



POWERING CLOUD SCALE NETWORKS

INSIGHT  
INFINERA | 2016

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**Welcome**

**Michael Capuano**, VP Marketing

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**8:30 am** Transforming to Layer T

**Tom Fallon**, CEO

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**8:45 am** Delivering Layer T at Cloud Scale

**Dave Welch**, President and Co-Founder

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**9:20 am** Trends in Service Provider Networking

**Mattias Fridström**, Chief Evangelist, Telia Carrier  
**Chris Aspell**, Director of Strategy, Liberty Global

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**10:00 am** Break

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**10:15 am** Financial Model Update

**Brad Feller**, CFO

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**10:40 am** Fireside Chat

**Infinera Executive Team**

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**11:10 am** Future of Intelligent Transport Networks

**Dave Welch, Tom Fallon**

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**11:30 am** Webcast Ends

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# Safe Harbor

This presentation contains "forward-looking" statements that involve risks, uncertainties and assumptions. If the risks or uncertainties ever materialize or the assumptions prove incorrect, our results may differ materially from those expressed or implied by such forward-looking statements. All statements other than statements of historical fact could be deemed forward-looking, including, but not limited to, any statements about future market performance and similar statements; any statements about historical results that may suggest trends for our business; any statements of the plans, strategies, and objectives of management for future operations; any statements of expectation or belief regarding future events, potential markets or market size, technology and product developments, or enforceability of our intellectual property rights; and any statements of assumptions underlying any of the items mentioned.

These statements are based on estimates and information available to us at the time of this presentation and are not guarantees of future performance. These risks and uncertainties include, but are not limited to, delays in the release of new products or updates to existing products; the risks of competitive responses and shifts in the market; fluctuations in customer demand, changes in industry trends, and changes in the macro economic market; the effect that changes in product pricing or mix, and/or increases in component costs could have on our gross margin; our ability to respond to rapid technological changes; aggressive business tactics by our competitors; customer consolidation; our reliance on single-source suppliers; our ability to protect our intellectual property; claims by others that we infringe their intellectual property; war, terrorism, public health issues, natural disasters and other circumstances that could disrupt the supply, delivery or demand of Infinera's products; and other risks and uncertainties detailed in our SEC filings from time to time. More information on potential factors that may impact our business are set forth in Infinera's Quarterly Report on Form 10-Q for the fiscal quarter ended on September 24, 2016 as filed with the SEC on November 1, 2016, as well as subsequent reports filed with or furnished to the SEC from time to time. Our SEC filings are available on our website at [www.infinera.com](http://www.infinera.com) and the SEC's website at [www.sec.gov](http://www.sec.gov). Forward-looking statements are subject to change, and we may not inform you when changes occur. We assume no obligation to, and do not currently intend to, update any such forward-looking statements.



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# INSIGHT INFINERA | 2016

## Transforming to Layer T

Tom Fallon, CEO

November 17<sup>th</sup>, 2016



# The “Next” Communications Infrastructure

**IoT**  
Self driving cars  
25 gigabytes of  
data every hour



**Enterprise Apps**  
Doubling every  
2.5 years



**Social Video Sharing**  
up to 4Mbps  
per user



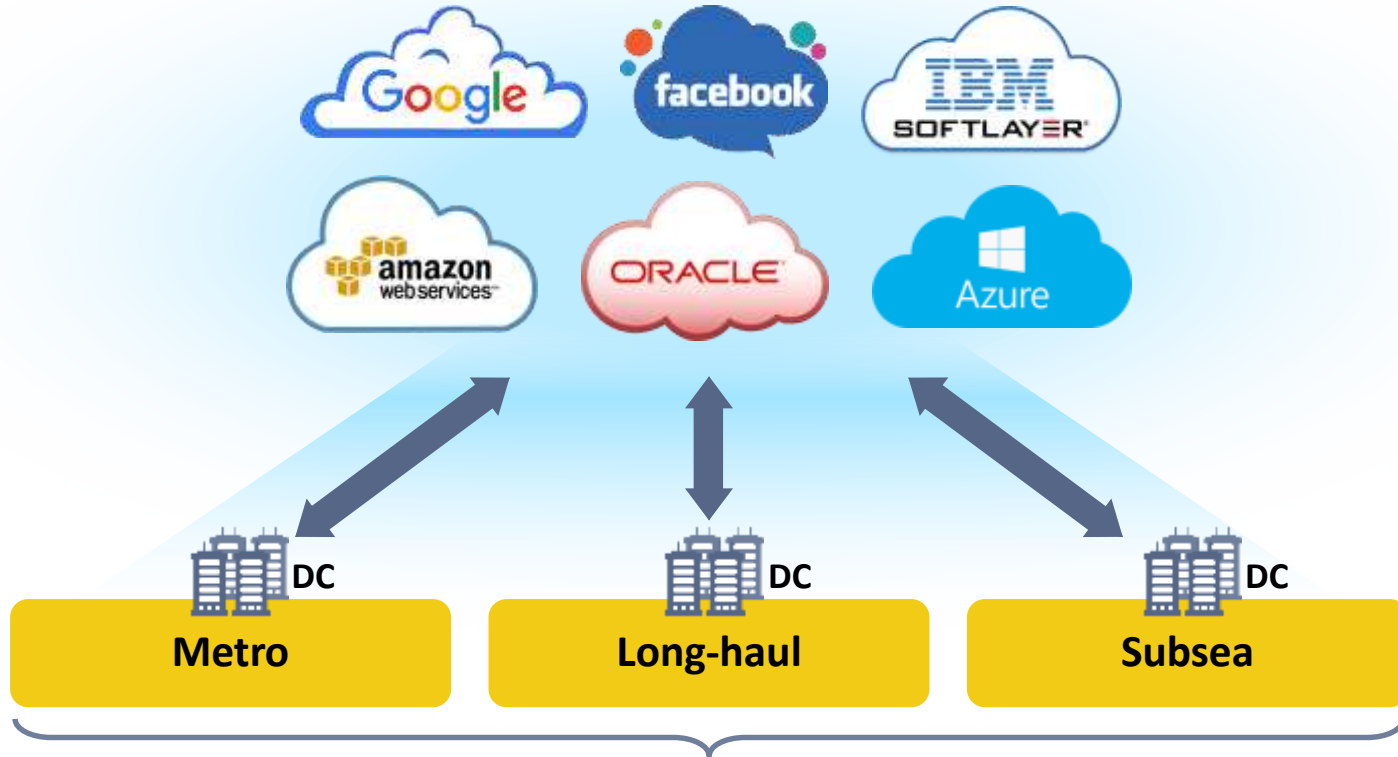
**Virtual Reality**  
10x requirement  
of high-quality video



# Rapid Migration to Cloud Architectures

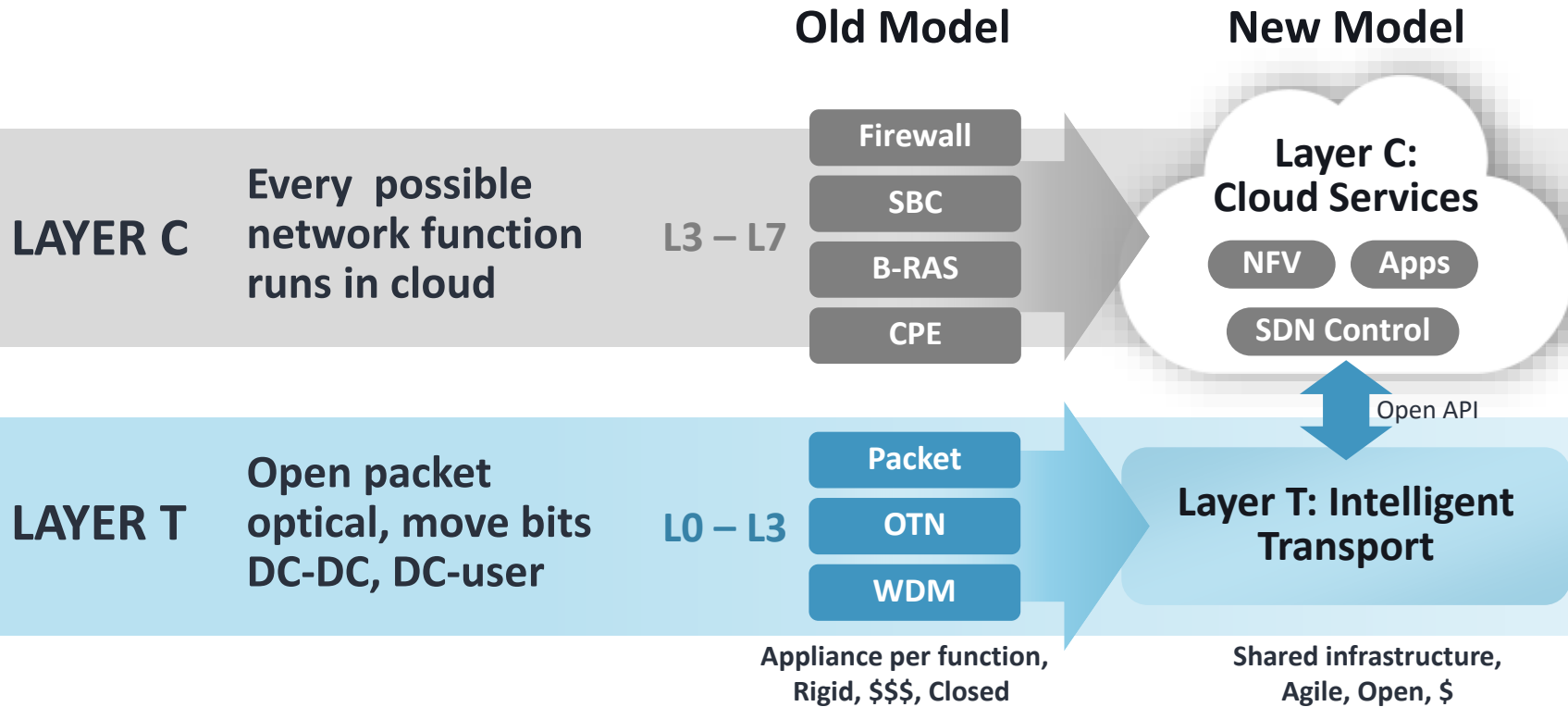


# Cloud Connectivity Impacting All Networks





# Network Transformation: “Virtualize What You Can”



# Fundamental Innovation Required For Layer T

## Evolving Networks Require Layer T Intelligent Transport

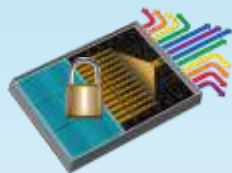


**An Infinite Pool of  
Intelligent Bandwidth**

- ▶ Massive optical capacity
- ▶ Flexible, integrated and disaggregated
- ▶ Open and programmable

