



# THE #1 WIRELESS HAULING SPECIALIST POSITIONED TO LEAD IN A GROWING MARKET

Investor Presentation // August 2020



# DISCLAIMER

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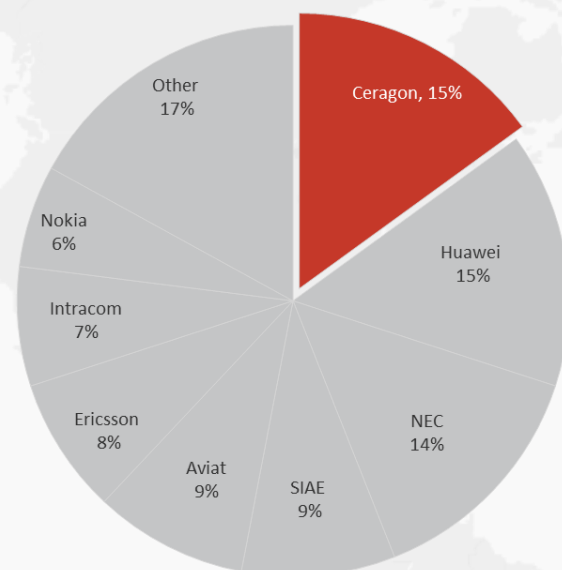
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# CERAGON AT A GLANCE

## INNOVATIVE MARKET LEADER 4G & 5G NETWORK ENABLER

Customers who choose based on value of technology select Ceragon



2019 BEST-OF-BREED MARKET SHARE

Source: Ceragon estimates based on SkyLight Research. March 2020  
\*Others include vendors with less than 2% share

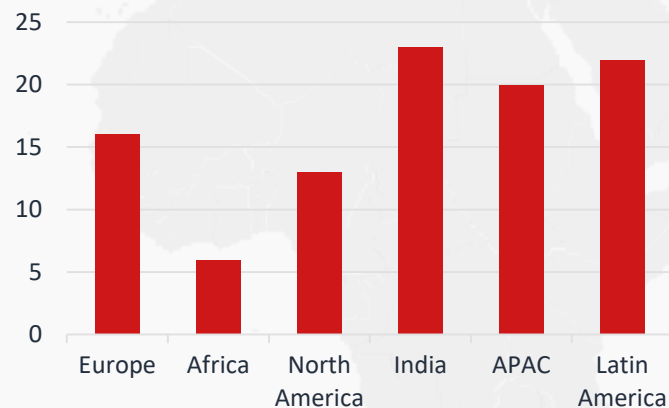
## GLOBAL COMPANY

Significant activity in each region



% of revenue  
Last 12 months

### BALANCED REVENUE MIX



## COMPANY SNAPSHOT

**+2,000** TOTAL CUSTOMERS

**+1M** SYSTEMS DEPLOYED

**+140** COUNTRIES WITH  
SYSTEMS DEPLOYED

**1,000+** EMPLOYEES  
GLOBALLY

**\$0.99-\$3.25** 52 WEEK LOW/HIGH<sup>(A)</sup>

(A) Source: Nasdaq as of 7/31/2020



# WE DO WIRELESS HAULING

## CRITICAL TECHNOLOGY FOR 4G AND 5G NETWORKS



WIRELESS HAULING – AN ALTERNATIVE TO FIBER DEPLOYMENT  
AN ESSENTIAL PART OF ANY NETWORK EVOLUTION FOR FASTER AND MORE COST-EFFECTIVE DEPLOYMENTS

Connects approximately 50% of all cell sites globally (current & forecast)



