Ribbon Communications

Oppenheimer 24th Annual Technology, Internet & Communications Conference

August 11, 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 third 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, including delays in customer deployments as a result of increases in cases; risks that we will not realize estimated cost savings and/or anticipated benefits from the acquisition of ECI Telecom Group Ltd. (“ECI”) and/or the sale of the Kandy Communications business (“Kandy”); supply chain disruptions resulting from component availability and/or geopolitical instabilities and disputes; 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; 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.

Key Technology Trends Are Transforming Our Communications Networks

Market Drivers

- Connected Devices
- Applications for Everything
- Software As a Service
- Personalized & Customized
- Explosion of Data

+

Technology Trends

- Software Driven Innovations
- Wireless Network Utilization
- Everything Moving to the Cloud

	Service Provider Enablement			Enterprise Connectivity		
From	Fixed Dedicated	Manual & Planned	Data Center	Dedicated Connectivity	On Premise Computing	On Campus Workforce
To	Ubiquitous Networks	Automated & Orchestrated	Edge Computing	Everything over IP	Cloud Networking	Work from Anywhere

Resulting in large opportunities through network evolution

Source: CMI 2012 Consumer Landscape

Carriers and Enterprises are Facing Evolving Network Challenges

Global Internet Users

66%

Global Connected Population in 2023

- Global Internet Users to surpass 5.3B by 2023
- 17% growth from 2020 to 2023

5G Mobile Subscriptions

3.5B

Global 5G subscriptions by 2026

- 55% CAGR from 2020 to 2026
- 5G to reach 40% of all mobile subs by 2026

Unified Communications

>1B

Combined total daily participants reported by Zoom, Teams, WebEx

- Zoom has 497k customers with >10 employees
- MSFT reported 90% growth in daily users in 2021

Connected Devices

29.3B

Global Connected Devices by 2023

- 9% CAGR from 2020 to 2023
- M2M to grow to 50% of connected devices by 2023

Mobile DataTraffic

300
Exabytes/Month

Global Mobile Data Traffic in 2026

- 30% CAGR from 2020 to 2026
- >50% of the traffic is estimated to be 5G by 2026

Voice Subscriber Networks

6.4B

Global Voice over LTE subscribers by 2025

- 16% CAGR from 2020 to 2025
- 5G and LTE driving growth in voice applications

Sources: Cisco 2020 Annual Internet Report, Ericsson June 2021 Mobility Report, Company public disclosures

ribbon

is a unique Company

providing open cloud-centric

solutions spanning multiple

network layers to **enable**

secure communications and

deliver **disruptive optical**

networking innovations `

Key Company Highlights

- Market leader in Session Border Controllers globally
- Recognized for delivering a very strong 5G optical transport Portfolio
- Positioned to capitalize on large growing optical networking markets
- Experiencing large upgrade cycle for cloud-based secure voice solutions
- Diversified software and service business with broad geographic mix
- Strong profitability with substantial cash flow generation and solid Balance Sheet

Ribbon at a Glance

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+	**$844M**	**3,700**	**140**	**1000+**
Customers[1]	2020 Revenue	Employees[1] (global)	Countries[1]	Patents[1]

Software & Services	**Maintenance**	**Geographic Mix**	**RBBN Stock[2]**
66% of 2020 Revenue	Over 90% of 2021 Renewals Completed by end of 2Q21	55% of 2020 Revenues Non-US	65% Increase YoY (NASDAQ 34%)

Notes:
1. As of December 31, 2020.
2. As of August 10, 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

2005

ECI

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

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

Positioned for Increased Growth and On-Going Success

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

5G

Open ROADM

RDOF

Focused on Large Market Segments

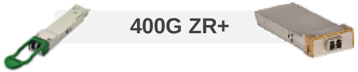
- Optical Transport
  - ➢ Metro WDM
  - ➢ Open, pluggable optics
- IP Switching and Routing
  - ➢ Edge IP/MPLS and Segment Routing
  - ➢ 5G Backhaul
- Adoption of cloud collaboration platforms
- Secure enterprise communications