# Layer “T” Innovation Toolbox

**Massive Scale  
Vertical IP Ownership**



**Infinite Capacity  
Engine**

**Infinite Pool  
of Bandwidth**

**Flexible**



**Integrated  
Switching**



**Disaggregated  
DWDM**



**Flex Grid Optical  
Switching**

**Building Blocks for  
Optimized Networks**

**Open & Programmable**

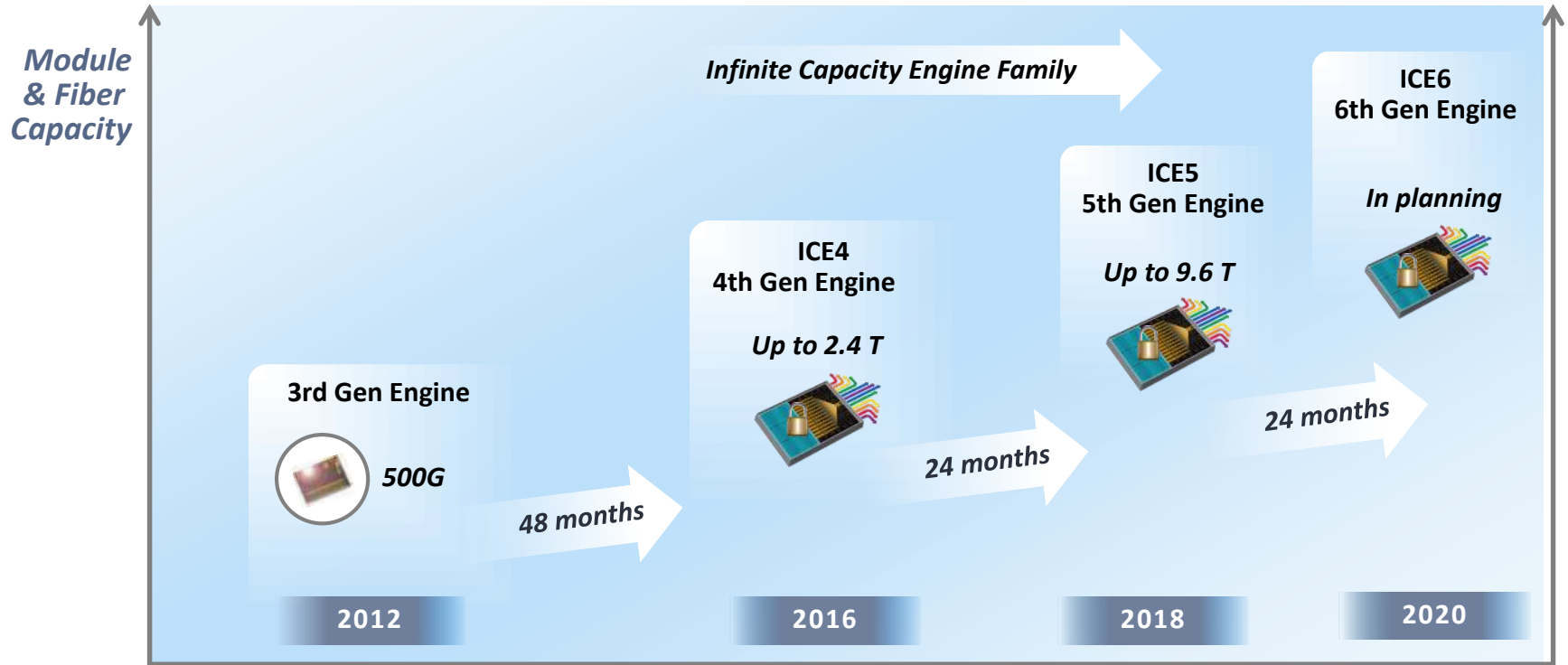


**Xceed Software Suite**



**Leading the Move  
to Open Systems**

# “Cloud Cadence” of Technology Innovation



# Infinera – Leadership Strategies

## Building Blocks

Deliver Differentiated Next Gen Platforms in 2017

Increase Cadence of Optical Engine

Lead in Open: Open APIs, Open Line System

## Markets

Disaggregated & Integrated Solutions Optimized per Customer

Balanced Portfolio – LH/SS/Metro/DCI (ETE)

Grow Faster than the Overall Optical Market

Help Customers Transition to Layer T and Win in Their Markets

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## Delivering Layer T at Cloud Scale

Dave Welch, Co-Founder, President

November 17<sup>th</sup>, 2016



# Generational Shift in Network Architecture

Pre 1990s

1990-2010

Today

PSTN

IP NGN

Layer T & Layer C

mostly software

Management

NMS



Control

Layer C

Layer 3 – 7

NFV

Cloud Services



Forwarding

Layer 0 – 3

Layer T

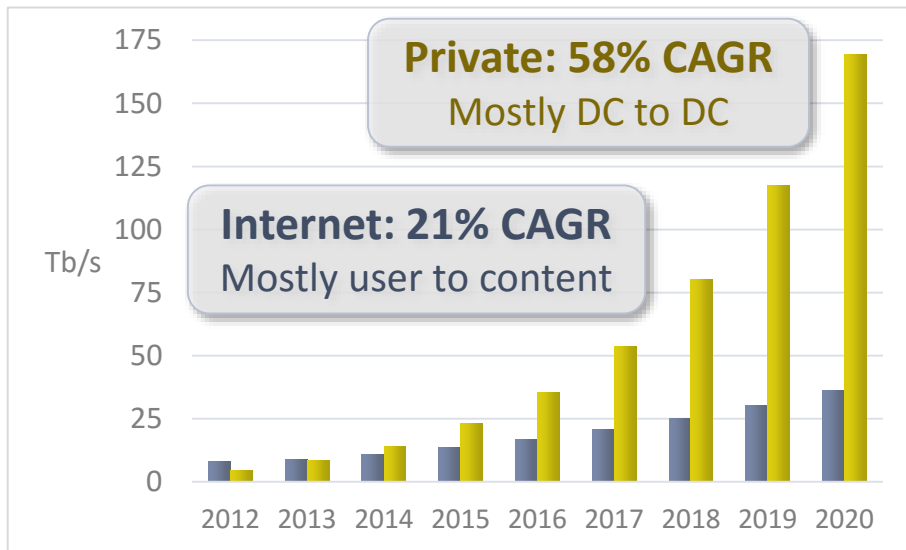
Intelligent Transport  
Optics Become Dominant

SDN

mostly hardware

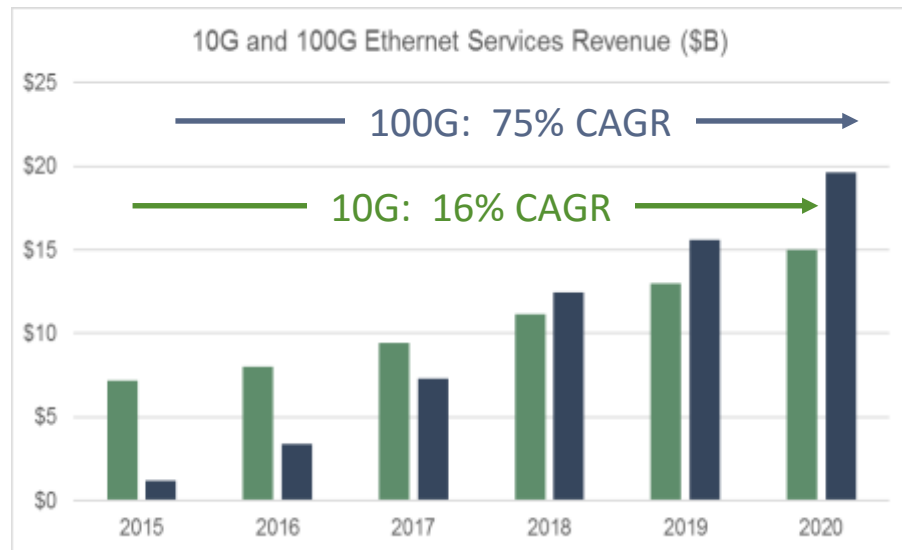
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# Layer T Traffic Patterns Changing