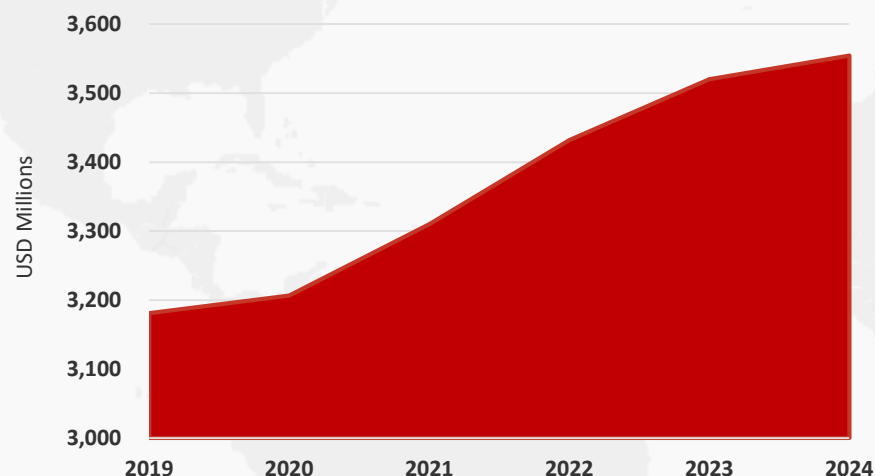
# INVESTMENT HIGHLIGHTS

## POSITIONED TO LEAD IN THE GROWING 5G MARKET

### 5G A GROWING MARKET

Market growth driven by 5G opportunities for service providers

Microwave & millimeter-wave global revenues forecast



Source: Dell'Oro – 2020

Proprietary and Confidential

### CERAGON POSITIONED TO LEAD AND TAKE MARKET SHARE

- Leading wireless hauling specialist
- Unique technology
- Anytime-anywhere extensive services
- Global presence
- Financial and business resilience



# COVID-19 IMPACTS THE 5G MARKET: SHORT TERM RISK, LONG TERM GAIN

## BROADBAND: THE NEW ESSENTIAL UTILITY

- Telecom and broadband services are the new lifeline
- There is a surge in network capacity demand
- Some service providers are taking action to ramp up their network infrastructure
- 5G use-cases are becoming a reality – even sooner than anticipated
- Already driving increased demand for Ceragon's leading wireless hauling solutions and services
- Possible short-term slowdown due to global recession, lockdowns affecting supply chain, and operators temporarily reducing 5G network investments





# THE GROWING 5G MARKET

## 5G EXPECTED TO CREATE OPPORTUNITIES FOR SERVICE PROVIDERS

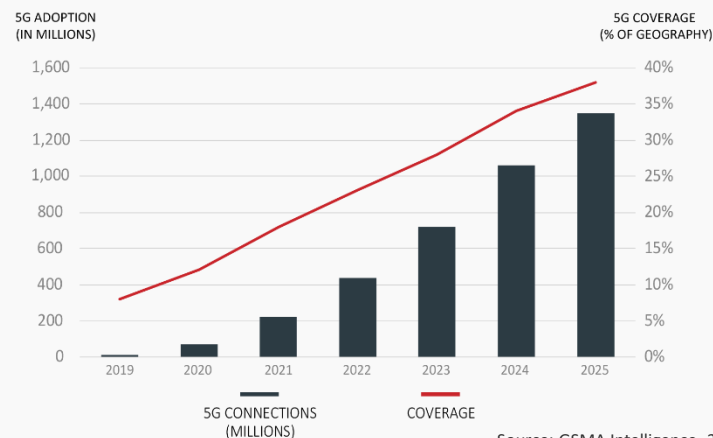
New revenue streams via new service offerings & additional target markets



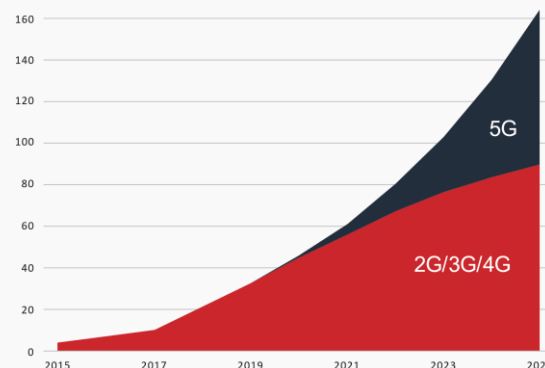
5G to drive growth  
in number of connections

Combined with  
significant growth in traffic

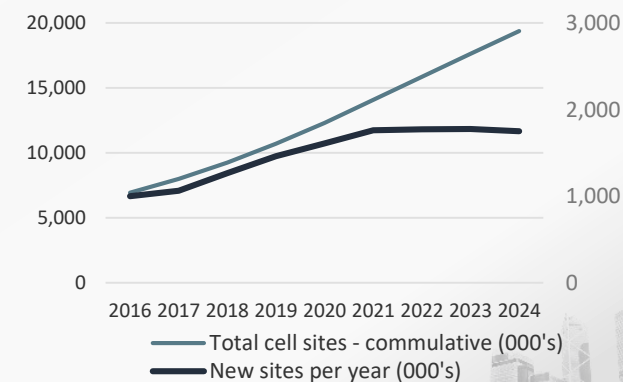
Accelerating deployment  
of new cell sites



