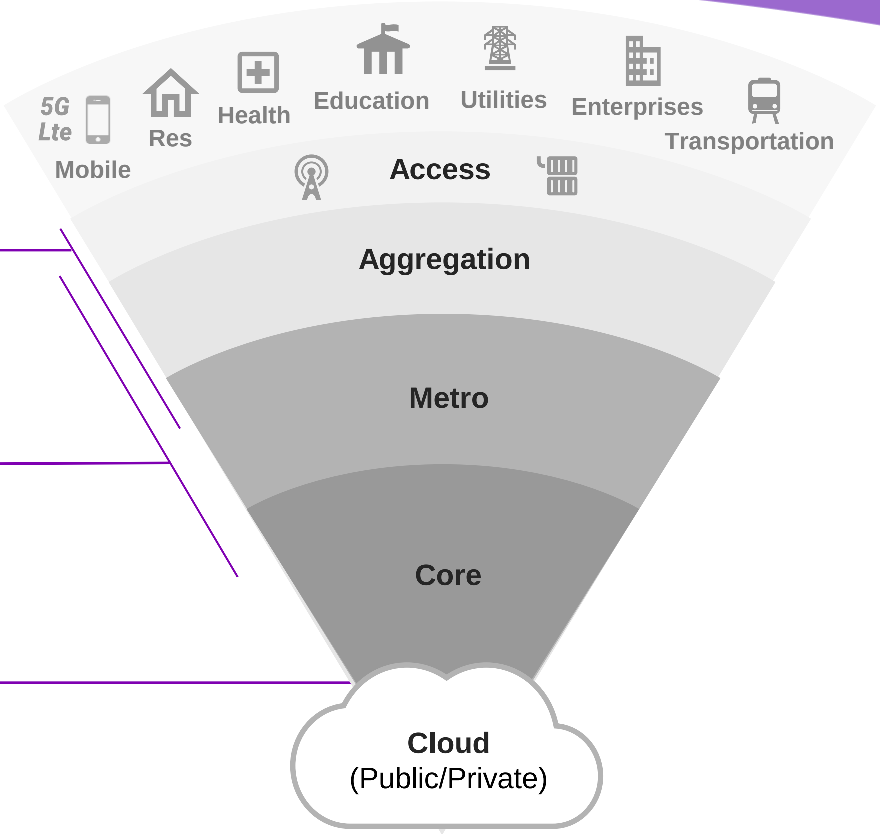
$8B

Dell’Oro Metro & Long Haul minus China and DCI

Secure VoIP

$2B

Omdia & Exact Ventures - SBCs & Voice solutions minus China



Market size numbers are rounded and includes Ribbon Modelling

Focused on Gaining Share in Large Markets

Higher Growth Serviceable Market Segments and CAGR

IP Routing

Edge Router 3%

Optical Transport

WDM Metro 3%

Secure VoIP

Virtual SBC 13%
Enterprise SBC 5%

Share Gain Focus

1. Focus on higher-growth market sub-segments
2. Leading the transition to Open Networking
3. Disruptive solutions enabled by 5G and cloud
4. Capturing share from weakened competitors
5. Global cross-sell opportunities

CAGR is based on 2020 to 2025 forecasts from Dell'Oro (IP and Optical), Omdia and Exact Ventures (Secure VoIP), Ribbon Modeling and are rounded

IP Optical Networking Portfolio Delivering Multi-layer Optimization

Controller - Muse

Multi-layer Optimization
Increase in automation
Improved asset utilization
Capex optimization

IP - Neptune

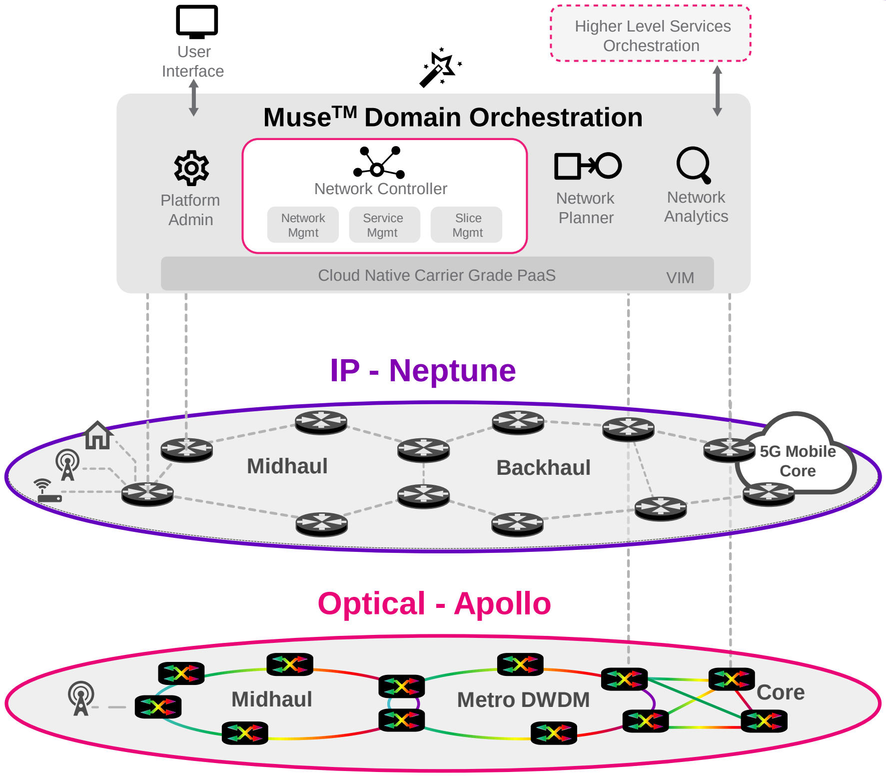
5G x-haul (front/mid/back)
5G transport with elastic scalability