## Trans-Atlantic Bandwidth Mix

Source: Telegeography



## 100G Services are Surging

Source: Ovum



# Layer T Needs to be Cloud Scale

## Web Scale

3 of top 4 ICPs

Global Tier 1s, MSOs

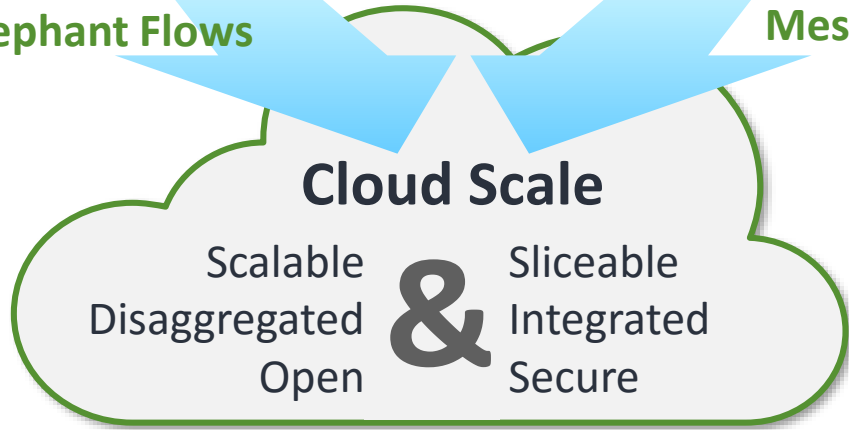
## Telco Grade



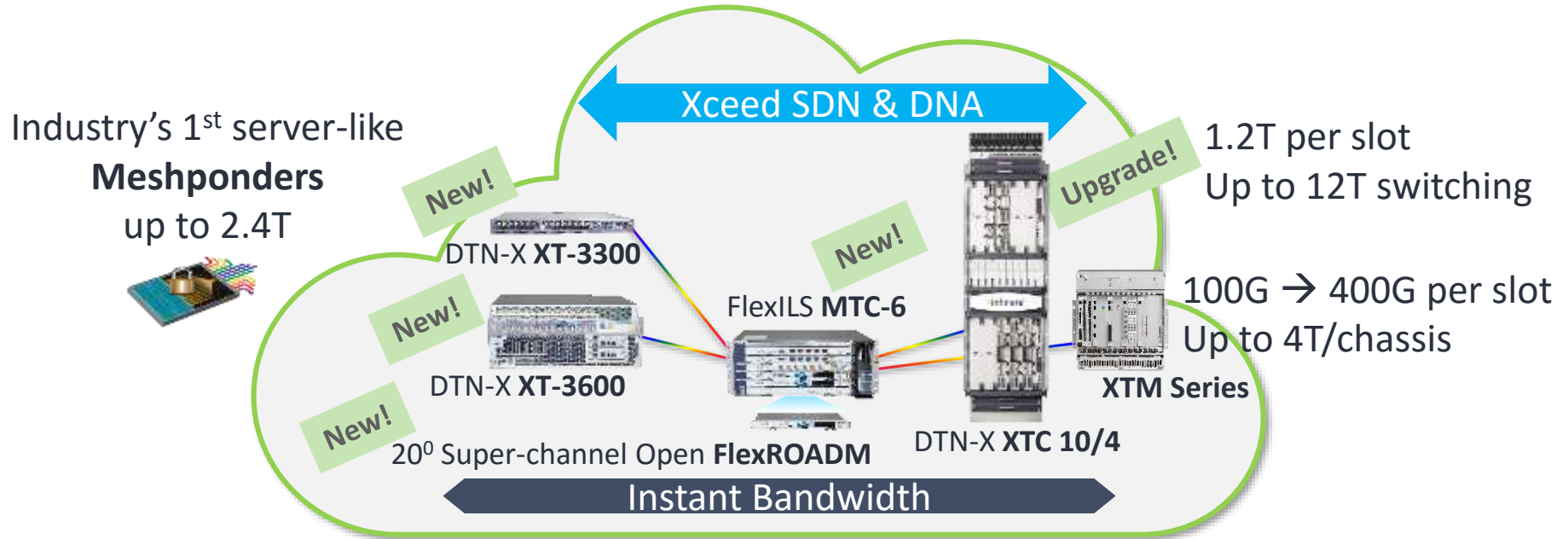
Scale-out, DevOps  
**Linear, Elephant Flows**



Cable, Mobile, Broadband  
**Mesh, Mice Flows**



# Introducing the Next Generation of Intelligent Transport Network

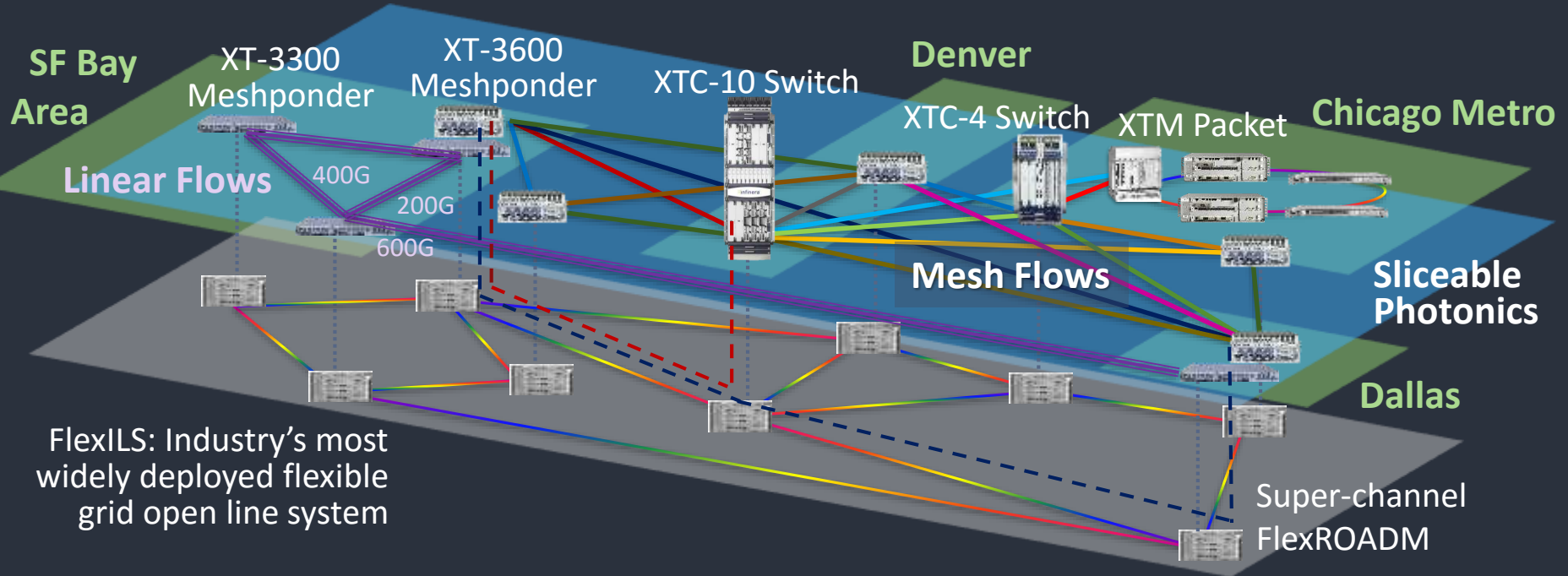


## Powering Cloud Scale Networks

# Unified Intelligent Transport Network for Cloud Scale Layer T

56% **lower** TCO than conventional network architectures

Xceed SDN control and DNA management



# Web Scale Disaggregation: World's First Meshponders

New!

## DTN-X XT-3300



1 RU, 600mm  
200G/λ, 1.2T Line  
12 x 100GE

Server-like & Disaggregated  
Single Fiber Pair, Massive Capacity  
Sliceable Super-channel  
Excellent for Large Flows

Instant Bandwidth

New!

## DTN-X XT-3600



4 RU, 470mm  
200G/λ, 2.4T Line, 40x10GE,  
24x100G OTN/Eth



Infinite Capacity Engine

*Live Demo after the Webcast*

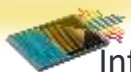
# DTN-X Family: XTC Series Advances to Cloud Scale

**Complete Investment Protection**  
Co-existence With Deployed Modules  
Non-disruptive Upgrade

## Integrated DWDM/Switch

Non-blocking packet aware switching  
Instant Bandwidth + Sliceability  
Manages sub- $\lambda$  flows

## No Compromise Performance



Infinite Capacity Engine

Upgrade!

Universal slots

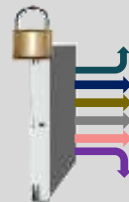
4.8T  
XTC-4

Universal slots

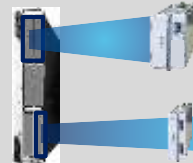
12T Switch

Universal slots

12T XTC-10



1.2T Line  
Module  
200G/ $\lambda$



1.2T Client  
Module  
(6 sub-slots)

Double-wide  
1 x 400GbE

2 x 100G  
20 x 10GbE  
18 x 10G  
Single-wide

# Industry's Most Widely Deployed Flexible Grid Open Line System

Full CDC ROADM + Sliceability

Ext C-Band & L-Band (>50T)

Future QAMs/Baud



FlexILS: MTC-6

New!

20<sup>0</sup> Super-channel FlexROADM  
(also supported on MTC-9, XTC-2E)

New!

3<sup>rd</sup> party Terminals

Infinera: DTN-X Family, Cloud Xpress, XTM Series

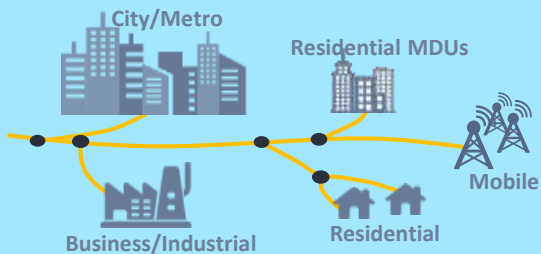
Open Line System: Accepts super-channels, single-channels. Open APIs

# Growth in Metro – A Tale of Two Markets

## Metro: DC to User

The “**conventional**” market

- Rich L1, L2 services
- Mostly 10G, 100G ramping
- High speed mobile (5G) in 2020