GLOBAL MOBILE DATA TRAFFIC (EB\* PER MONTH)



GLOBAL CELL SITES (000'S)





# 5G OPERATOR OPPORTUNITIES DRIVE MARKET GROWTH...

...WHILE CREATING NETWORK CHALLENGES OF A DIFFERENT SCALE THAN 4G

5G EXPECTED TO CREATE OPPORTUNITIES FOR SERVICE PROVIDERS

New revenue streams via new service offerings & additional target markets



## NETWORK TRENDS

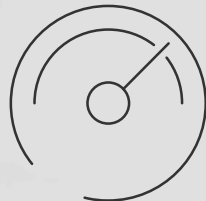


New Services

New Network Architectures

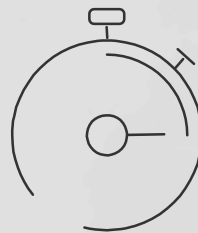
New Cellular Spectrum

## NETWORK CHALLENGES



x100

PROVIDE MORE CAPACITY



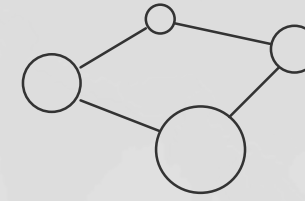
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REDUCE LATENCY



x4

NETWORK SLICING FOR SERVICE ORCHESTRATION



x5

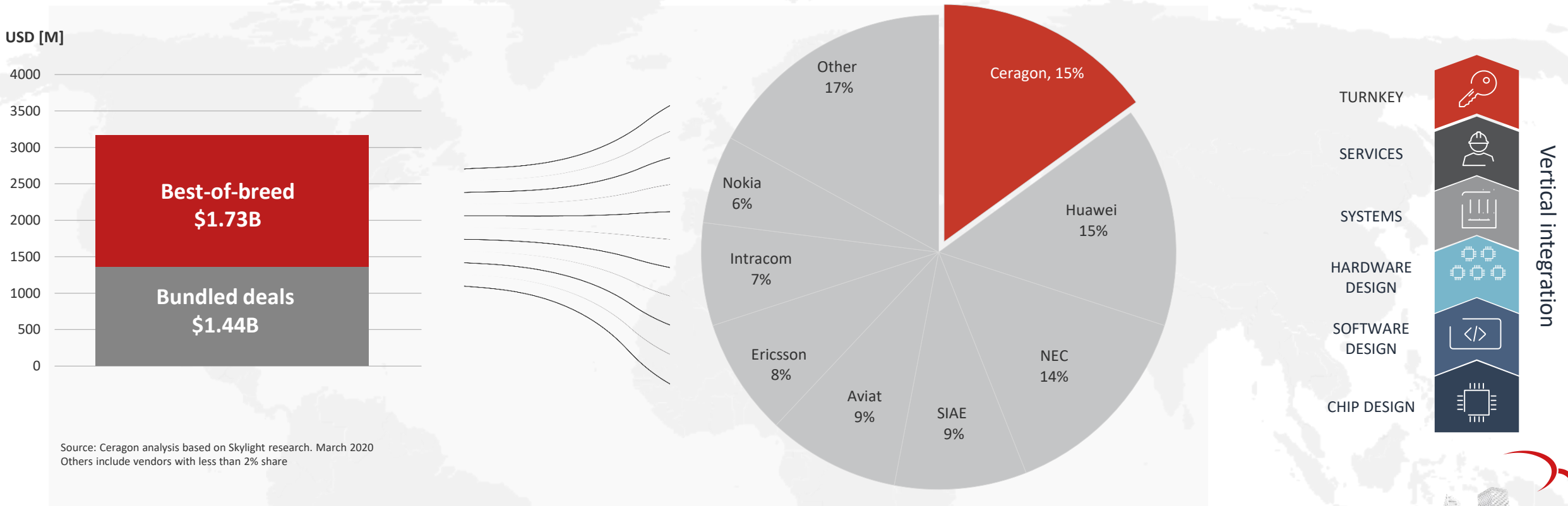
DEPLOY MORE SITES



# GROWING 5G NETWORK COMPLEXITY DRIVES OPERATORS TO ADOPT BEST-OF-BREED\* VENDOR STRATEGIES

## 'BEST-OF-BREED' LEADERSHIP THROUGH UNIQUE VERTICAL INTEGRATION

BEST-OF-BREED MARKET SEGMENT REVENUE - 2019