Multiservice Aggregation
Converged access edge aggregation

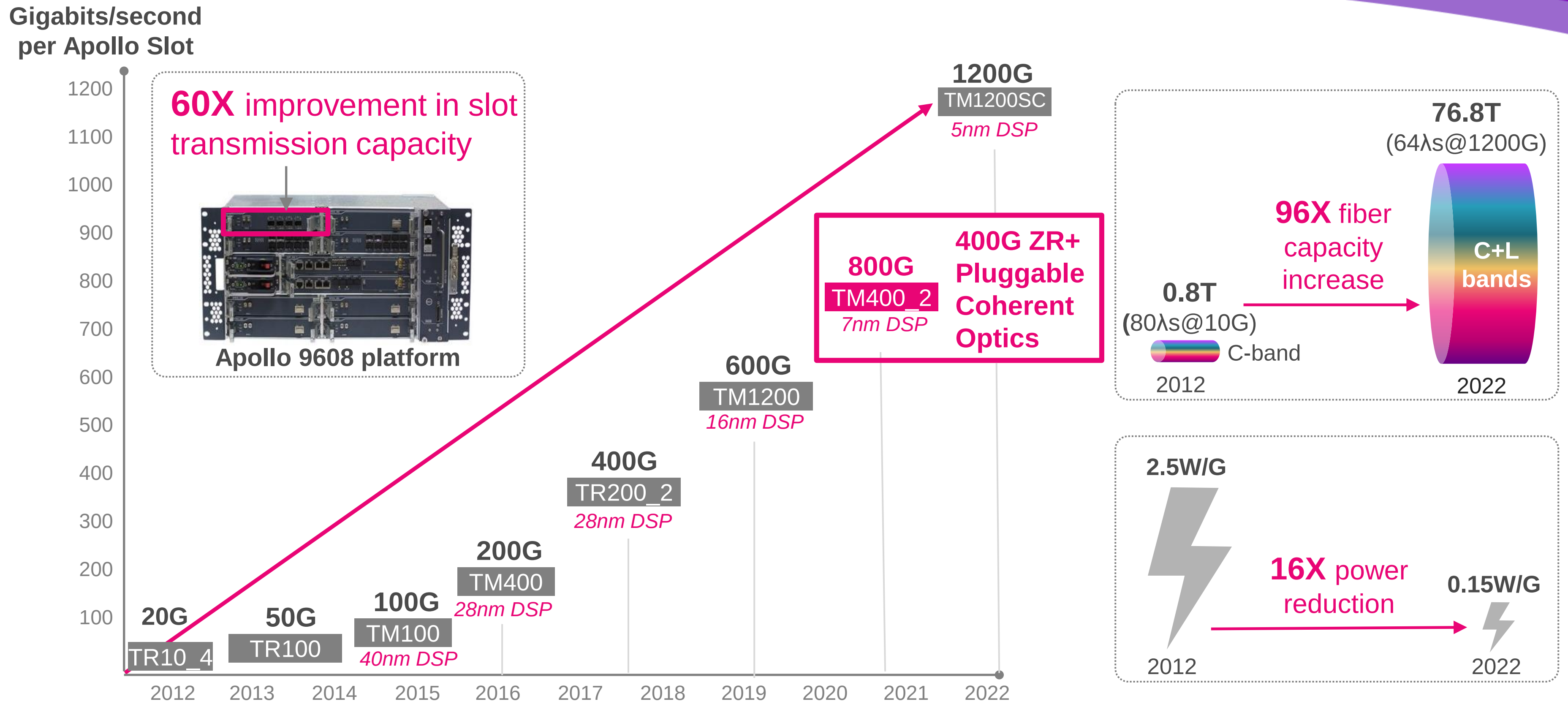
Optical - Apollo

Open and Powerful
400G ZR+

Intelligent
SDN features and integrated monitoring



Innovation Driving Disruptive Economics in Optical Transport



Secure VoIP Portfolio Applications Across Networks and the Cloud

Enterprise

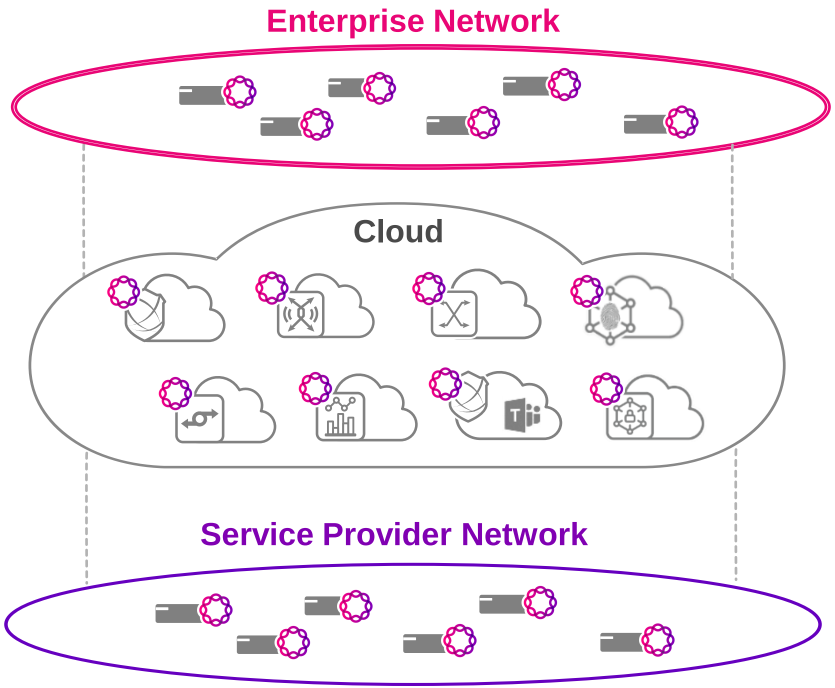
- Secure Unified Communications and Teams and Zoom Calling
- Secure Contact Center

Cloud

- Secure VoIP, UC applications and Teams
- Analytics and Call Trust
- Secure Contact Center