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

Robocalls

Call Trust™



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

OPTUS

ROGERS

Singtel

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

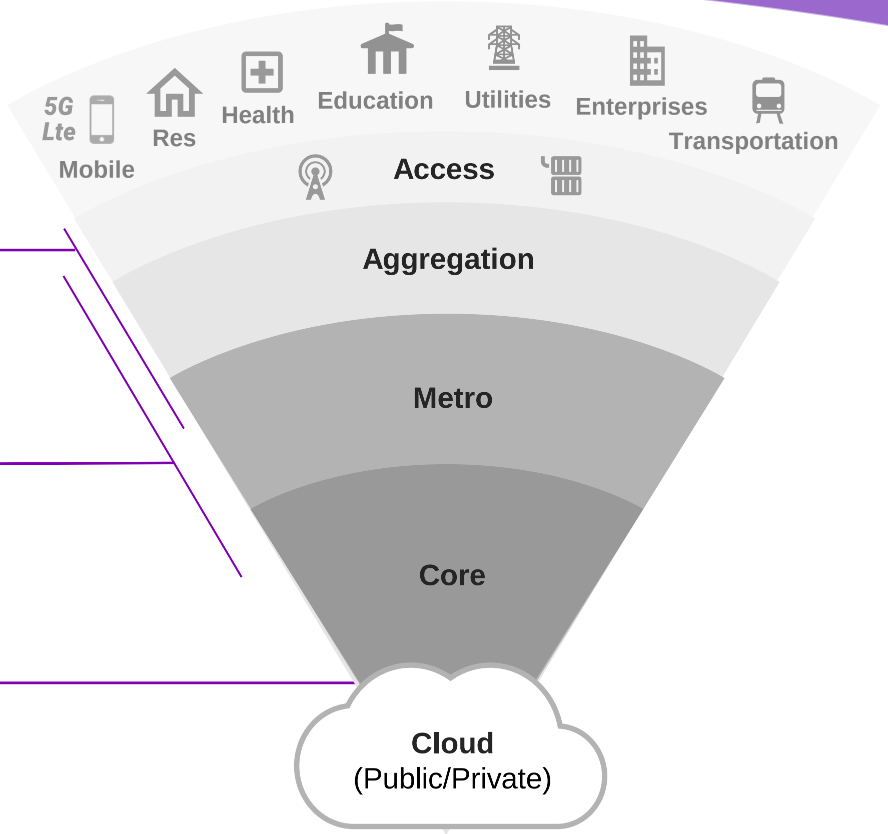
$8B

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

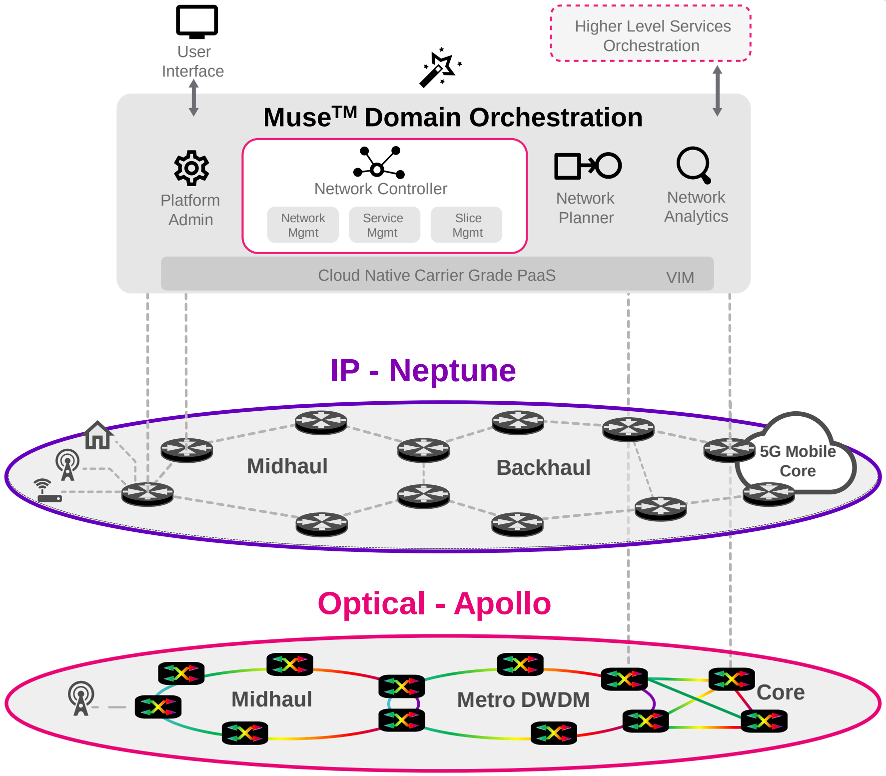
5G x-haul (front/mid/back)
5G transport with elastic scalability