\* Service providers seeking the best wireless hauling solution as primary factor in their vendor selection. Open-RAN as a major driver



# BEST-OF-BREED LEADERSHIP DRIVERS

BUILT ON VERTICAL INTEGRATION

## CHIPSET

UNIQUE MULTICORE TECHNOLOGY



### 4G DUAL CORE



### 5G OCTA CORE



## ALL - OUTDOOR NETWORK

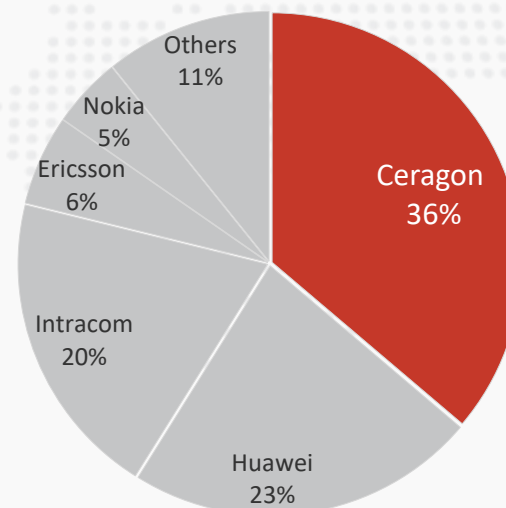
BEST-FIT FOR NETWORK EXPANSION

FAST DEPLOYMENT | SIMPLE SITE ACQUISITION

ENABLER FOR NETWORK DENSIFICATION

LOWEST TCO | FAST TIME TO REVENUE

2019 ALL-OUTDOOR UNIT MARKET SHARE



Source: SkyLight Research. March 2020

## DISAGGREGATED WIRELESS HAULING

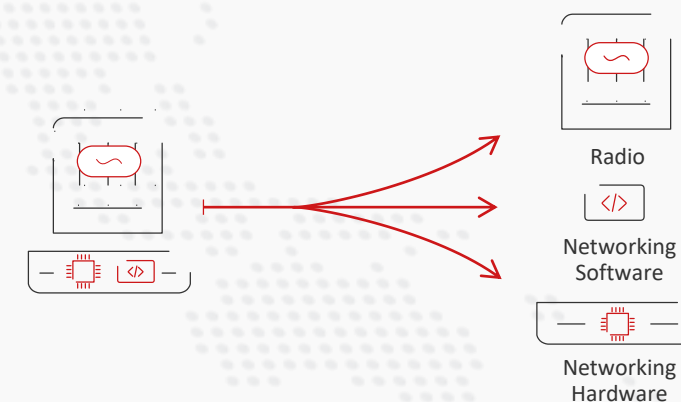
PIONEERING OPEN NETWORKS  
IN THE HAULING DOMAIN

LOW TOTAL NETWORK INVESTMENT

FAST NETWORK ROLLOUT

SIMPLER NETWORK EVOLUTION

NO VENDOR LOCK-IN

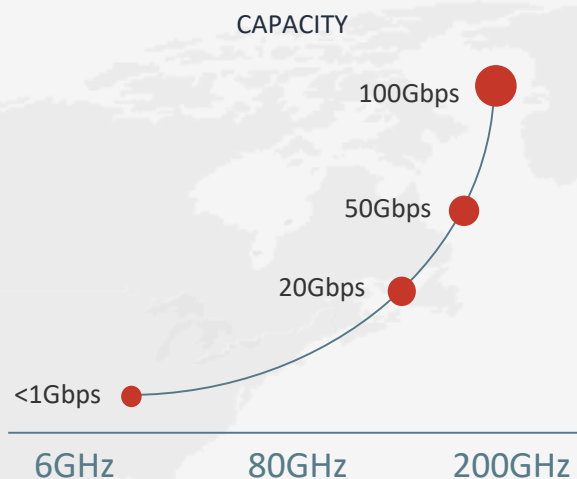




# UNIQUE TECHNOLOGY

## BUILT ON VERTICAL INTEGRATION

### HIGHEST INDUSTRY RADIO CAPACITY AT ANY SPECTRUM



- Any network hauling scenario
- Any network capacity
- Low latency, compact nodes