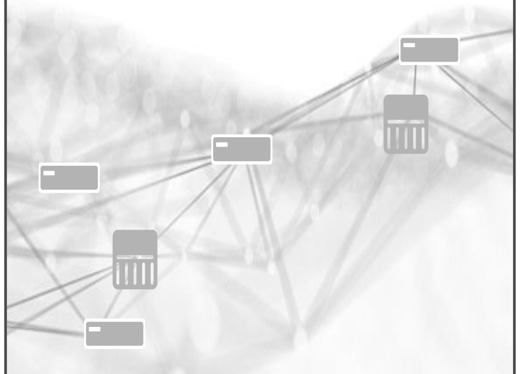
Service Provider

- VoIP Communications, Secure VoIP and Secure Network Connectivity
- Fixed and 4G/5G Mobile Voice Services
- Analytics



Established Network Position Enables New Analytics Applications

Communications Network



4G 5G Fixed

Data

Policy & Closed-Loop Automation

Analytics

Data Ingestion

Machine Learning

Automation

Operations

Network Operations
Network Management
Quality of Experience
Customer Care Applications

Security

Detect & Mitigate Fraud
DoS Prevention
Rogue/Bad Actor Identification

Monetization

Marketing Applications
Data Monetization
Subscriber & Engagement Profiling

Significant Revenue from Services and Recurring Maintenance

Professional Services Presence and Scale ($101M revenue in 2020)

- Network analysis & consulting
- Engineering design & installation
- Integration & validation
- Transformation & migration
- Managed network operation

Maintenance Provides Durable Recurring Revenue Stream

- **$275M revenue** in 2020
- **96%+ Renewal rate** in Secure VoIP[1]
- **Nearly 80%** of 2021 renewals completed by end of 1Q21

Note:
1. Maintenance renewal rate for Cloud & Edge direct sales.

Large and Diverse Service Provider and Enterprise Customer Base

Telco and Mobile

Multi-System Operators

Enterprise Verticals

Utilities

Transportation

Government

Finance

Healthcare

Education

Experienced Leadership Team

Tony Scarfo
EVP, GM Cloud & Edge BU

- 30 years industry experience
- EVP of technology at Sonus Networks
- Leadership roles at Polycom, ECI Telecom, Juniper Networks, Unisphere, and Lucent

Mick Lopez
EVP & Chief Financial Officer

- 40 years financial experience
- CFO of multiple public and private companies; Vista Outdoor, Veritas, Harris Corp, and Aricent Group
- Financial roles with Cisco, Tyco, IBM and KPMG

Patrick Macken
EVP, General Counsel

- 20 years of legal experience
- Previously SVP, General Counsel of ARRIS International
- Partner at Troutman Sanders LLP
- Expertise in technology, media & telecom

Sam Bucci
EVP, GM IP Optical Networks BU

- 27 years industry experience
- Led the multi-billion-dollar optical networking business unit for Nokia and Alcatel-Lucent
- Senior Product management roles at Nortel

Bruce McClelland
President, CEO & Director

- 30 years industry experience
- CEO of ARRIS and led its sale to CommScope
- Leader in the successful acquisitions and integrations of Ruckus, Pace and the Motorola Home Business

Steven Bruny
EVP., Sales, Americas Region

- 30 years industry experience
- Executive sales and COO of GENBAND
- CEO of Aztek Networks
- Founder of Connexn Technologies and Information + Graphics Sys

Steve McCaffery
EVP, Sales, EMEA & APAC

- 30 years industry experience
- Executive team of ARRIS managing $2.4B international business
- Executive sales and management roles at Motorola & Alcatel-Lucent

Petrena Ferguson
SVP Human Resources

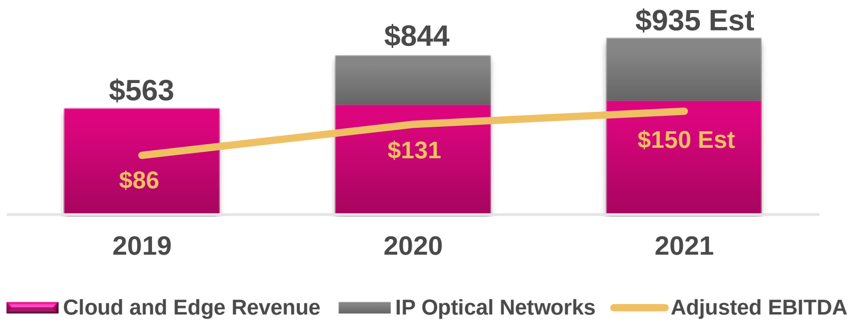
- 20 years HR experience in telecom and information technology
- Vice President of HR at GENBAND
- Senior HR roles at Nortel and Newbridge and start-up organizations

Sean Matthews
EVP Corp. Dev & Strategy

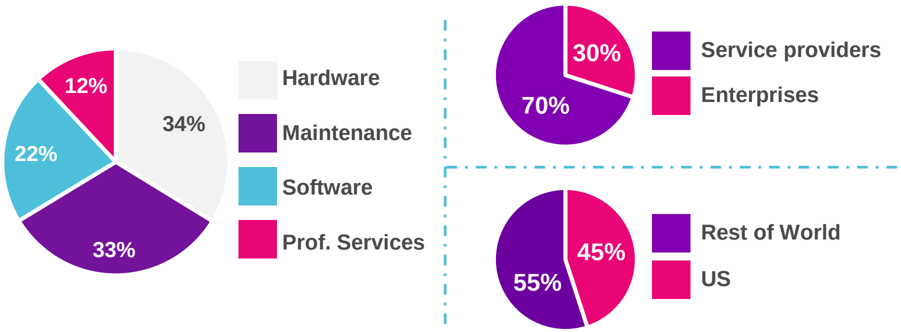
- 25 years industry experience
- Chief Transformation Officer and EVP Strategy & Corp. Dev.at Tivo/Rovi
- Executive Strategy and Corp Dev roles at ARRIS and Motorola Home