## Metro: DC to DC

The “**new**” emerging market

- New DCs, closer to user
- Massive capacity
- Fastest 100G growth in metro



# 100G Metro DWDM Solutions

Mesh Oriented

Linear Oriented



XTM Series

XTC-2

XT-3600



XT-3300

Cloud Xpress Family



Packet Optical  
100G → 400G/slot

Switch/Muxponder  
1.2T to Multi-terabits

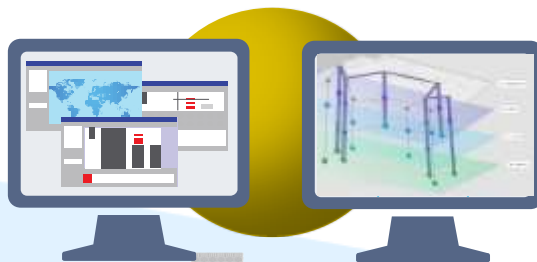


Planned upgrades 2017

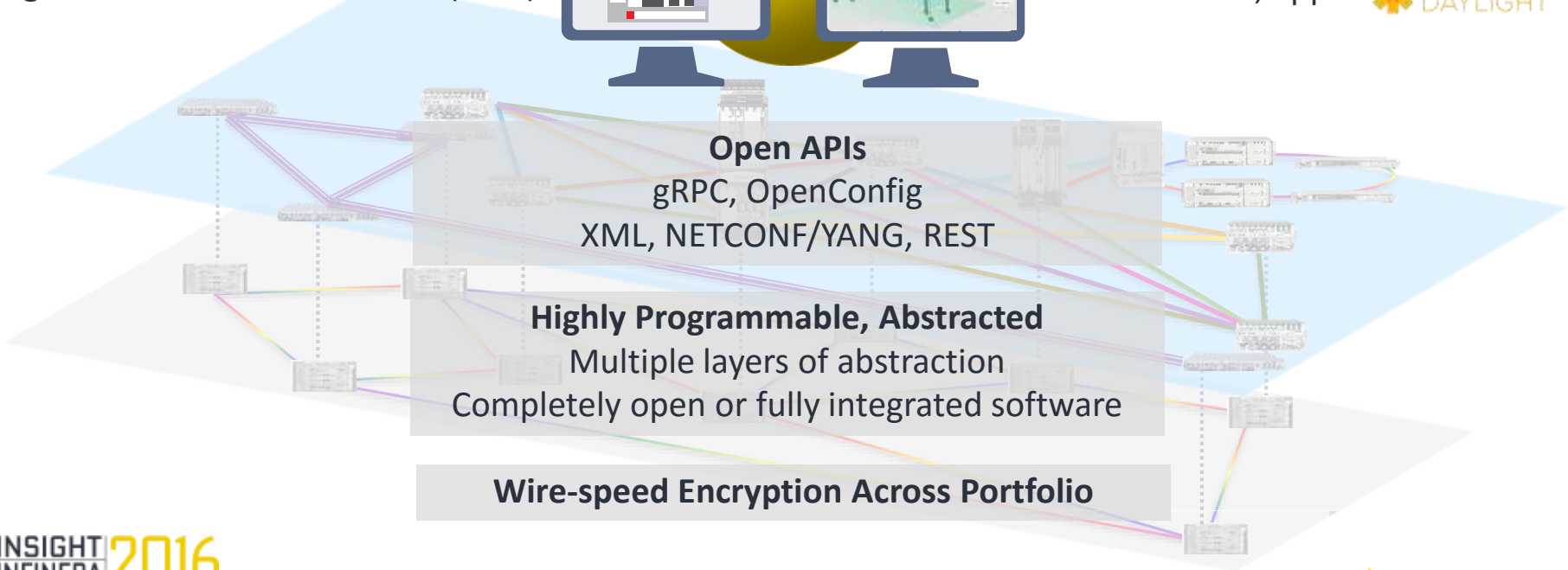


# Open and Secure

**Infinera Management Suite**  
Digital Network Administrator (DNA)

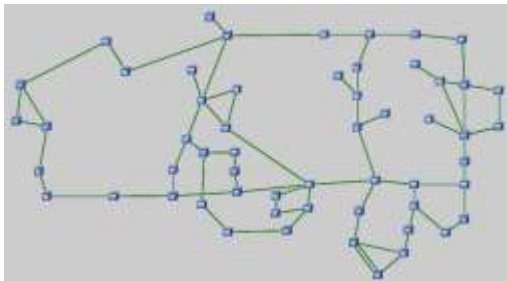


**Xceed Software Suite**  
SDN controller, apps



# Next Generation Intelligent Transport Network

## 56% Lower TCO

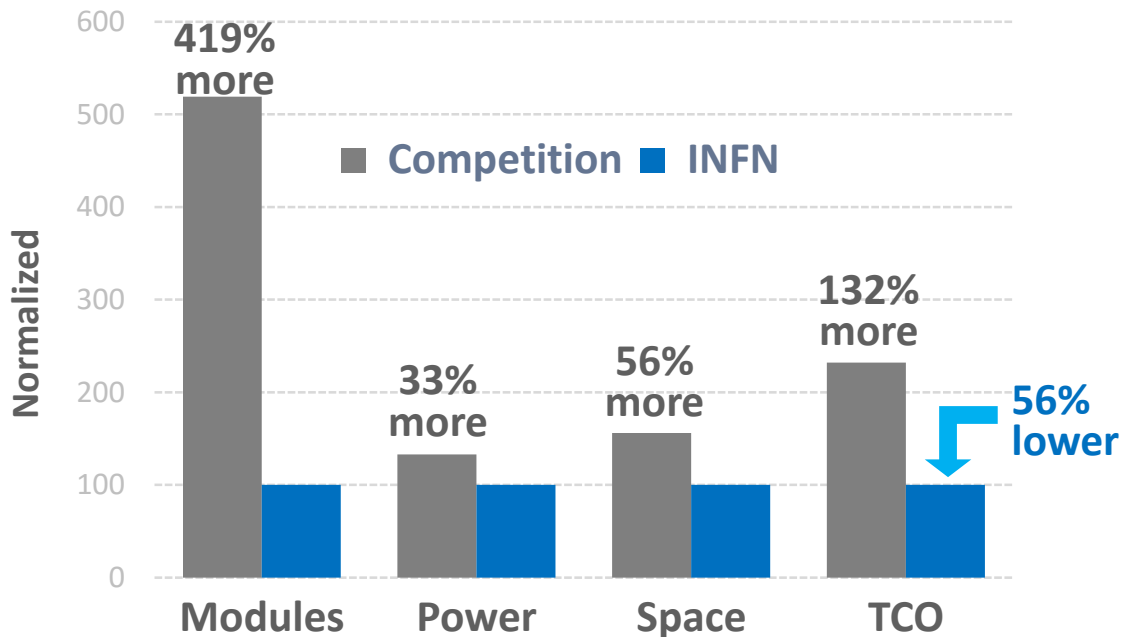


### NA Customer Network

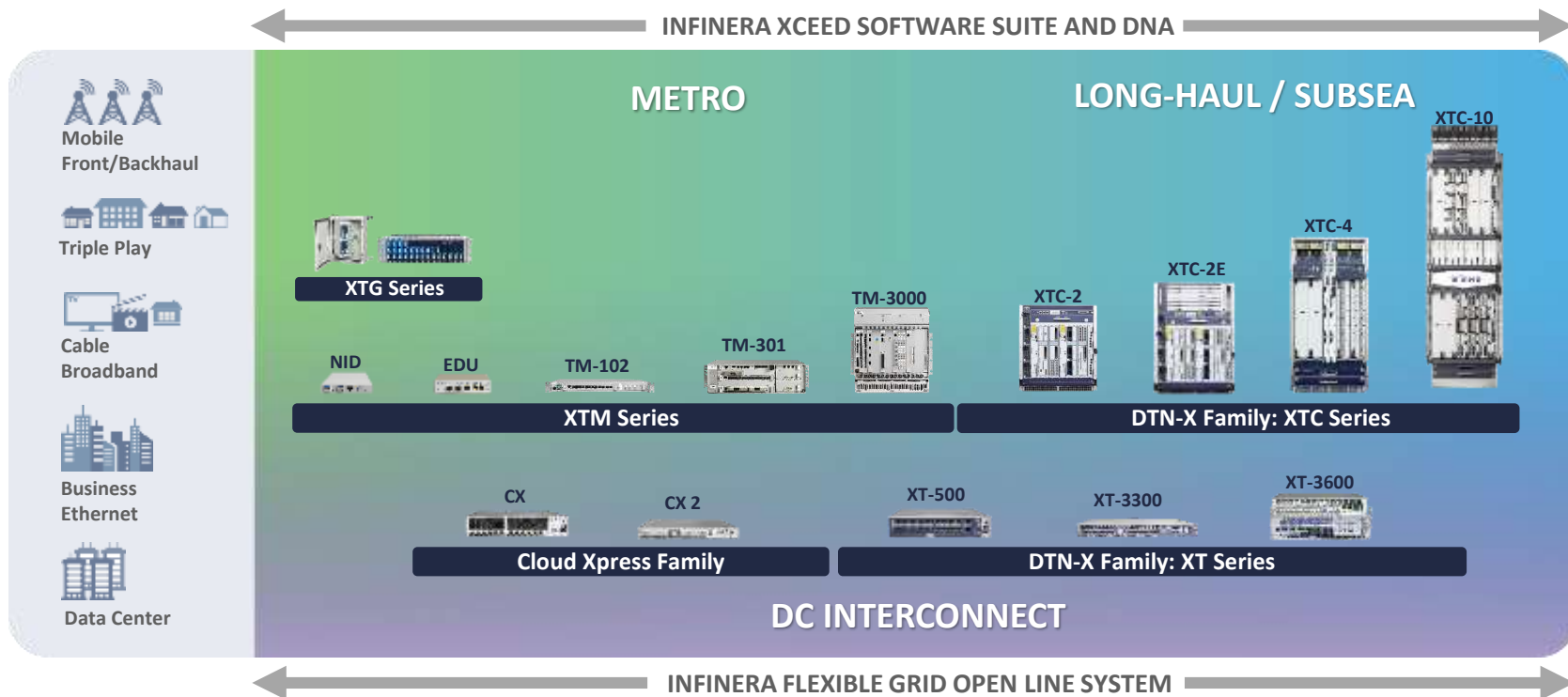
10G → 100G, 3 Time Periods

QPSK, 8QAM & 16QAM

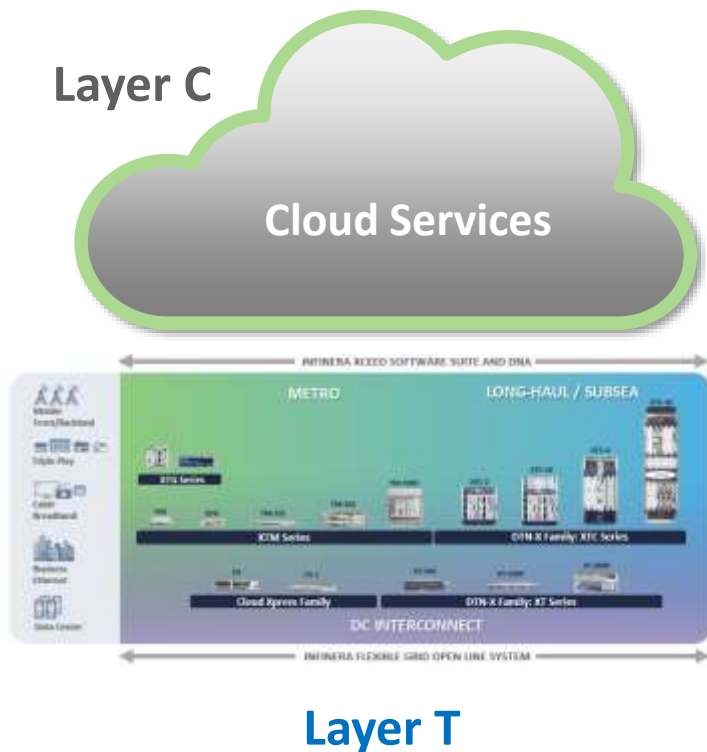
Switched & Meshponder



# The Infinera Unified End-to-End portfolio



# Powering Layer T at Cloud Scale



Next Generation  
Intelligent Transport Network

Uniquely fusing Web-scale & Telco-grade  
Application Optimized Solutions

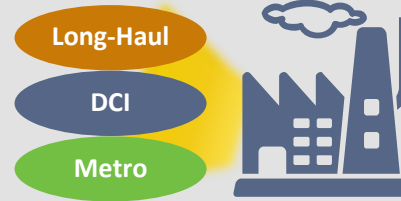
Fundamental Innovation Accelerating  
Layer T Transformation

# A structure to deliver differentiated financials

## Gross Margin



High scale integration



Fixed cost leverage



Unique pricing structures

## Operating Expenses

*R&D = 20% of revenue*

*G&A grows slower than revenue*



*Success based S&M investment*



Structured financial model

Financial discipline

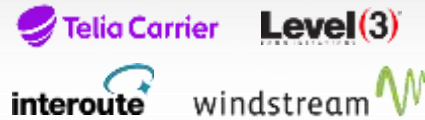
# Ability to Grow Faster Than the Optical Market