**Eliminate dependency on fiber**  
**Save time and money**

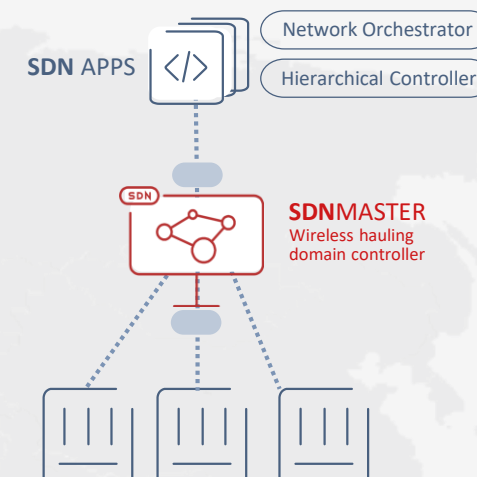
### DISAGGREGATED WIRELESS HAULING



- Low total network investment
- Fast network rollout

**Open network approach adopted**  
**by major Tier 1 operators**

### SOFTWARE DEFINED NETWORKING



- Faster time to market for new 5G services
- Simple network slicing

**Network agility – Today!**

Vertical integration



# COMPLETE NETWORK LIFECYCLE SUPPORT

BUILT ON VERTICAL INTEGRATION



## PLAN

- Network planning & design
- Network topology optimization



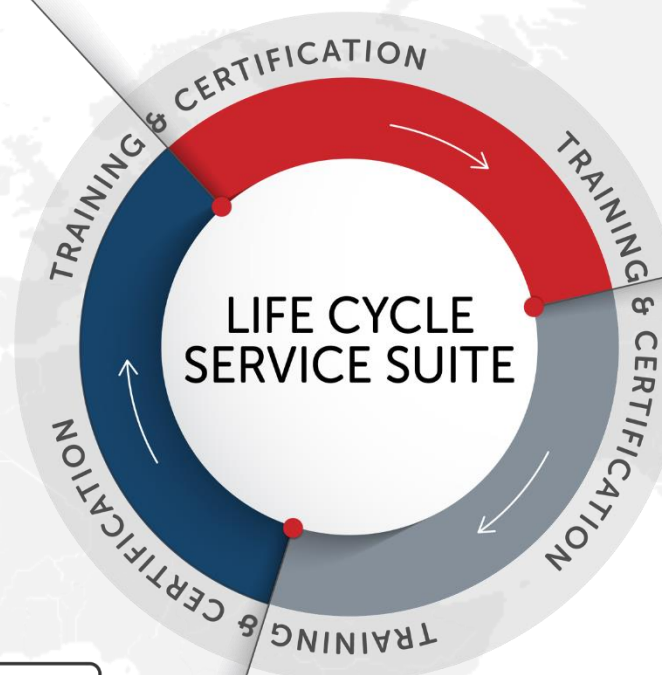
## DEPLOY

- Network rollout planning
- Network rollout execution and support



## OPERATE

- Customer support
- Preventive maintenance
- NOC operation
- Predictive Analysis
- Infrastructure management & opt



Vertical integration





# SERVING CUSTOMERS WORLDWIDE

## PRESENT EVERYWHERE TO CAPITALIZE ON 5G

5G

Tier-1 Operator



Digicel



Claro



proximus

cellnex



euro<sup>na</sup>



smartfren.