Key Financials

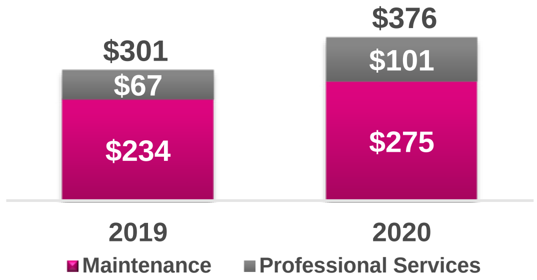
Revenue and Adjusted EBITDA ($M)[1, 2]



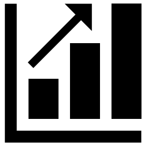
2020 Revenue Diversification[3]



Historical Services Revenue ($M)



RBBN Stock Performance[4]



	YTD % Change	1-Yr % Change
RBBN	**13%**	**81%**
NASDAQ Composite	7%	46%
S&P 500	12%	38%

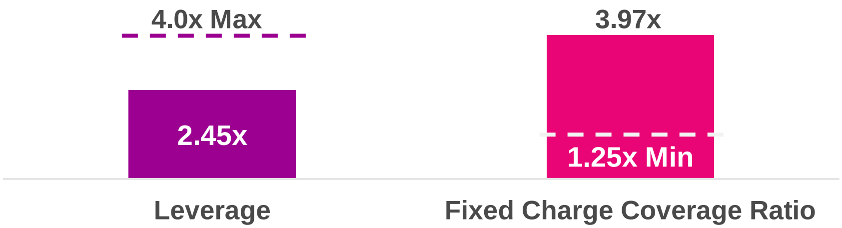
Notes:
1. Please see the basis of presentation and non-GAAP reconciliations in the appendix of this presentation.
2. 2021 Revenue and Adjusted EBITDA based on midpoint of 2021 Business Outlook, provided on April 28, 2021.
3. Service Provider and Enterprise percentages are percentages of total product revenue; others are percentages of total revenue; may not sum to 100% due to rounding.
4. As of May 28, 2021.

Capital Position and Priorities

Capital Priorities

- Using capital for debt pay down, but will evaluate opportunities to gain scale in IP Optical business
- Currently focused on ECI integration

4Q20 Debt Covenant Compliance[1]



($MM)	2019	2020
GAAP Net Cash provided by operating activities	56	102
Interest paid	4	16
Purchases of property and equipment	(11)	(27)
Non-GAAP unlevered free cash flow	**49**	**90**
Cash at end of period	**45**	**136**

Note:
1. As per bank covenant calculations.

Building Shareholder Value

Strategy to Address Growing Market Opportunity

- Focused on large market segments
- Favorable industry trends
- Disruptive innovation
- Trusted business partner

Strong Leadership and Execution

- Experienced management team with proven track record incentivized to drive growth in the business
- Track record of consistent execution and achieving corporate objectives

Appendix

Addressable Market Sizing References

1. Dell’Oro Group, Optical Transport Five Year Forecast Report 2021 – 2025 (Optical), (Yearly)
   Volume 21, Number 1 O2A, Published January 2021,
   Covering: WDM, Multiservice Multiplexer, Optical Switch, Optical Packet, and Data Center Interconnect

2. Dell’Oro Group, Router & Carrier Ethernet Switch Five Year Forecast Report 2021 – 2025 (IP), (Yearly)
   Volume 25, Number 1 R2A, Published January 2021
   Covering: Enterprise Routers and Service Provider Routers

3. Omdia, VoIP and IMS Market Tracker (Secure VoIP & SP-SBC), (Quarterly)
   Published February 2021, Edition: Q4-2020 (for the quarter ended 31 December 2020)

4. Omdia, Enterprise SBCs and VoIP Gateways Market Tracker (E-SBC), (Quarterly)
   Published March 2021, Edition: Q4-2020 (for the quarter ended 31 December 2020)

5. IHS Markit (now Omdia), Enterprise Unified Communications and Voice Equipment (PBX), (Quarterly)
   Published May 31, 2018, Edition Q1-2018 (for quarter ended 31 March 2018)

6. Omdia, NFV Hardware, Software and Services Technology Forecast (NFV), (Biannually),
   December 2020, Edition: H2-2020 (for half-year ending 30 June 2020)

7. Exact Ventures, STP Signaling Forecast Edition (STP), Published September 2020

Basis of Presentation

Totals may not sum due to rounding.

The terms “Cloud and Edge”, “Ribbon standalone”, “Ribbon’s organic business” and “organic” as used herein refer to the business, continuing operations and/or financial results, as the context dictates, of Ribbon Communications excluding the recently acquired ECI Telecom business, which was completed on March 3, 2020. The term “overall” as used herein refers to Ribbon consolidated results (including the results of ECI post-acquisition through March 31, 2021) for the metric or period indicated.

ECI results prior to its acquisition by Ribbon on March 3, 2020 have been combined with the Ribbon standalone results for certain financial metrics, for illustrative purposes only. These combined results are presented for illustrative purposes and are not intended to represent or be indicative of the actual results of the combined company that would have been achieved had the acquisition occurred on January 1, 2020.

On December 1, 2020, Ribbon sold Kandy; the results of the Kandy business are included in all periods through that date.

IP Optical Networks relates to the ECI Telecom business.

Cloud and Edge relates to Ribbon standalone and excludes the ECI Telecom business.

Discussion of Non-GAAP Financial Measures

Our management uses several different financial measures, both GAAP and non-GAAP, in analyzing and assessing the overall performance of its business, making operating decisions, planning and forecasting future periods, and determining payments under compensation programs. We consider the use of non-GAAP financial measures helpful in assessing the core performance of our continuing operations and when planning and forecasting future periods. Our annual financial plan is prepared on a non-GAAP basis and is approved by our board of directors. In addition, budgeting and forecasting for revenue and expenses are conducted on a non-GAAP basis and actual results on a non-GAAP basis are assessed against the annual financial plan. By continuing operations, we mean the ongoing results of the business adjusted for certain expenses and credits, as described below. We believe that providing non-GAAP information to investors will allow investors to view the financial results in the way our management views them and helps investors to better understand our core financial and operating performance and evaluate the efficacy of the methodology and information used by our management to evaluate and measure such performance.