Aligned with the fastest growing customers

Top Internet Content Providers



Leading Wholesale & Enterprise Carriers



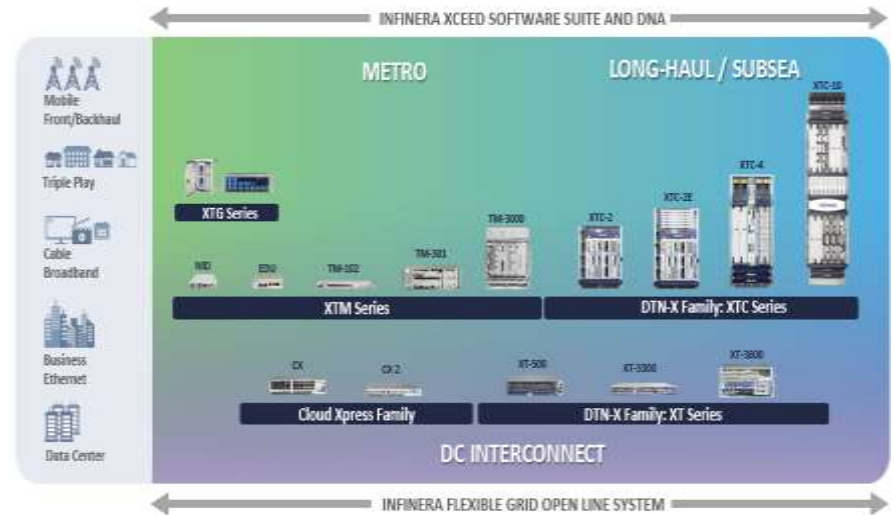
17 Tier 1s Globally



6 of Top 7 Cable Operators

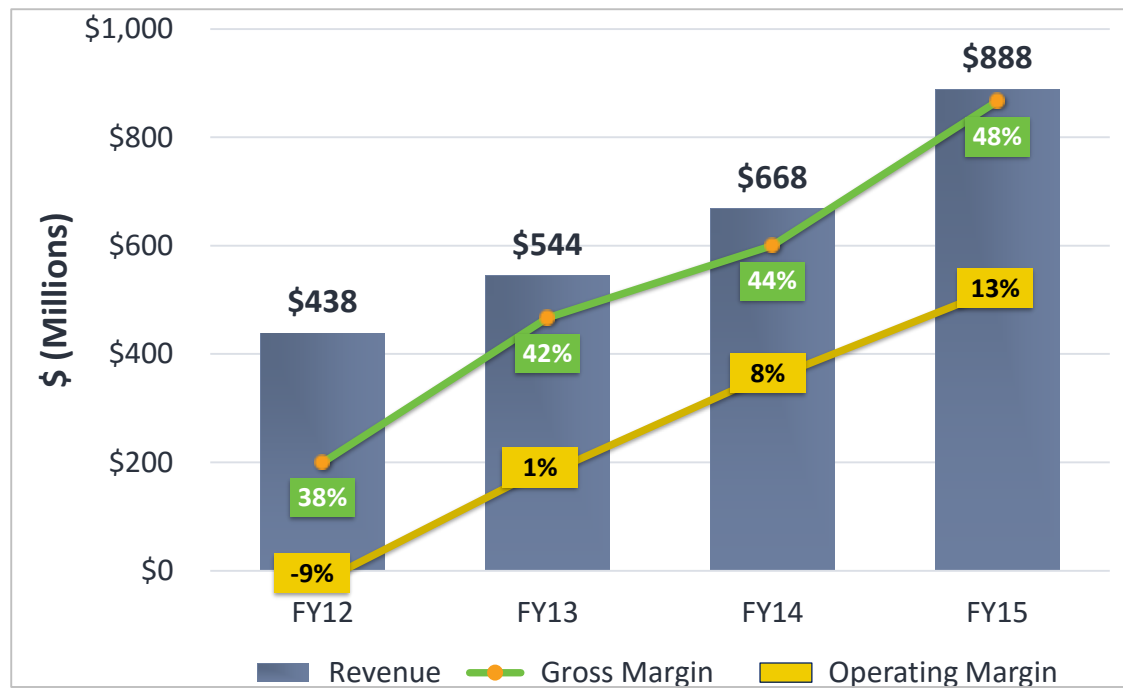


Expanding into markets that leverage our core technology



# Demonstrated Financial Success

Technology and Cost Structure Differentiation = Increasingly Profitable Growth



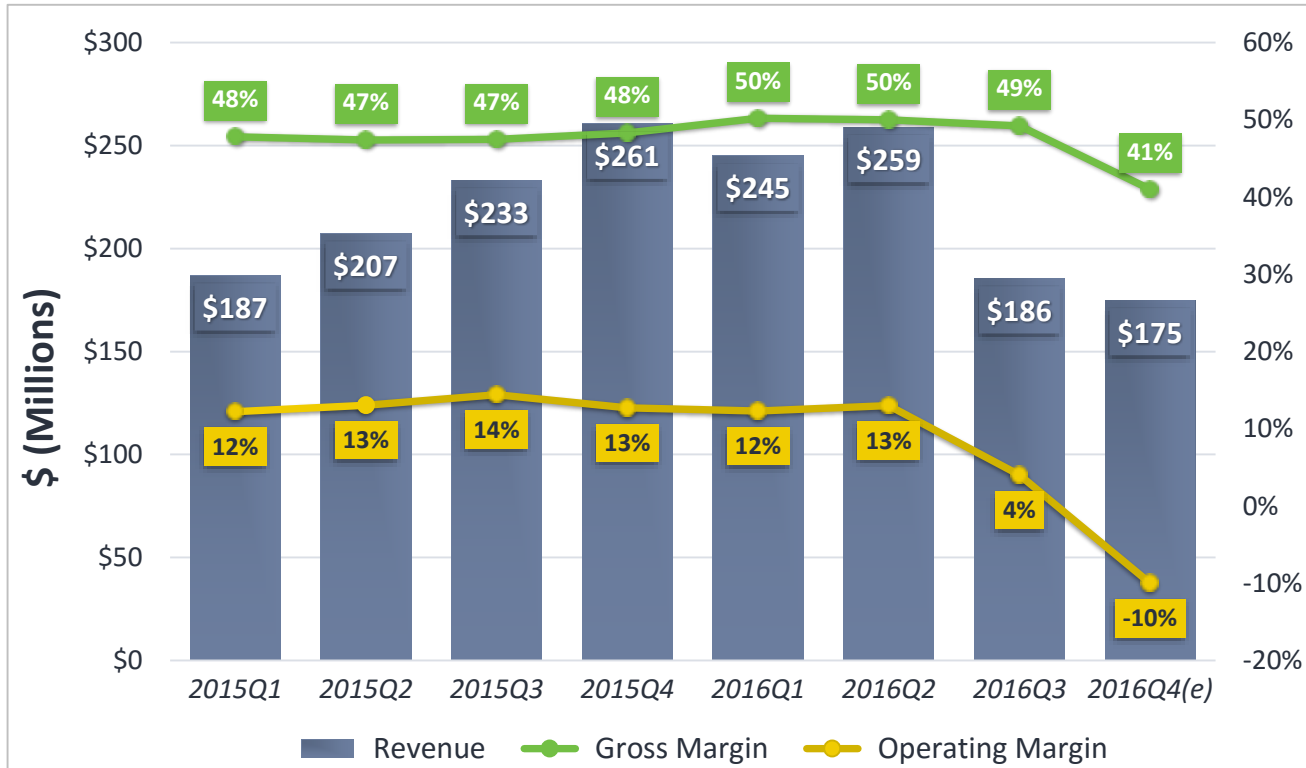
2012 → 2015

Revenue Growth:  
20+% Annual CAGR

Gross Margins:  
30s to ~50%

Operating Margins:  
Negative to 13%

# A Setback... Long Term Targets Still Intact



## Current Challenges

Overexposure to Long-haul

Technology gap in Subsea

Customer M&A



# Gross Margin: Investments today drive value tomorrow

## Short term margin impacts

## Strong return on investment

Long-haul

Pre-deployment of bandwidth at next-gen pricing

Well positioned with a strong customer base and growing IB license stream

Metro

Investing to earn incumbency and footprint

Market transition from 10G to 100G packet optical creates great opportunity

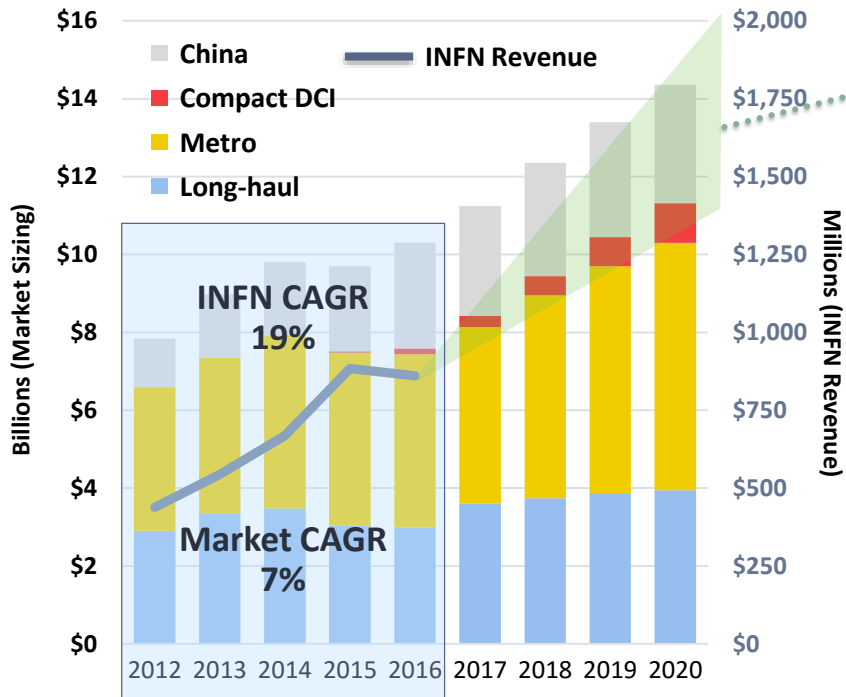
DCI

Pricing pressure increasing; Bridging key customers to CX-2

Emergence of cloud architectures should drive tremendous growth

Margins compare well to industry: Low to mid 40s GM% for next few quarters

# How Big Can We Be?

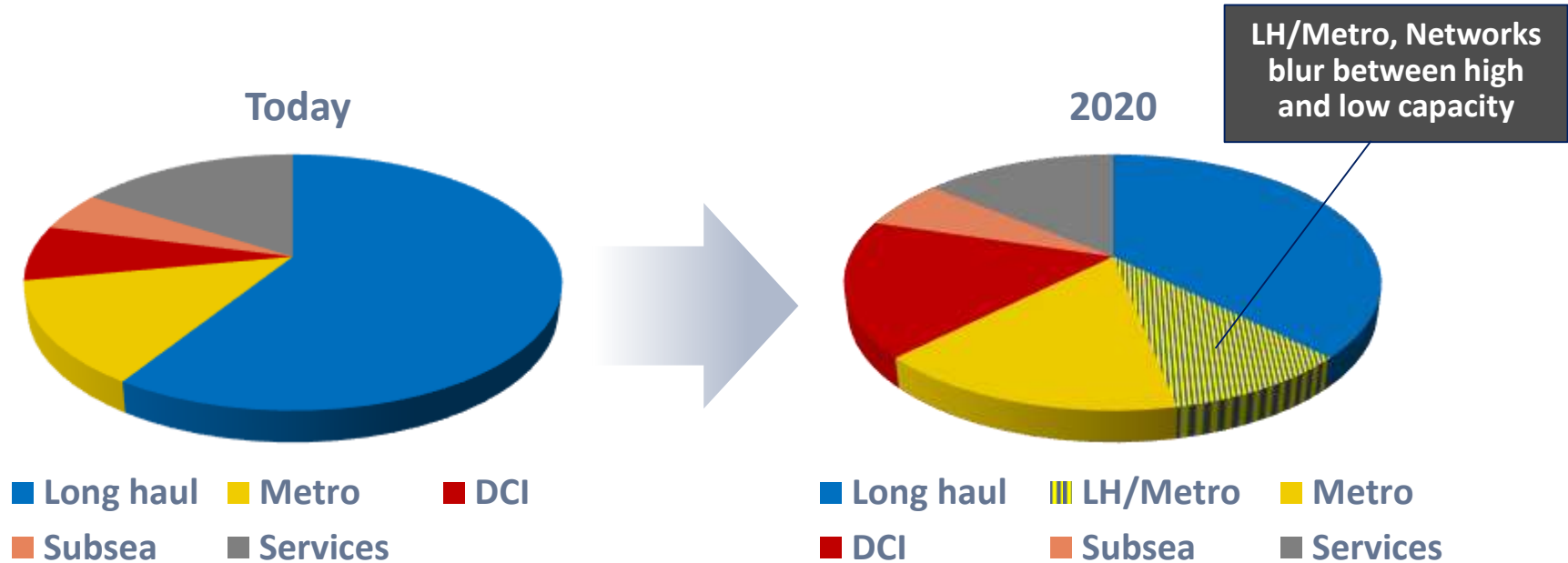


## WW Market Share Opportunity

	INFN Mkt Share Today	INFN 2020 Mkt Share Range	Market CAGR	INFN Implied CAGR Range
Long-haul	14%	14-17%	4%	4-10%
Compact DCI	94%	30-50%	62%	30-50%
Metro	3%	5-10%	9%	20-50%

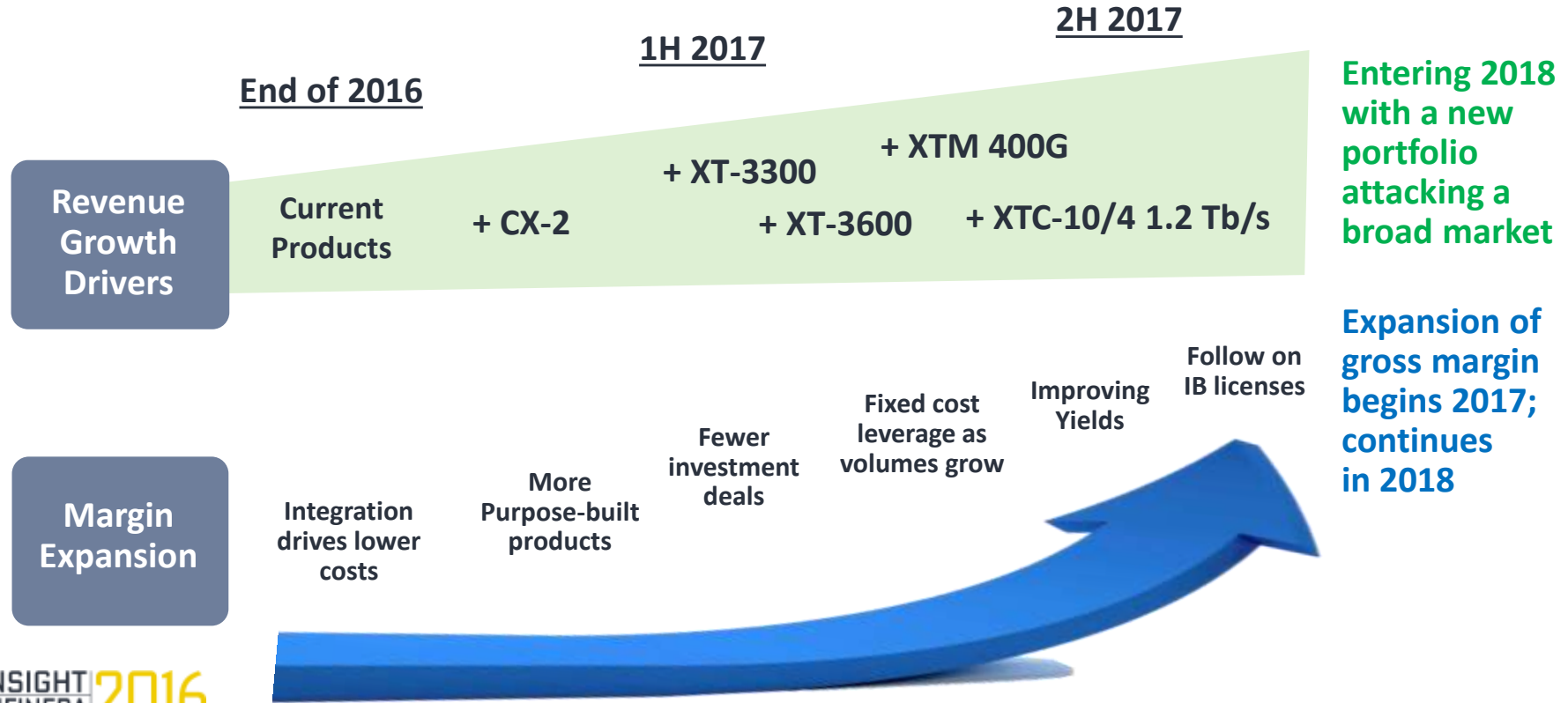
**Expected Overall Market CAGR (2016-2020) = 9%**

# Growth in All Markets: Building a Diversified Company






Long haul outgrows market; DCI and Metro fuel growth and increase as percentage of revenue mix

# FY17 – Paving the Path to Profitable Growth



# Operating Expense Outlook

	<b>R &amp; D</b> 	<b>S &amp; M</b> 	<b>G &amp; A</b> 
Past	18-20%; Investments did not keep pace w/revenue growth	~ 10%; Long haul centric business had fewer customers to address	5-6%; Revenue outgrew infrastructure
Present & Near Future	Mid to high 20s%; Investments in ICE & future optical engines	Ramp into new markets, invest in trial/demo for new products	Investing strategically to ensure scale
Future	19-20%; increased efficiencies as revenue grows	~11%, growth in line with revenue	5-6%; investing to ensure scale, but at slower pace
	<b>Investment discipline while we ramp optical engine cadence</b>	<b>Strategic investments in verticals and adjacent markets</b>	<b>Efficient spending scale to support future growth</b>