OPTUS



telecom mauritius

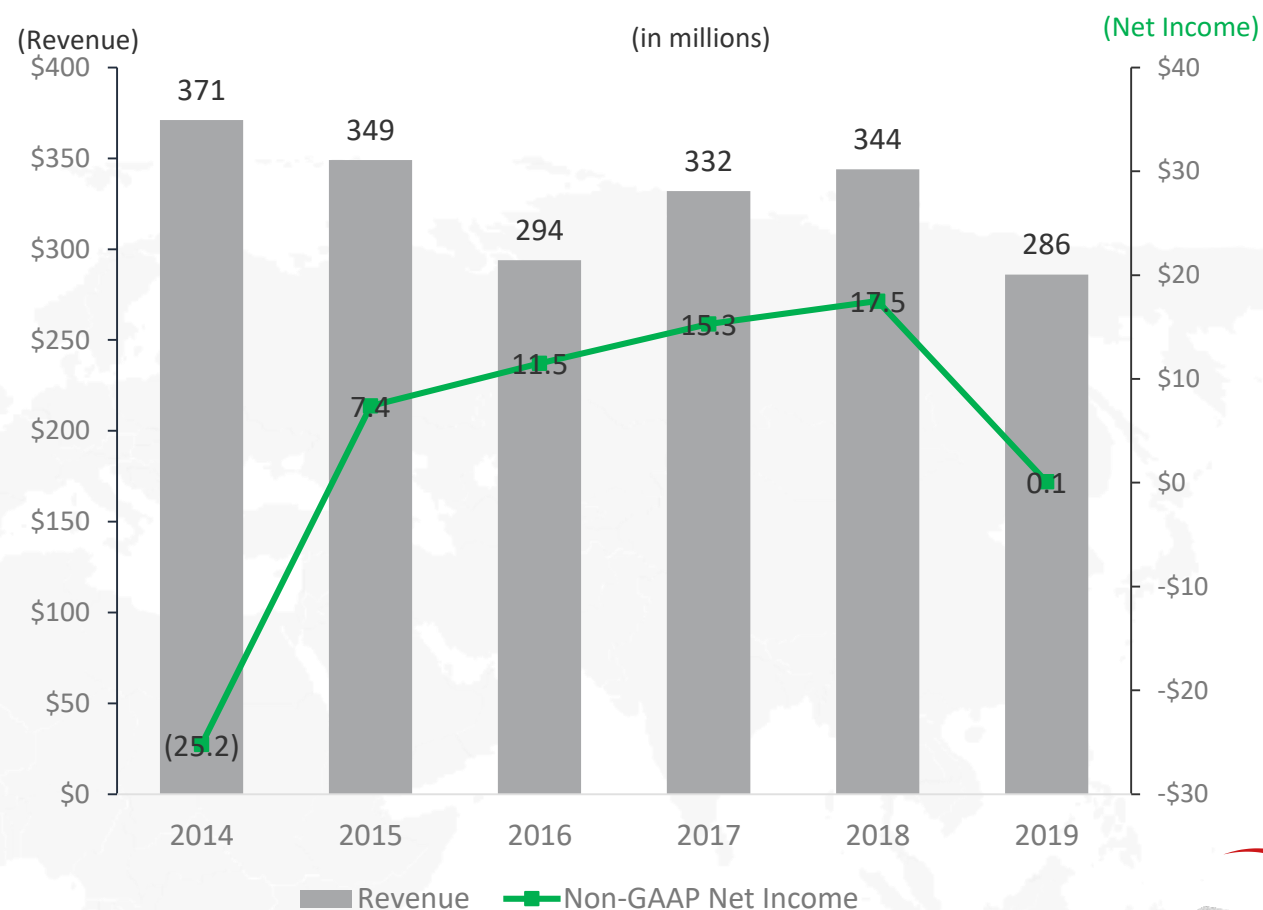


FINANCIALS



# TRACK RECORD OF EXECUTION

- Consistently profitable from 2015-2018
- 2019 results negatively impacted by lower revenue from India and \$3.3 million in one-time items
- Focus on maximizing gross profit dollars
- Strong H1 bookings (book-to-bill above 1), generally healthy backlog
- H1 2020 revenues negatively impacted by COVID-19; current indications point to a return to a more normal run rate expected in H2 though unknown factors related to the COVID-19 environment may impact the timing of revenues and ongoing projects
- Supply chain disruptions and overall uncertainty temper long-term optimism



Note: Financial metrics are presented on a non-GAAP basis.