While our management uses non-GAAP financial measures as tools to enhance their understanding of certain aspects of our financial performance, our management does not consider these measures to be a substitute for, or superior to, GAAP measures. In addition, our presentations of these measures may not be comparable to similarly titled measures used by other companies. These non-GAAP financial measures should not be considered alternatives for, or in isolation from, the financial information prepared and presented in accordance with GAAP. Investors are cautioned that there are material limitations associated with the use of non-GAAP financial measures. In particular, many of the adjustments to our financial measures reflect the exclusion of items that are recurring and will be reflected in our financial results for the foreseeable future.

Discussion of Non-GAAP Financial Measures (continued)

Acquisition-Related Inventory Adjustment

Acquisition-related inventory adjustment amounts are inconsistent in frequency and amount and are significantly impacted by the then-current market prices of such inventory items. We believe that excluding non-cash inventory adjustments arising from acquisitions facilitates the comparison of our financial results to our historical operating results and to other companies in our industry as if the inventory had been acquired by us through our normal channels rather than acquired.

Stock-Based Compensation

The expense related to stock-based awards is generally not controllable in the short-term and can vary significantly based on the timing, size and nature of awards granted. We believe that presenting non-GAAP operating results that exclude stock-based compensation provides investors with visibility and insight into our management's method of analysis and the Company's core operating performance.

Amortization of Acquired Intangible Assets

Amortization amounts are inconsistent in frequency and amount and are significantly impacted by the timing and size of acquisitions. We believe that excluding non-cash amortization of intangible assets facilitates the comparison of our financial results to our historical operating results and to other companies in our industry as if the acquired intangible assets had been developed internally rather than acquired.

Litigation Costs

We have been involved in litigation with one of our competitors and with a former GENBAND business partner and have reached settlements in both cases. We exclude the costs of such litigation because we believe such costs are not part of our core business or ongoing operations.

Discussion of Non-GAAP Financial Measures (continued)

Acquisition-, Disposal- and Integration-Related Expense

We consider certain acquisition-, disposal- and integration-related costs to be unrelated to the organic continuing operations of our acquired businesses and the Company, and such costs are generally not relevant to assessing or estimating the long-term performance of the acquired assets. We exclude such acquisition-, disposal- and integration-related costs to allow more accurate comparisons of our financial results to our historical operations and the financial results of less acquisitive peer companies and allows management and investors to consider the ongoing operations of the business both with and without such expenses.

Restructuring and Related Expense

We have recorded restructuring and related expense to streamline operations and reduce operating costs by closing and consolidating certain facilities and reducing our worldwide workforce. We believe that excluding restructuring and related expense facilitates the comparison of our financial results to our historical operating results and to other companies in our industry, as there are no future revenue streams or other benefits associated with these costs.

Gain on Sale of Business

On December 1, 2020, we completed the sale of Kandy to AVCT. As consideration, we received units of AVCT securities, comprised of AVCT's Series A-1 convertible debentures ("Debentures") and warrants to purchase shares of AVCT's common stock ("Warrants"), with an aggregate fair value approximating $84 million on the date of sale. We exclude this gain because we believe that such gain is not part of our core business or ongoing operations.

Discussion of Non-GAAP Financial Measures (continued)

Interest Income on Debentures

We recorded paid-in-kind interest income on the Debentures, which increased their fair value. We exclude this interest income because we believe that such a gain is not part of our core business or ongoing operations.

(Increase) Decrease in Fair Value of Investments

We calculate the fair value of the Debentures and Warrants at each quarter-end and record any adjustments to their fair values in Other (expense), income, net. We exclude this and any subsequent gains and losses from the change in fair value of the Debentures and Warrants because we believe that such gains or losses are not part of our core business or ongoing operations.

Tax Effect of Non-GAAP Adjustments

Non-GAAP income tax expense is presented based on an estimated tax rate applied against forecasted annual non-GAAP income. Non-GAAP income tax expense assumes no available net operating losses or valuation allowances for the U.S. because of reporting significant cumulative non-GAAP income over the past several years. We are reporting our non-GAAP quarterly income taxes by computing an annual rate for the Company and applying that single rate (rather than multiple rates by jurisdiction) to our consolidated quarterly results. We expect that this methodology will provide a consistent rate throughout the year and allow investors to better understand the impact of income taxes on our results. Due to the methodology applied to our estimated annual tax rate, our estimated tax rate on non-GAAP income will differ from our GAAP tax rate and from our actual tax liabilities.

Discussion of Non-GAAP Financial Measures (continued)

Adjusted EBITDA

We use Adjusted EBITDA as a supplemental measure to review and assess our performance. We calculate Adjusted EBITDA by excluding from Income (loss) from operations: depreciation; amortization of acquired intangible assets; stock-based compensation; acquisition-related inventory adjustments; certain litigation costs; acquisition-, disposal- and integration-related expense; and restructuring and related expense. In general, we exclude the expenses that we consider to be non-cash and/or not part of our ongoing operations. We may exclude other items in the future that have those characteristics. Adjusted EBITDA is a non-GAAP financial measure that is used by our investing community for comparative and valuation purposes. We disclose this metric to support and facilitate our dialogue with research analysts and investors. Other companies may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