# Other Topics: Tax, Sharecount, Capital Allocation

## Taxes



- NOLs largely offset taxes
- Current taxes ~mid-single digits
- US – Low due to NOLs
  - Sweden – 22%
  - ROW – “Cost Plus”
- Evaluating future tax planning

## Sharecount



- Track record of managing down burn rate
- Current plan to repay convertible debt due in 2018 with cash

## Capital Allocation



- Priority remains investing in the business
- Ongoing consideration of a share buyback
- M&A currently unlikely on a large scale
- Dividends unlikely for foreseeable future

# Next-gen Technologies = Win/Win

## Customer Benefits

**Higher Capacity Engines,  
Enhanced Technologies**

**Lower Power, Lower Space**



**Infinera Experience**

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**Best solutions;  
Lowest cost of ownership**

## Infinera Benefits as well

- **Higher Unit Volume** – Increased leverage on fab as with higher volume and PIC yield improvement
- **Higher Capacity Engines** – Lower cost per bit from similar form factor
- **Instant Bandwidth** – Customers time purchases with revenue; Infinera benefits from software-like revenue stream

# The Future is Bright: Infinera's Ultimate Opportunity

**Long Haul/Subsea return to growth;  
DCI and Metro = high growth opportunities**

**Photonic integration and pricing strategies  
enable differentiated cost model**

**Balancing technology investments with  
disciplined expense management**

**Long Term Goals Intact**

- **Outgrow Market**
- **50% Gross Margin**
- **15% Operating Margin**



# GAAP to Non-GAAP Reconciliation

(In millions, except percentages and per share data)  
(Unaudited)

**Note:** Amounts represent the midpoint of the expected range.

	Q3'16 Actual	Q4'16 Outlook
<b>Reconciliation of Gross Margin:</b>		
U.S. GAAP	45.6%	37%
Stock-based compensation	0.8%	1%
Amortization of acquired intangible assets	2.8%	3%
Non-GAAP	<u>49.2%</u>	<u>41%</u>
<b>Reconciliation of Operating Expenses:</b>		
U.S. GAAP	\$	101
Stock-based compensation		(9)
Amortization of acquired intangible assets		(2)
Non-GAAP	<u>\$</u>	<u>90</u>
<b>Reconciliation of Operating Margin:</b>		
U.S. GAAP	(5.9)%	(20)%
Stock-based compensation	5.5%	6%
Amortization of acquired intangible assets	3.6%	4%
Acquisition-related costs	0.4%	
Non-GAAP	<u>3.6%</u>	<u>(10)%</u>
<b>Net Income per Common Share:</b>		
U.S. GAAP	\$	(0.27)
Stock-based compensation		0.08
Amortization of acquired intangible assets		0.04
Amortization of debt discount		0.02
Income tax effects		(0.01)
Non-GAAP	<u>\$</u>	<u>(0.14)</u>

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## The Future of Intelligent Transport