Multiservice Aggregation
Converged access edge aggregation

Optical - Apollo

Open and Powerful
400G ZR+

Intelligent
SDN features and integrated monitoring



Secure VoIP Portfolio Applications Across Networks and the Cloud

Enterprise

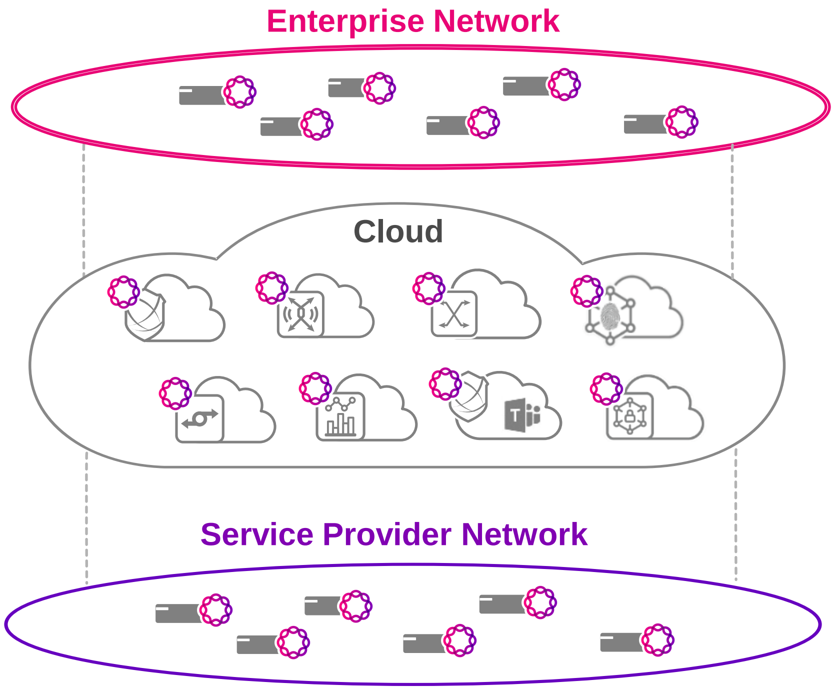
- Secure Unified Communications and Teams and Zoom Calling
- Secure Contact Center

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



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]

Over 90% of 2021 renewals completed by end of 2Q21

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

Second Quarter 2021 Results Overview

Bruce McClelland, President & CEO

Mick Lopez, Executive Vice President & CFO

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Business Highlights

- **Strong 1H21 financial results:**
  - 10% YoY[1] revenue growth
  - 60% YoY[1] Adj. EBITDA growth
  - Strong gross margins in both business units and continued disciplined expense control
- **Significant new IP Optical wins broadening Ribbon's global customer base:**
  - Rogers Communications selected Ribbon's industry-leading 400G ZR+ optical networking and SDN solutions to upgrade its transport network
  - Optus and Singtel Telecommunications multi-service transport network DWDM tender award
  - Strong growth in North American markets with 1H21 sales exceeding sales in all of 2020, including Huawei replacement win with US wireless provider
- **Continuing product innovation:**
  - Successful introduction and initial shipments of industry's first 400G ZR+ DWDM metro and long-haul transport solution
  - Integral contributor enabling industry to meet US robocalling June 30th deadline with complete portfolio including CallTrust and STIR/SHAKEN solutions

ROGERS

OPTUS

Singtel

Note:
1. Six months ended June 30, 2021, compared with the corresponding period in 2020. Please see the basis of presentation in the appendix.

Second Quarter 2021 Financial Highlights

Growing Revenue

$211M in 2Q21, up 2% YoY[1]
(excluding Kandy)

$404M in 1H21, up 12% YoY[2]
(excluding Kandy)

Balance Sheet and Cash Flow

$115M Ending Cash

$14M Cash Flow from Operations

Improving Profitability

$43M Adjusted EBITDA[3], up 46% YoY[4]

$0.17 Non-GAAP EPS[3], up 113% YoY[4]

Cloud and Edge[3]

Network Transformation Strength

16% YoY[4] growth in Softswitch / Media Gateways

Year to date signed **92% of 2021** Re-occurring Maintenance renewals

Robust Margins

31% Adj. EBITDA Margin[3], **up ~500 bps YoY[4]**

Non-GAAP OpEx[3] down **14% YoY[4]**

IP Optical Networks[3]