GAAP to Non-GAAP Reconciliation

$000's	1Q19	2Q19	3Q19	4Q19	FY19
Revenue	$ 118,928	$ 145,421	$ 137,653	$ 161,109	$ 563,111
GAAP Gross profit	$ 66,234	$ 90,765	$ 88,399	$ 109,259	$ 354,657
GAAP Gross margin - total (Total gross profit/Revenue)	55.7%	62.4%	64.2%	67.8%	63.0%
Stock-based compensation	0.1%	0.1%	0.1%	0.1%	0.1%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.0%
Non-GAAP Gross margin - total	55.8%	62.5%	64.3%	67.9%	63.1%
Adjusted EBITDA					
GAAP Income (loss) from operations	$ (36,228)	$ (7,096)	$ 2,686	$ (148,822)	$ (189,460)
Depreciation	2,921	2,970	2,933	3,125	11,949
Amortization of acquired intangible assets	11,922	12,647	12,260	12,396	49,225
Stock-based compensation	4,139	1,530	2,485	4,447	12,601
Acquisition-related inventory adjustment	-	-	-	-	-
Litigation costs	6,186	1,315	(1,534)	1,767	7,734
Impairment of goodwill	-	-	-	164,300	164,300
Acquisition-, disposal- and integration-related expense	3,199	1,965	1,697	6,092	12,953
Restructuring and related expense	4,932	9,144	2,372	(49)	16,399
Non-GAAP Adjusted EBITDA	$ (2,929)	$ 22,475	$ 22,899	$ 43,256	$ 85,701

$000's	1Q20			2Q20			3Q20			4Q20			FY20		
	Cloud and Edge	IP Optical Networks	Consolidated	Cloud and Edge	IP Optical Networks	Consolidated	Cloud and Edge	IP Optical Networks	Consolidated	Cloud and Edge	IP Optical Networks	Consolidated	Cloud and Edge	IP Optical Networks	Consolidated
Revenue	$ 128,031	$ 29,951	$ 157,982	$ 146,907	$ 63,586	$ 210,493	$ 153,530	$ 77,588	$ 231,118	$ 154,802	$ 89,400	$ 244,202	$ 583,270	$ 260,525	$ 843,795
GAAP Gross profit	$ 78,778	$ 11,746	$ 90,524	$ 98,591	$ 24,676	$ 123,267	$ 101,711	$ 33,243	$ 134,954	$ 105,322	$ 39,040	$ 144,362	$ 384,402	$ 108,705	$ 493,107
GAAP Gross margin - total (Total gross profit/Revenue)	61.5%	39.2%	57.3%	67.1%	38.8%	58.6%	66.2%	42.8%	58.4%	68.0%	43.7%	59.1%	65.9%	41.7%	58.4%
Stock-based compensation	0.2%	0.0%	0.1%	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.2%	*	0.1%	0.1%	*	0.1%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.9%	0.0%	0.0%	0.0%	0.0%	0.8%	0.3%
Non-GAAP Gross margin - total	61.7%	39.2%	57.4%	67.2%	38.8%	58.7%	66.4%	45.5%	59.4%	68.2%	43.7%	59.2%	66.0%	42.5%	58.8%
Adjusted EBITDA															
GAAP Income (loss) from operations	$ (13,557)	$ (15,183)	$ (28,740)	$ 16,742	$ (15,150)	$ 1,592	$ 21,955	$ (10,038)	$ 11,917	$ 23,483	$ (6,583)	$ 16,900	$ 48,623	$ (46,954)	$ 1,669
Depreciation	2,993	481	3,474	2,984	1,802	4,786	2,990	1,504	4,494	3,144	1,290	4,434	12,111	5,077	17,188
Amortization of acquired intangible assets	12,214	2,120	14,334	11,324	3,345	14,669	12,513	3,836	16,349	11,724	3,834	15,558	47,775	13,135	60,910
Stock-based compensation	2,976	-	2,976	3,138	84	3,222	3,400	569	3,969	3,136	596	3,732	12,650	1,249	13,899
Acquisition-related inventory adjustment	-	-	-	-	-	-	-	2,000	2,000	-	-	-	-	2,000	2,000
Litigation costs	3,038	-	3,038	(937)	-	(937)	-	-	-	-	-	-	2,101	-	2,101
Impairment of goodwill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acquisition-, disposal- and integration-related expense	-	12,384	12,384	-	857	857	850	516	1,366	1,002	1,555	2,557	1,852	15,312	17,164
Restructuring and related expense	2,075	-	2,075	4,246	1,115	5,361	213	3,077	3,290	4,032	1,477	5,509	10,566	5,669	16,235
Non-GAAP Adjusted EBITDA	$ 9,739	$ (198)	$ 9,541	$ 37,497	$ (7,947)	$ 29,550	$ 41,921	$ 1,464	$ 43,385	$ 46,521	$ 2,169	$ 48,690	$ 135,678	$ (4,512)	$ 131,166