Dave Welch, Co-Founder, President

November 17<sup>th</sup>, 2016



# Cloud Driving Technology Evolution

Embedded, Closed → Cloud, Open APIs

Software/SDN

Layer T at  
Cloud Scale



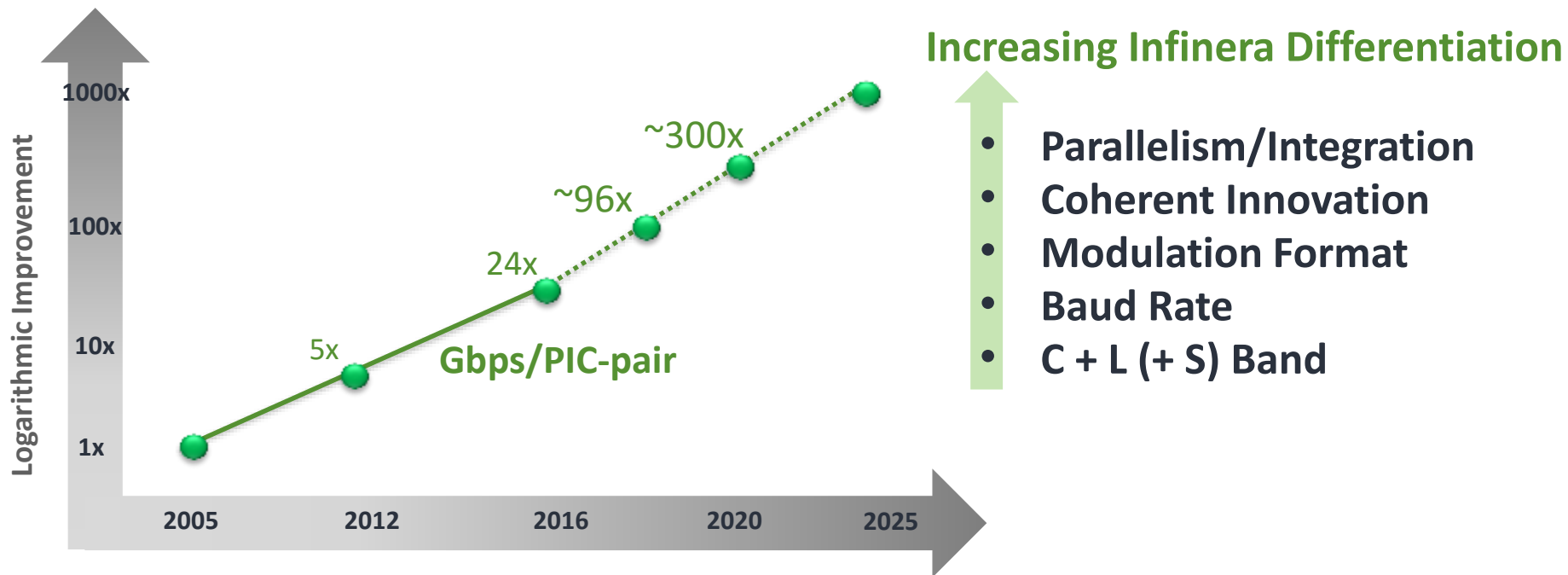
Packet

Optical

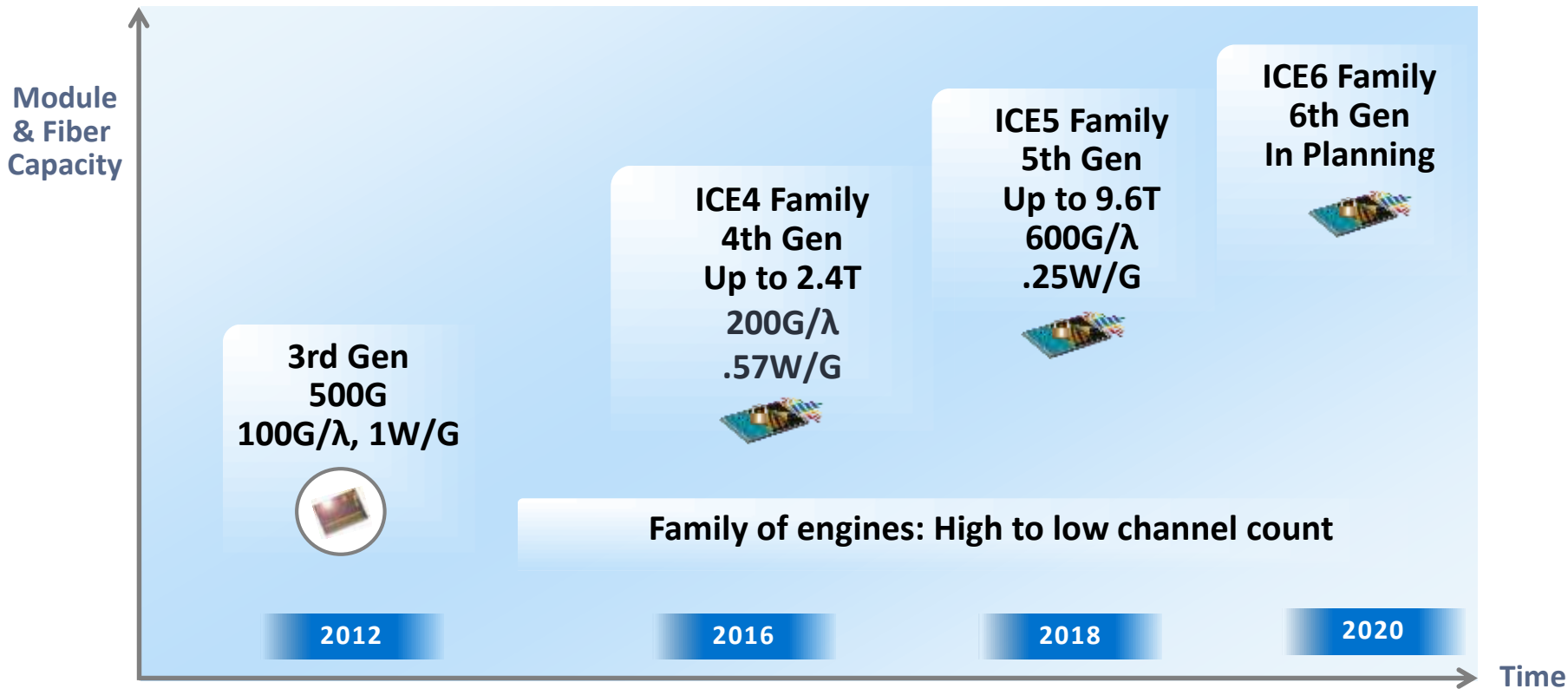
Heavy Packet → Lean Packet

Static Gigabits → Flexible Terabits

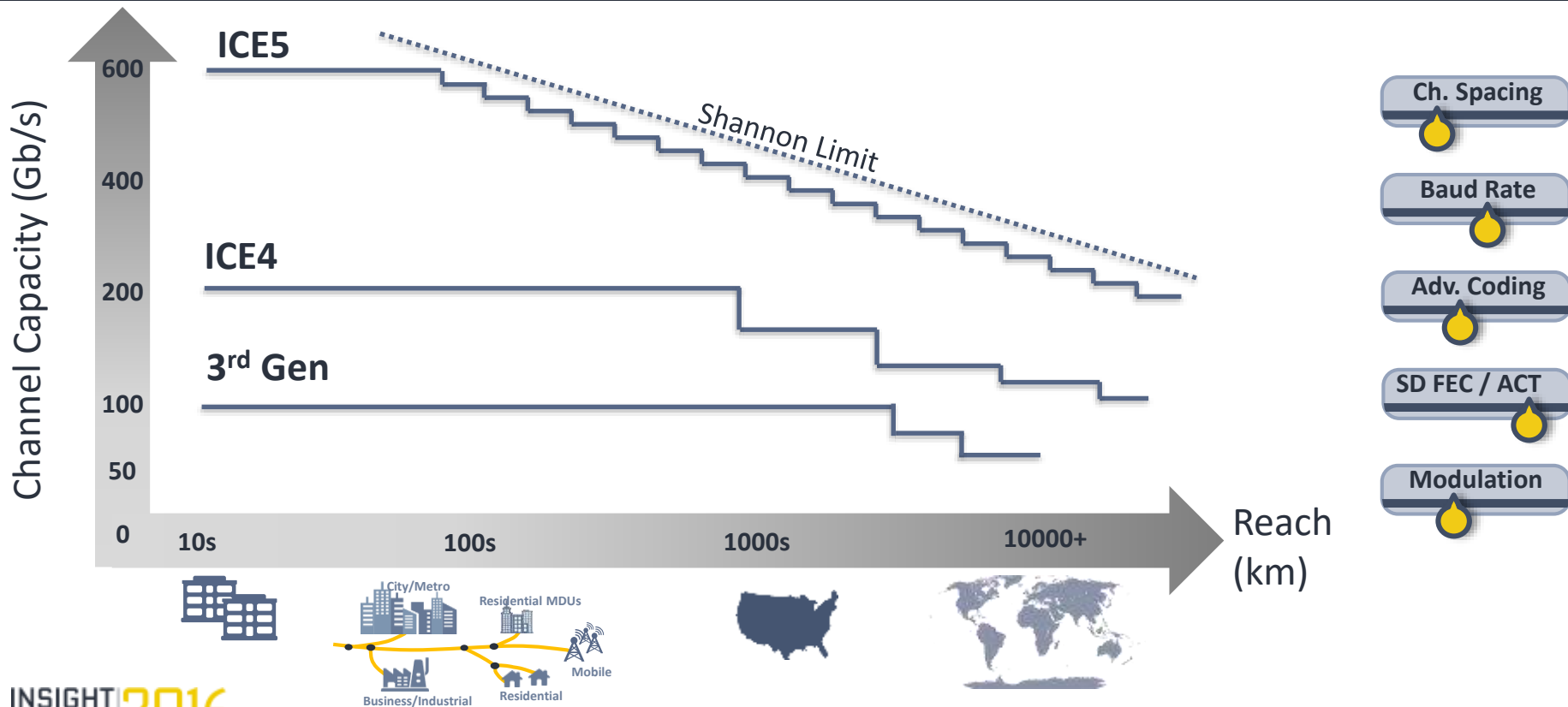
# Infinera Scaling Laws



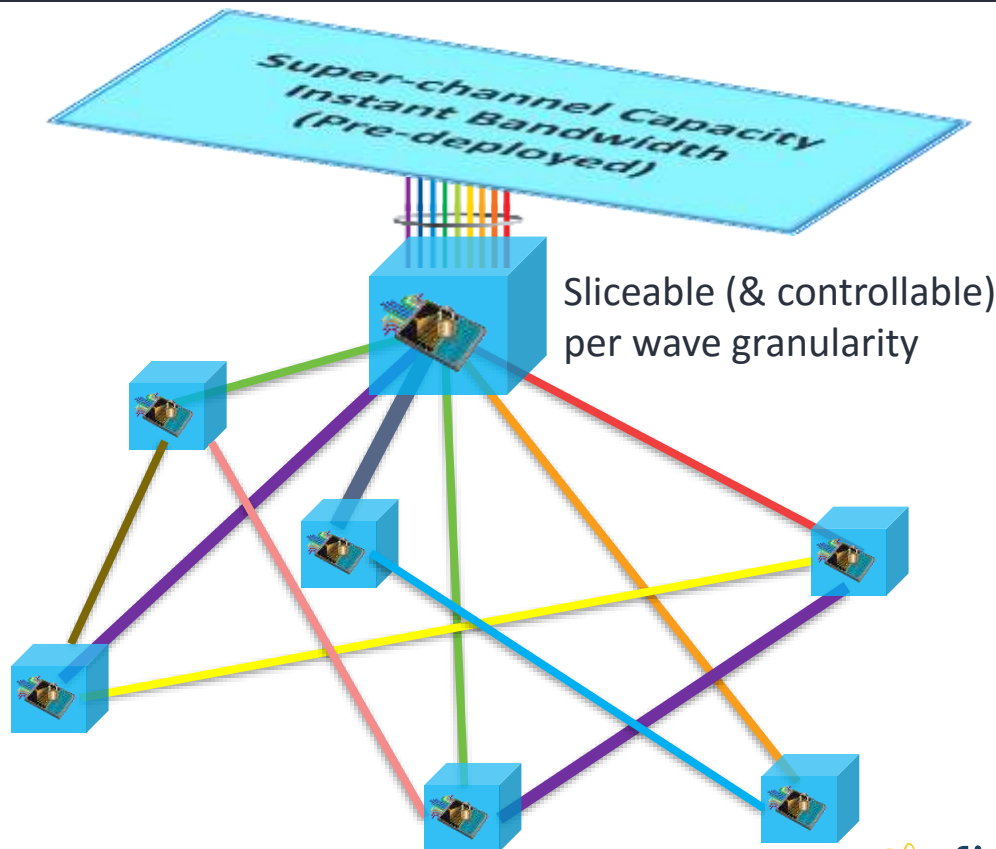
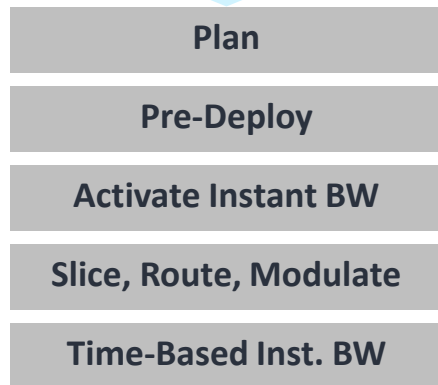
# Optical Engine Evolution



# Pursuing Maximum Reach & Capacity



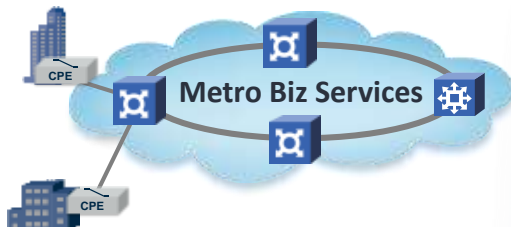
# Leveraging the Power of Multi-Channel Optical Engines



# Layer T Architectural Shift, Fiber Deeper Into Metro

## Fiber Deep Opportunity

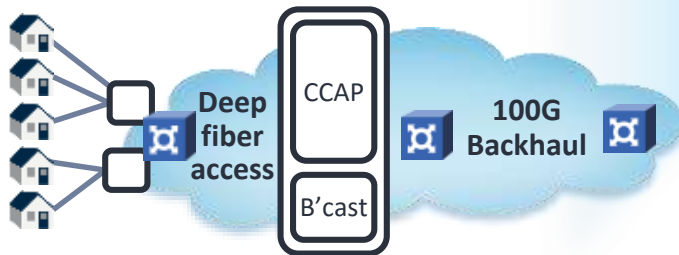
*Fiber to the business*



*Fiber to the tower*