Revenue Trend

Up **10% YoY[4]**

N. America region **up 254% QoQ[5]**

Margin Improvement

48% Non-GAAP Gross Margin[3], **up ~900 bps YoY[4]**

Software up to 9% of total IP Optical product revenue

Notes:
1. Three months ended June 30, 2021, compared with the corresponding period in 2020 excluding Kandy results from the three months ending June 30, 2020.
2. Six months ended June 30, 2021, compared with the corresponding period in 2020 excluding Kandy results from the six months ending June 30, 2020; Ribbon closed the ECI acquisition on March 3, 2020.
3. Please see the basis of presentation and the non-GAAP reconciliation in the appendix.
4. Three months ended June 30, 2021, compared with the corresponding period in 2020.
5. Three months ended June 30, 2021, compared with the three months ended March 31, 2021.

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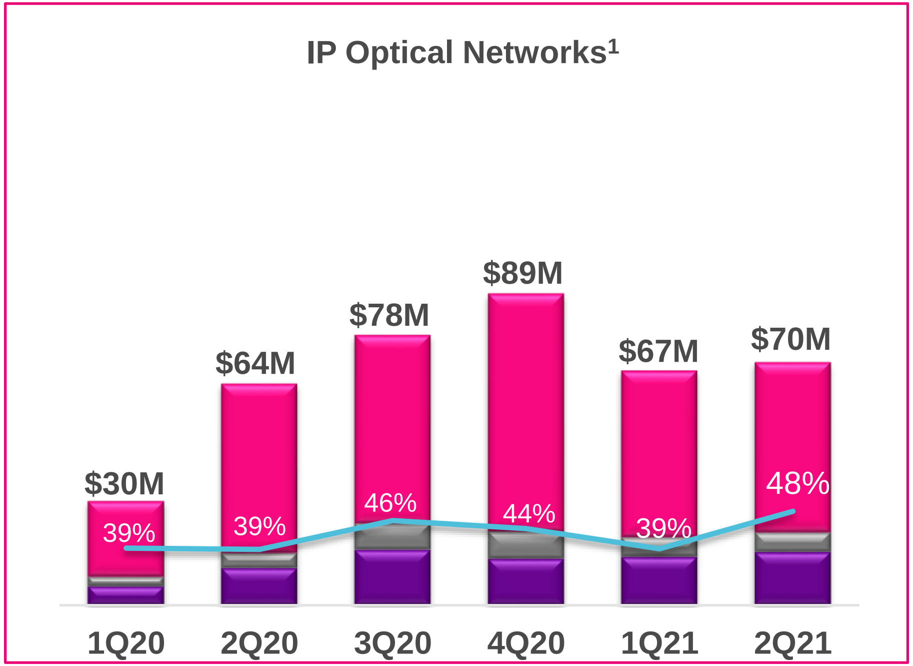
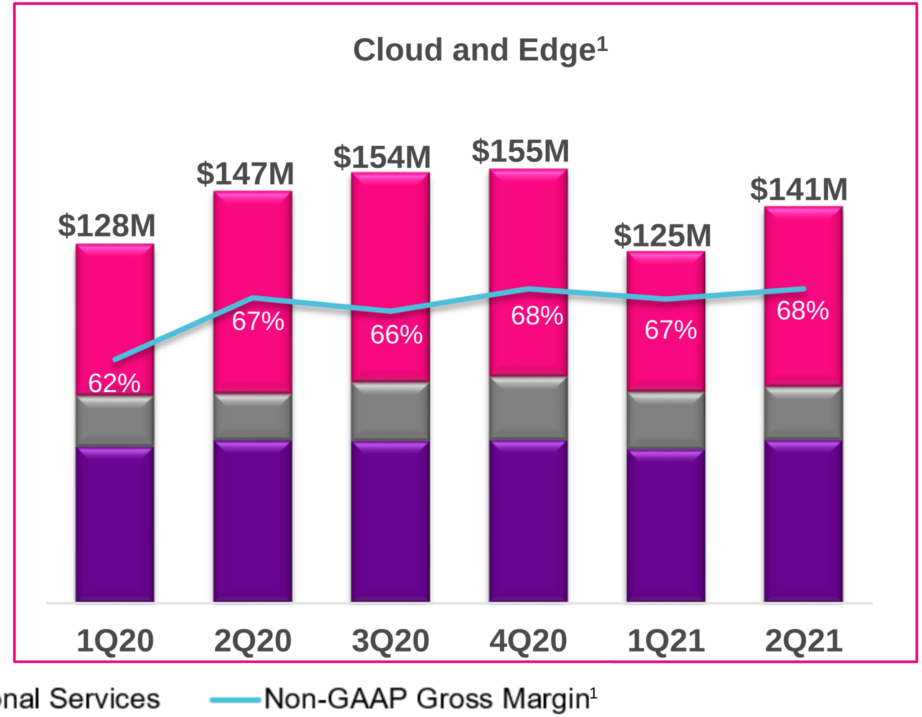
Second Quarter and First Half 2021 Non-GAAP Financial Summary