* Less than 0.1% impact on Gross margin

GAAP to Non-GAAP Reconciliation

$000's	1Q20 Cloud and Edge	1Q20 IP Optical Networks	1Q20 Consolidated	2Q20 Cloud and Edge	2Q20 IP Optical Networks	2Q20 Consolidated	3Q20 Cloud and Edge	3Q20 IP Optical Networks	3Q20 Consolidated
Revenue	$ 128,031	$ 29,951	$ 157,982	$ 146,907	$ 63,586	$ 210,493	$ 153,530	$ 77,588	$ 231,118
GAAP Gross profit	$ 78,778	$ 11,746	$ 90,524	$ 98,591	$ 24,676	$ 123,267	$ 101,711	$ 33,243	$ 134,954
GAAP Gross margin - total (Total gross profit/Revenue)	61.5%	39.2%	57.3%	67.1%	38.8%	58.6%	66.2%	42.8%	58.4%
Stock-based compensation	0.2%	0.0%	0.1%	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.9%
Non-GAAP Gross margin - total	61.7%	39.2%	57.4%	67.2%	38.8%	58.7%	66.4%	45.5%	59.4%
Adjusted EBITDA									
GAAP (Loss) income from operations	$ (13,557)	$ (15,183)	$ (28,740)	$ 16,742	$ (15,150)	$ 1,592	$ 21,955	$ (10,038)	$ 11,917
Depreciation	2,993	481	3,474	2,984	1,802	4,786	2,990	1,504	4,494
Amortization of acquired intangible assets	12,214	2,120	14,334	11,324	3,345	14,669	12,513	3,836	16,349
Stock-based compensation	2,976	-	2,976	3,138	84	3,222	3,400	569	3,969
Acquisition-related inventory adjustment	-	-	-	-	-	-	-	2,000	2,000
Litigation costs	3,038	-	3,038	(937)	-	(937)	-	-	-
Acquisition-, disposal- and integration-related expense	-	12,384	12,384	-	857	857	850	516	1,366
Restructuring and related expense	2,075	-	2,075	4,246	1,115	5,361	213	3,077	3,290
Non-GAAP Adjusted EBITDA	$ 9,739	$ (198)	$ 9,541	$ 37,497	$ (7,947)	$ 29,550	$ 41,921	$ 1,464	$ 43,385
Adjusted EBITDA Margin (Adjusted EBITDA/Revenue)									
GAAP (Loss) income from operations	-10.6%	-50.7%	-18.2%	11.4%	-23.8%	0.8%	14.3%	-12.9%	5.2%
Depreciation	2.3%	1.6%	2.2%	2.0%	2.8%	2.3%	1.9%	1.9%	1.9%
Amortization of acquired intangible assets	9.6%	7.1%	9.1%	7.7%	5.3%	6.9%	8.2%	4.9%	7.1%
Stock-based compensation	2.3%	0.0%	1.9%	2.1%	0.1%	1.5%	2.2%	0.7%	1.7%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.9%
Litigation costs	2.4%	0.0%	1.9%	-0.6%	0.0%	-0.4%	0.0%	0.0%	0.0%
Acquisition-, disposal- and integration-related expense	0.0%	41.3%	7.8%	0.0%	1.3%	0.4%	0.6%	0.7%	0.6%
Restructuring and related expense	1.6%	0.0%	1.3%	2.9%	1.8%	2.5%	0.1%	4.0%	1.4%
Non-GAAP Adjusted EBITDA Margin	7.6%	-0.7%	6.0%	25.5%	-12.5%	14.0%	27.3%	1.9%	18.8%

$000's	4Q20 Cloud and Edge	4Q20 IP Optical Networks	4Q20 Consolidated	FY20 Cloud and Edge	FY20 IP Optical Networks	FY20 Consolidated	Q121 Cloud and Edge	Q121 IP Optical Networks	Q121 Consolidated
Revenue	$ 154,802	$ 89,400	$ 244,202	$ 583,270	$ 260,525	$ 843,795	$ 125,422	$ 67,350	$ 192,772
GAAP Gross profit	$ 105,322	$ 39,040	$ 144,362	$ 384,402	$ 108,705	$ 493,107	$ 84,162	$ 26,385	$ 110,547
GAAP Gross margin - total (Total gross profit/Revenue)	68.0%	43.7%	59.1%	65.9%	41.7%	58.4%	67.1%	39.2%	57.3%
Stock-based compensation	0.2%	*	0.1%	0.1%	*	0.1%	0.1%	0.1%	0.2%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.8%	0.3%	0.0%	0.0%	0.0%
Non-GAAP Gross margin - total	68.2%	43.7%	59.2%	66.0%	42.5%	58.8%	67.2%	39.3%	57.5%
Adjusted EBITDA									
GAAP (Loss) income from operations	$ 23,483	$ (6,583)	$ 16,900	$ 48,623	$ (46,954)	$ 1,669	$ 3,632	$ (16,236)	$ (12,604)
Depreciation	3,144	1,290	4,434	12,111	5,077	17,188	3,137	1,089	4,226
Amortization of acquired intangible assets	11,724	3,834	15,558	47,775	13,135	60,910	11,306	4,517	15,823
Stock-based compensation	3,136	596	3,732	12,650	1,249	13,899	4,394	666	5,060
Acquisition-related inventory adjustment	-	-	-	-	2,000	2,000	-	-	-
Litigation costs	-	-	-	2,101	-	2,101	-	-	-
Acquisition-, disposal- and integration-related expense	1,002	1,555	2,557	1,852	15,312	17,164	241	956	1,197
Restructuring and related expense	4,032	1,477	5,509	10,566	5,669	16,235	5,620	330	5,950
Non-GAAP Adjusted EBITDA	$ 46,521	$ 2,169	$ 48,690	$ 135,678	$ (4,512)	$ 131,166	$ 28,330	$ (8,678)	$ 19,652
Adjusted EBITDA Margin (Adjusted EBITDA/Revenue)									
GAAP (Loss) income from operations	15.2%	-7.4%	6.9%	8.3%	-18.0%	0.2%	2.9%	-24.1%	-6.5%
Depreciation	2.0%	1.4%	1.8%	2.1%	1.9%	2.0%	2.5%	1.6%	2.2%
Amortization of acquired intangible assets	7.7%	4.3%	6.4%	8.2%	5.0%	7.3%	9.0%	6.7%	8.2%
Stock-based compensation	2.0%	0.7%	1.5%	2.2%	0.5%	1.6%	3.5%	1.0%	2.6%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.8%	0.2%	0.0%	0.0%	0.0%
Litigation costs	0.0%	0.0%	0.0%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%
Acquisition-, disposal- and integration-related expense	0.6%	1.7%	1.0%	0.3%	5.9%	2.0%	0.2%	1.4%	0.6%
Restructuring and related expense	2.6%	1.7%	2.3%	1.8%	2.2%	2.0%	4.5%	0.5%	3.1%
Non-GAAP Adjusted EBITDA Margin	30.1%	2.4%	19.9%	23.3%	-1.7%	15.5%	22.6%	-12.9%	10.2%

* Less than 0.1% impact on Gross margin

GAAP to Non-GAAP Reconciliation (Continued)

$000s	1Q20	Q220	Q320	Q420	FY20	Q121
GAAP Operating expenses	$ 119,264	$ 121,675	$ 123,037	$ 127,462	$ 491,438	$ 123,151
Stock-based compensation	(2,819)	(3,024)	(3,708)	(3,473)	(13,024)	(4,798)
Amortization of acquired intangible assets	(14,334)	(14,669)	(16,349)	(15,558)	(60,910)	(15,823)
Litigation costs	(3,038)	937	-	-	(2,101)	-
Acquisition-, disposal- and integration-related expense	(12,384)	(857)	(1,366)	(2,557)	(17,164)	(1,197)
Restructuring and related expense	(2,075)	(5,361)	(3,290)	(5,509)	(16,235)	(5,950)
Non-GAAP Operating expenses	$ 84,614	$ 98,701	$ 98,324	$ 100,365	$ 382,004	$ 95,383