## STRONG BALANCE SHEET

- **Positioned to weather challenges**
- Positive cash flow of \$4 million from operations and investing activities
- Short-term bank debt: >\$20.3 million unused borrowing capacity
- On July 1, extended credit line from a consortium of banks for another year; raised from \$40 million to \$50 million
- Credit facility to be used as a business tool to accommodate short-term increase in working capital needs

(U.S. dollars in millions) (Unaudited)	
	a/o June 30, 2020
Cash & cash equivalents	35.2
Short-term loans	19.7
Inventory	53.6
AR	97.5
DSOs	136



# CHARACTERISTICS OF OPERATING MODEL

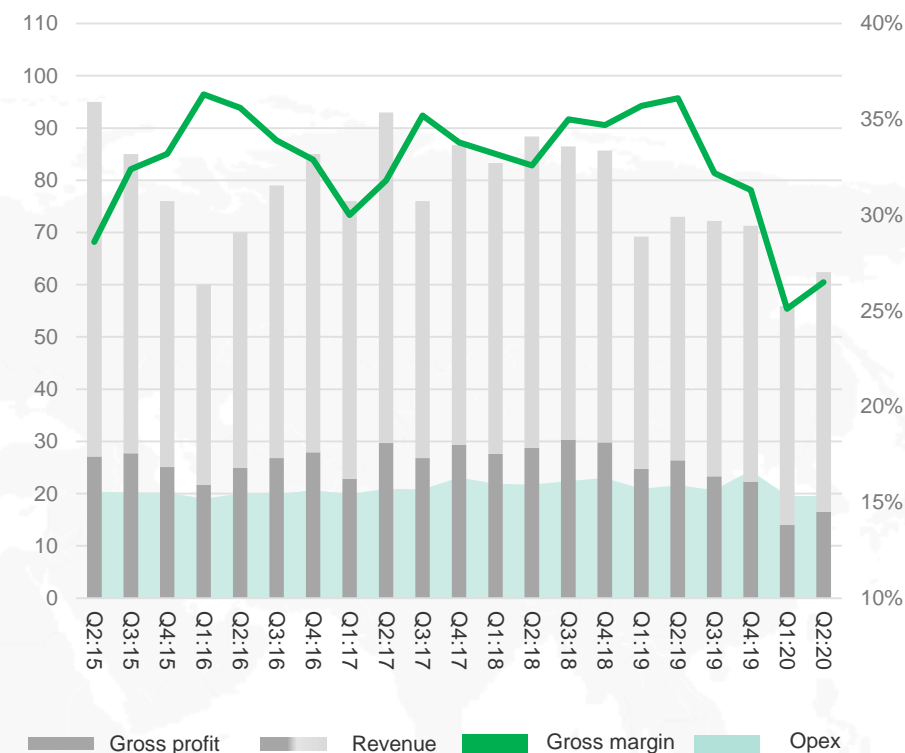
## Good management of controllable elements

- Deals accepted based on contribution to gross profit dollars
- Tendency toward trade-off between revenue and gross margin
- Stringent control of operating expenses

## Quarter-to-quarter fluctuations due to nature of business

- Geographic mix of revenues
- Shifts in local regulations and market environment
- Timing of revenue recognition for elements of each project depends on equipment delivery schedules
- Also: currency fluctuations, interest rates, seasonality, order lumpiness, changes in raw material and component costs
- Q2 low gross-margin driven by relatively low revenue as well as less favorable regional and sub-regional mix, increasing costs of sourcing and increased supply chain expenses of the current environment

### Quarterly Operating Model



Note: Financial metrics are presented on a non-GAAP basis.



# SUMMARY



# POSITIONED TO CAPITALIZE ON ACCELERATED, MULTI-YEAR EVOLUTION TO 5G

- + Leading player in a market which is expected to accelerate growth
- + Differentiated, technologically-advanced platforms that give operators a time-to-market, flexibility and capacity advantage
- + Competitive strengths position us to obtain major share of highest-value opportunities and to gain overall market share
- + Financial stability enables continuous innovation and design-to-cost investment
- + 2020 started with strong bookings in H1Q1 from multiple 2019 design wins and new COVID-19 driven interest





CHALLENGE US  
TO TAKE YOU FURTHER

CHALLENGE US  
TO TAKE YOU FURTHER

THE #1 WIRELESS HAULING SPECIALIST