	2Q20	1Q21	2Q21	1H21
Revenue	$210M	$193M	$211M	$404M +10% yr/yr
Non-GAAP Gross Margin[1]	59%	57%	61%	59% +1 ppt yr/yr
Non-GAAP Opex[1]	$99M	$95M	$90M	$186M +1% yr/yr
Non-GAAP Operating Margin[1]	12%	8%	18%	13% +5 ppts yr/yr
Non-GAAP Adjusted EBITDA[1]	$30M	$20M	$43M	$63M +60% yr/yr
Non-GAAP Diluted EPS[1]	$0.08	$0.03	$0.17	$0.21 +140% yr/yr

Note:
1. Please see the basis of presentation and the non-GAAP reconciliation in the appendix.

Quarterly Performance: Revenue & Non-GAAP Gross Margins[1]





Note:
1. Please see the basis of presentation and the non-GAAP reconciliation in the appendix.

Second Quarter 2021 Key Metrics

Pipeline

2Q21 Book to Revenue[1] Ratio of 1.02

Over 90% of 2021 maintenance renewals completed by quarter-end 2Q21

Revenue Mix

35% Software Revenue[2]

34% Maintenance Revenue[3]

Top 10 Customers Revenue 47%[3]

Enterprise 22%[2]
Service Provider 78%[2]

Domestic 48%[3]
International 52%[3]

Balance Sheet

Cash Balance $115M

Debt[5] $386M

Annualized Weighted Interest Rate: 3.40%

Covenant Ratio Metrics[4]:
Leverage 2.17x vs 4x max.
(Leverage < 2.25x provides 50 bps reduction to interest rate margin)

FCCR 4.36x vs 1.25x min.

Cash Flow

$14M Cash From Operations

$13M Unlevered Free Cash Flow[6]

$5M Capex included ~$0.5M of real estate facility improvements

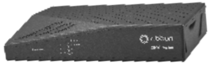
Notes:
1. Product and Professional Services (excluding maintenance) Bookings divided by Product and Professional Services Revenue (excluding maintenance) for the three months ended June 30, 2021.
2. As a percentage of total product revenue.
3. As a percentage of total revenue.
4. Calculated in accordance with the Amended and Restated Credit Agreement. 50 basis point Interest rate margin reduction is dependent on leverage being below 2.25 times at quarter end and is subject to change.
5. Principal balance outstanding.
6. Please see the non-GAAP reconciliation in the appendix.

Market Trends and Operating Environment

Expecting increased spend in second half to meet exponential traffic growth; significant IP Optical wins in 2Q21 provide momentum and validation of our strategy

India: surge in COVID-19 cases impacting deployments; recovery timing uncertain but necessary to meet massive consumer and commercial market demand

Increasingly challenging supply chain environment; constraints limit Ribbon’s ability to respond to near-term upside demand



Enterprise SBCs: opportunity to gain share in the higher-growth enterprise unified communications market

Service providers source of continuing demand; strong funnel of Network Transformation opportunities across all regions

Building Shareholder Value

Strategy to Address Growing Market Opportunity

- ✓ Favorable industry trends
- ✓ Focused on large market segments
- ✓ 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