Income (loss) from operations as a percentage of revenue ("Operating margin")	1Q20	Q220	Q320	Q420	FY20	Q121
GAAP Operating margin	-18.2%	0.8%	5.2%	6.9%	0.2%	-6.5%
Acquisition-related inventory adjustment	0.0%	0.0%	0.9%	0.0%	0.2%	2.6%
Stock-based compensation	1.9%	1.5%	1.7%	1.5%	1.6%	0.0%
Amortization of acquired intangible assets	9.1%	7.0%	7.0%	6.4%	7.3%	8.2%
Litigation costs	1.9%	-0.4%	0.0%	0.0%	0.2%	0.0%
Acquisition-, disposal- and integration-related expense	7.8%	0.4%	0.6%	1.0%	2.0%	0.6%
Restructuring and related expense	1.3%	2.5%	1.4%	2.3%	2.0%	3.1%
Non-GAAP Operating margin	3.8%	11.8%	16.8%	18.1%	13.5%	8.0%

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GAAP to Non-GAAP Reconciliation (Continued)

	1Q20	2Q20	3Q20	4Q20	FY20	1Q21
Earnings (loss) per share						
GAAP (Loss) per share or diluted earnings per share	$ (0.27)	$ (0.06)	$ 0.04	$ 0.81	$ 0.61	$ (0.31)
Acquisition-related inventory adjustment	-	-	0.01	-	0.01	-
Stock-based compensation	0.02	0.02	0.03	0.02	0.11	0.03
Amortization of acquired intangible assets	0.12	0.10	0.11	0.10	0.42	0.11
Litigation costs	0.02	(0.01)	-	-	0.01	-
Acquisition-, disposal- and integration-related expense	0.10	0.01	0.01	0.02	0.12	0.01
Restructuring and related expense	0.02	0.04	0.02	0.04	0.11	0.05
Gain on sale of business	-	-	-	(0.54)	(0.58)	-
Interest income on debentures	-	-	-	-	-	(0.01)
(Increase) decrease in fair value of investments	-	-	-	(0.20)	(0.21)	0.16
Tax effect of non-GAAP adjustments	*	(0.02)	(0.08)	(0.07)	(0.17)	(0.01)
Non-GAAP Diluted earnings per share	$ 0.01	$ 0.08	$ 0.14	$ 0.18	$ 0.43	$ 0.03
Weighted average shares used to compute (loss) per share or diluted earnings per share (000's)						
Shares used to compute **GAAP** diluted earnings (loss) per share	120,992	144,483	151,680	153,441	144,650	145,936
Shares used to compute **non-GAAP** diluted earnings per share	121,603	150,512	151,680	153,441	144,650	155,032

* Less than $0.01 impact on (loss) per share or diluted earnings per share

	1Q20	2Q20	3Q20	4Q20	FY20	1Q21
Unlevered Free Cash Flow ($000s)						
GAAP Net cash provided by (used in) operating activities	$ 39,932	$ (3,220)	$ 28,536	$ 36,316	$ 101,564	$ (6,212)
Interest paid	688	5,587	4,570	4,701	15,546	4,317
Purchases of property and equipment	(6,017)	(8,874)	(3,794)	(8,036)	(26,721)	(5,357)
Non-GAAP Unlevered free cash flow	$ 34,603	$ (6,507)	$ 29,312	$ 32,981	$ 90,389	$ (7,252)

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GAAP to Non-GAAP Reconciliation (Continued)

Outlook	Three months ending June 30, 2021 Range			Year ending December 31, 2021 Range		
Revenue (in $ millions)	$ 215	to	$ 225	$ 925	to	$ 945
Gross margin						
GAAP outlook	55.9%		56.9%	54.9%		55.9%
Stock-based compensation	0.1%		0.1%	0.1%		0.1%
Non-GAAP outlook	56.0%		57.0%	55.0%		56.0%
(Loss) earnings per share**						
GAAP outlook	$ (0.05)		$ (0.02)	$ (0.02)		$ 0.05
Stock-based compensation	0.03		0.03	0.14		0.14
Amortization of acquired intangible assets	0.11		0.11	0.43		0.43
Acquisition-, disposal- and integration-related expense	0.01		0.01	0.02		0.02
Restructuring and related expense	0.01		0.01	0.06		0.06
Interest income on debentures	*		*	(0.01)		(0.01)
Tax effect of non-GAAP adjustments	(0.02)		(0.03)	(0.13)		(0.15)
Non-GAAP outlook	$ 0.09		$ 0.11	$ 0.49		$ 0.54
Weighted average shares used to compute (loss) per share or diluted earnings per share (in thousands)						
GAAP Shares used to compute loss per share or diluted earnings per share	147,500		147,500	148,000		155,000
Non-GAAP Shares used to compute diluted earnings per share	155,000		155,000	155,000		155,000
Adjusted EBITDA (in $ millions)						
GAAP Operating income (loss)	$ (0.5)		$ 3.5	$ 27.1		$ 37.1
Depreciation	4.4		4.4	17.4		17.4
Amortization of acquired intangible assets	17.2		17.2	66.7		66.7
Stock-based compensation	5.2		5.2	20.9		20.9
Acquisition-, disposal- and integration-related expense	1.5		1.5	3.6		3.6
Restructuring and related expense	2.2		2.2	9.3		9.3
Non-GAAP outlook	$ 30.0		$ 34.0	$ 145.0		$ 155.0

* Less than $0.01 impact on earnings per share

** Excludes any income (loss) related to the change in fair value of the Debentures and Warrants received as sale consideration