*Fiber to the node*



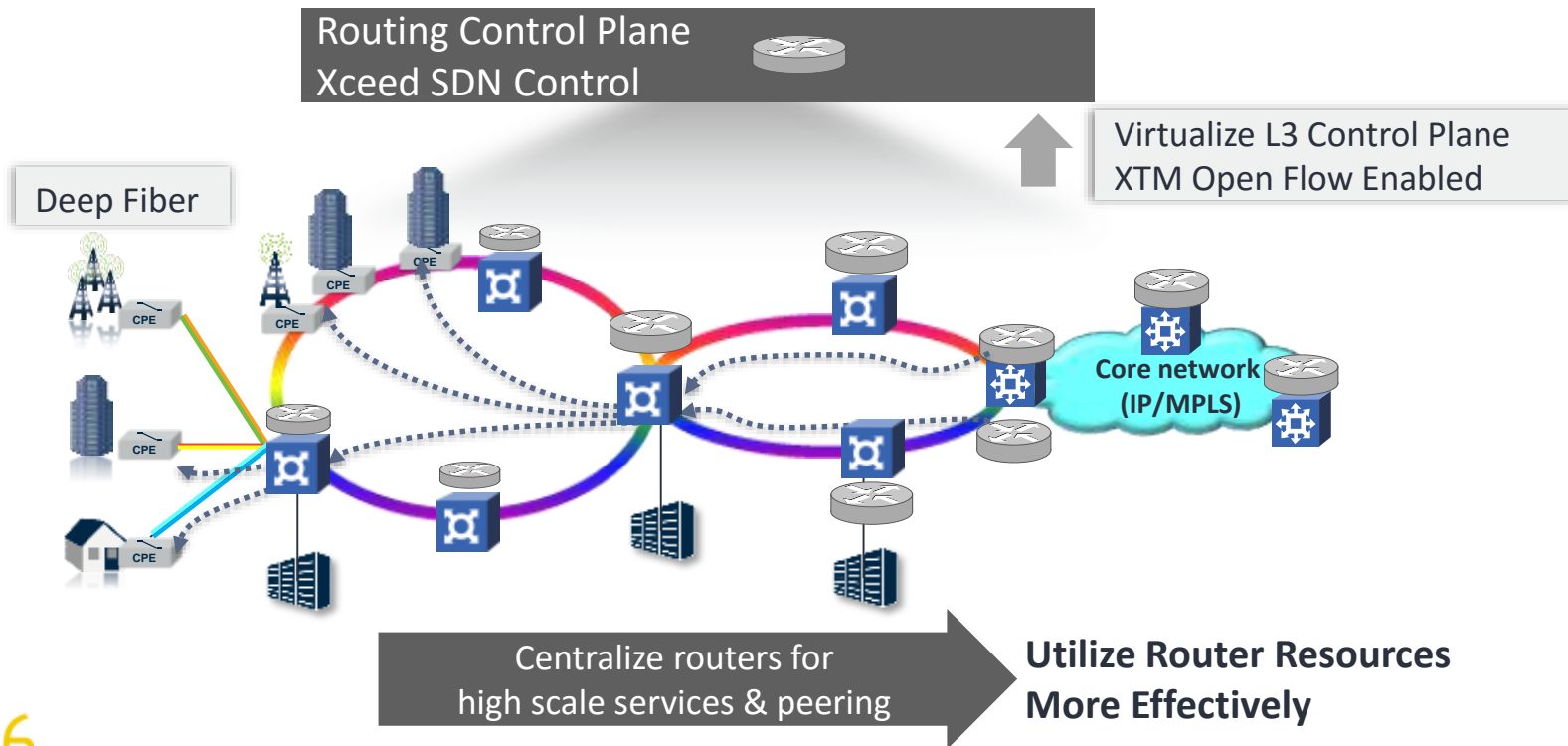
## Packet Optical Requirements

MEF CE2.0 Services  
Flexible Configs  
Low Latency  
Superior Sync  
Low Space, Power  
Hardened Systems



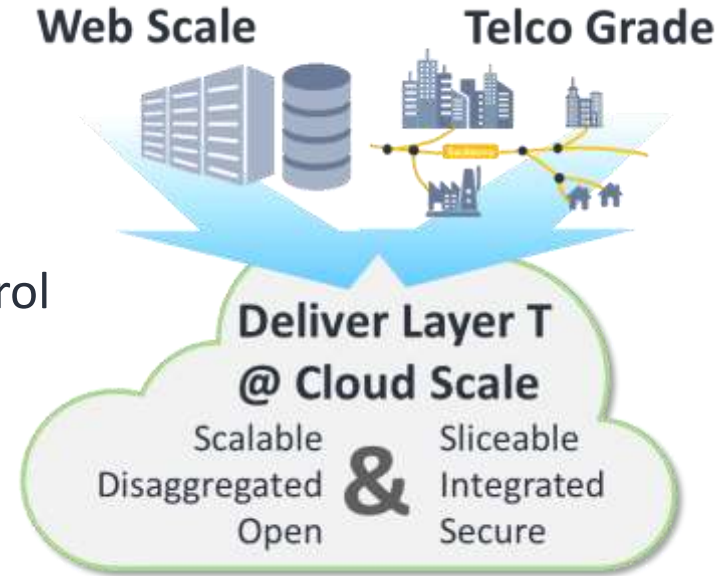
# Routing Moves to the Cloud

## Distributed Routing Function (DRF)



# Well Positioned for Layer T Transformation

- Best of Web Scale & Telco Grade
- Optical engine innovation & cadence
- Unique pre-deployed Bandwidth w/Xceed control
- End-to-end solution subsea to metro edge
- Infinera as catalyst for Layer T transformation



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## Closing

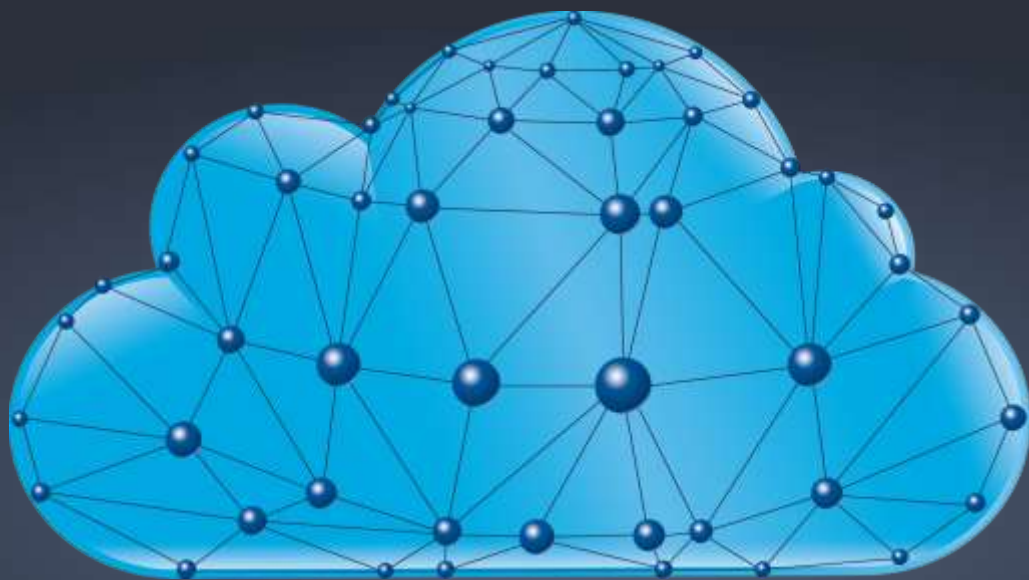
Tom Fallon, CEO

November 17<sup>th</sup>, 2016



# The Infinera Experience Is Differentiated





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