Ribbon Condensed Statements of Operations

USD Millions except percentages and EPS	1Q20	2Q20	3Q20	4Q20	FY20	1Q21	2Q21
GAAP FINANCIAL MEASURES							
Product Revenue	76	121	129	142	468	98	113
Service Revenue	82	90	102	102	376	95	98
Total Revenue	**158**	**210**	**231**	**244**	**844**	**193**	**211**
Gross Profit	**91**	**123**	**135**	**144**	**493**	**111**	**128**
Gross Margin %	*57%*	*59%*	*58%*	*59%*	*58%*	*57%*	*61%*
Research and development	42	52	49	51	194	47	47
Selling, general and administrative	48	49	53	53	203	53	48
Amortization of acquired intangible assets	14	15	16	16	61	16	17
Acquisition-, disposal- and integration-related and Restructuring and related expenses	14	6	5	8	33	7	4
Total Operating Expenses	**119**	**122**	**123**	**127**	**491**	**123**	**115**
Income/(Loss) from Operations	**(29)**	**2**	**12**	**17**	**2**	**(13)**	**13**
Operating Margin %	*-18%*	*1%*	*5%*	*7%*	*0%*	*-7%*	*6%*
Net Income/(Loss)	**(33)**	**(8)**	**6**	**124**	**89**	**(45)**	**23**
Diluted EPS	**($0.27)**	**($0.06)**	**$0.04**	**$0.81**	**$0.61**	**($0.31)**	**$0.15**
Shares used to compute GAAP diluted earnings (loss) per share	121	144	152	153	145	146	154
Cash Flow from Operating Activities	**40**	**(3)**	**29**	**36**	**102**	**(6)**	**14**
NON-GAAP FINANCIAL MEASURES[1]							
Adjusted EBITDA	**10**	**30**	**43**	**49**	**131**	**20**	**43**
Unlevered Free Cash Flow	**35**	**(6)**	**29**	**33**	**90**	**(7)**	**13**

Note:
1. Please see the basis of presentation non-GAAP reconciliations in the appendix.

Ribbon Condensed Balance Sheets

USD Millions	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21
ASSETS						
Cash and cash equivalents[1]	110	94	111	136	109	115
Accounts receivable, net	206	205	208	238	209	220
Inventory	67	58	51	46	45	47
Property and equipment, net	47	48	48	49	49	49
Intangible assets, net and Goodwill	866	866	850	834	818	801
Investments	-	-	-	115	93	106
Other Assets	177	157	138	130	129	121
Total Assets	**1,472**	**1,428**	**1,406**	**1,547**	**1,453**	**1,459**
LIABILITIES AND EQUITY						
Liabilities	384	362	349	352	301	287
Deferred revenue	140	130	115	123	125	124
Debt[2]	395	392	387	385	384	379
Stockholders' Equity	554	545	555	687	643	669
Total Liabilities and Equity	**1,472**	**1,428**	**1,406**	**1,547**	**1,453**	**1,459**

Notes:
1. Includes cash, cash equivalents, and restricted cash.
2. Net of debt issuance costs and associated amortization.

Ribbon Condensed Statements of Cash Flows

USD Millions	1Q20	2Q20	3Q20	4Q20	FY20	1Q21	2Q21
Cash from Operations	40	(3)	29	36	102	(6)	14
Purchases of property and equipment	(6)	(9)	(4)	(8)	(27)	(5)	(5)
Business Acquisitions	(347)	-	-	-	(347)	-	-
Sale of Fixed Assets	44	-	-	-	44	-	3
Borrowings, net	336	(4)	(7)	(3)	322	(4)	(5)
Other	(1)	-	(1)	-	(2)	(12)	(1)
Net Change	**65**	**(16)**	**17**	**25**	**91**	**(27)**	**6**
Cash[1] Beginning of Period	**45**	**110**	**94**	**111**	**45**	**136**	**109**
Cash[1] End of Period	**110**	**94**	**111**	**136**	**136**	**109**	**115**

Note:
1. Includes cash, cash equivalents, and restricted cash.

Ribbon Key Revenue Statistics

USD Millions except for percentages	1Q20	2Q20	3Q20	4Q20	FY20	1Q21	2Q21
Revenue							
Product	76	121	129	142	468	98	113
Service	82	90	102	102	376	95	98
Total Revenue	**158**	**210**	**231**	**244**	**844**	**193**	**211**
% of Total Revenue:							
Revenue Mix							
Product	48%	57%	56%	58%	55%	51%	54%
Services	52%	43%	44%	42%	45%	49%	46%
Revenue by Geography							
Domestic	50%	48%	45%	40%	45%	41%	48%
International	50%	52%	55%	60%	55%	59%	52%
Revenue by Channel							
Direct	62%	73%	72%	74%	71%	79%	76%
Indirect	38%	27%	28%	26%	29%	21%	24%
Product Revenue By Market							
Enterprise	36%	30%	29%	27%	30%	23%	22%
Service Providers	64%	70%	71%	73%	70%	77%	78%
10% Total Revenue Customers	Verizon AT&T	Verizon	Verizon	Verizon	Verizon	Verizon	Verizon

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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 excluding the recently acquired ECI Telecom business, which was completed on March 3, 2020. The term “overall” as used herein refers to Ribbon’s consolidated results (including the results of ECI post-acquisition through June 30, 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.

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.

Discussion of Non-GAAP Financial Measures (Continued)

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.

Gains on Sales of Businesses

On May 12, 2021, we sold our QualiTech business, which we had acquired as part of the ECI Acquisition, to Hermon Laboratories, Ltd. As consideration, we received $2.9 million of cash and recorded a gain on the sale of $2.8 million. 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 these gains because we believe that such gains are not part of our core business or ongoing operations.

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.

Discussion of Non-GAAP Financial Measures (Continued)

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.

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	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 (Loss) income 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
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
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%	15.2%	-7.4%	6.9%	8.3%	-18.0%	0.2%
Depreciation	2.3%	1.6%	2.2%	2.0%	2.8%	2.3%	1.9%	1.9%	1.9%	2.0%	1.4%	1.8%	2.1%	1.9%	2.0%
Amortization of acquired intangible assets	9.6%	7.1%	9.1%	7.7%	5.3%	6.9%	8.2%	4.9%	7.1%	7.7%	4.3%	6.4%	8.2%	5.0%	7.3%
Stock-based compensation	2.3%	0.0%	1.9%	2.1%	0.1%	1.5%	2.2%	0.7%	1.7%	2.0%	0.7%	1.5%	2.2%	0.5%	1.6%
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%	0.2%
Litigation costs	2.4%	0.0%	1.9%	-0.6%	0.0%	-0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.2%
Acquisition-, disposal- and integration-related expense	0.0%	41.3%	7.8%	0.0%	1.3%	0.4%	0.6%	0.7%	0.6%	0.6%	1.7%	1.0%	0.3%	5.9%	2.0%
Restructuring and related expense	1.6%	0.0%	1.3%	2.9%	1.8%	2.5%	0.1%	4.0%	1.4%	2.6%	1.7%	2.3%	1.8%	2.2%	2.0%
Non-GAAP Adjusted EBITDA Margin	7.6%	-0.7%	6.0%	25.5%	-12.5%	14.0%	27.3%	1.9%	18.8%	30.1%	2.4%	19.9%	23.3%	-1.7%	15.5%

* Less than 0.1% impact on Gross margin

GAAP to Non-GAAP Reconciliation (Continued)

$000's	1Q21			2Q21		
	Cloud and Edge	IP Optical Networks	Consolidated	Cloud and Edge	IP Optical Networks	Consolidated
Revenue	$ 125,422	$ 67,350	$ 192,772	$ 141,421	$ 69,789	$ 211,210
GAAP Gross profit	$ 84,162	$ 26,385	$ 110,547	$ 95,463	$ 32,964	$ 128,427
GAAP Gross margin - total (Total gross profit/Revenue)	67.1%	39.2%	57.3%	67.5%	47.2%	60.8%
Stock-based compensation	0.1%	0.1%	0.2%	0.3%	0.3%	0.3%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-GAAP Gross margin - total	67.2%	39.3%	57.5%	67.8%	47.5%	61.1%
Adjusted EBITDA						
GAAP Income (loss) from operations	$ 4,692	$ (17,296)	$ (12,604)	$ 24,932	$ (11,980)	$ 12,952
Depreciation	3,137	1,089	4,226	3,142	1,107	4,249
Amortization of acquired intangible assets	11,306	4,517	15,823	11,299	5,882	17,181
Stock-based compensation	3,334	1,726	5,060	3,039	1,751	4,790
Acquisition-related inventory adjustment	-	-	-	-	-	-
Litigation costs	-	-	-	-	-	-
Acquisition-, disposal- and integration-related expense	241	956	1,197	29	1,023	1,052
Restructuring and related expense	5,620	330	5,950	1,095	1,735	2,830
Non-GAAP Adjusted EBITDA	$ 28,330	$ (8,678)	$ 19,652	$ 43,536	$ (482)	$ 43,054
Adjusted EBITDA Margin (Adjusted EBITDA/Revenue)						
GAAP Income (loss) from operations	2.9%	-24.1%	-6.5%	18.4%	-18.7%	6.1%
Depreciation	2.5%	1.6%	2.2%	2.2%	1.6%	2.0%
Amortization of acquired intangible assets	9.0%	6.7%	8.2%	8.0%	8.4%	8.2%
Stock-based compensation	3.5%	1.0%	2.6%	1.4%	4.0%	2.3%
Acquisition-related inventory adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Litigation costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Acquisition-, disposal- and integration-related expense	0.2%	1.4%	0.6%	*	1.5%	0.5%
Restructuring and related expense	4.5%	0.5%	3.1%	0.8%	2.5%	1.3%
Non-GAAP Adjusted EBITDA Margin	22.6%	-12.9%	10.2%	30.8%	-0.7%	20.4%

* Less than 0.1% impact on non-GAAP Adjusted EBITDA margin

GAAP to Non-GAAP Reconciliation (Continued)

$000s	1Q20	2Q20	3Q20	4Q20	FY20	1Q21	2Q21
GAAP Operating expenses	$ 119,264	$ 121,675	$ 123,037	$ 127,462	$ 491,438	$ 123,151	$ 115,475
Stock-based compensation	(2,819)	(3,024)	(3,708)	(3,473)	(13,024)	(4,798)	(4,228)
Amortization of acquired intangible assets	(14,334)	(14,669)	(16,349)	(15,558)	(60,910)	(15,823)	(17,181)
Litigation costs	(3,038)	937	-	-	(2,101)	-	-
Acquisition-, disposal- and integration-related expense	(12,384)	(857)	(1,366)	(2,557)	(17,164)	(1,197)	(1,052)
Restructuring and related expense	(2,075)	(5,361)	(3,290)	(5,509)	(16,235)	(5,950)	(2,830)
Non-GAAP Operating expenses	$ 84,614	$ 98,701	$ 98,324	$ 100,365	$ 382,004	$ 95,383	$ 90,184

Income (loss) from operations as a percentage of revenue ("Operating margin")							
GAAP Operating margin	-18.2%	0.8%	5.2%	6.9%	0.2%	-6.5%	6.1%
Acquisition-related inventory adjustment	0.0%	0.0%	0.9%	0.0%	0.2%	0.0%	0.0%
Stock-based compensation	1.9%	1.5%	1.7%	1.5%	1.6%	2.6%	2.3%
Amortization of acquired intangible assets	9.1%	7.0%	7.0%	6.4%	7.3%	8.2%	8.2%
Litigation costs	1.9%	-0.4%	0.0%	0.0%	0.2%	0.0%	0.0%
Acquisition-, disposal- and integration-related expense	7.8%	0.4%	0.6%	1.0%	2.0%	0.6%	0.5%
Restructuring and related expense	1.3%	2.5%	1.4%	2.3%	2.0%	3.1%	1.3%
Non-GAAP Operating margin	3.8%	11.8%	16.8%	18.1%	13.5%	8.0%	18.4%

GAAP to Non-GAAP Reconciliation (Continued)

	1Q20	2Q20	3Q20	4Q20	FY20	1Q21	2Q21
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)	$ 0.15
Acquisition-related inventory adjustment	-	-	0.01	-	0.01	-	-
Stock-based compensation	0.02	0.02	0.03	0.02	0.11	0.03	0.03
Amortization of acquired intangible assets	0.12	0.10	0.11	0.10	0.42	0.11	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	0.01
Restructuring and related expense	0.02	0.04	0.02	0.04	0.11	0.05	0.02
Gain on sale of business	-	-	-	(0.54)	(0.58)	-	(0.02)
Interest income on debentures	-	-	-	-	-	(0.01)	(0.01)
(Increase) decrease in fair value of investments	-	-	-	(0.20)	(0.21)	0.16	(0.08)
Tax effect of non-GAAP adjustments	*	(0.02)	(0.08)	(0.07)	(0.17)	(0.01)	(0.04)
Non-GAAP Diluted earnings per share	$ 0.01	$ 0.08	$ 0.14	$ 0.18	$ 0.43	$ 0.03	$ 0.17
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	154,160
Shares used to compute **non-GAAP** diluted earnings per share	121,603	150,512	151,680	153,441	144,650	155,032	154,160
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)	$ 14,242
Interest paid	688	5,587	4,570	4,701	15,546	4,317	3,692
Purchases of property and equipment	(6,017)	(8,874)	(3,794)	(8,036)	(26,721)	(5,357)	(5,213)
Non-GAAP Unlevered free cash flow	$ 34,603	$ (6,507)	$ 29,312	$ 32,981	$ 90,389	$ (7,252)	$ 12,721

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

Thank you