Supercharging the Network

OFC Investor Briefing

March 13, 2018

David Heard & Dave Welch

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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 and financial performance and similar statements; statement regarding future products or technology as well as the timing to market of any such products or technology; 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, future growth, potential markets or market size, technology and product developments, or enforceability of our intellectual property rights; statements regarding our financial outlook and any other statements regarding future financial performance; and any statements of assumptions underlying any of the items mentioned.

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This presentation includes certain non-GAAP financial measures. Pursuant to Regulation G, we have provided a reconciliation of these non-GAAP financial measures to the most directly-comparable GAAP financial measures in its fourth quarter earnings release and CFO Commentary, which are available on the Investor Relations section of our website. Revenue guidance is provided using ASC 605. We will adopt ASC 606 for Q1 2018, and intend to provide an ASC 606 to ASC 605 reconciliation when we report first quarter results.

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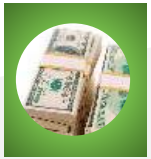
Infinera – Value in Differentiation

SUPERIOR PRODUCTS & SERVICE

Industry pioneers of optical leadership
Most reliable, high-performance products
Driving lower customer TCO



AGILE BUSINESS MODELS

Customer-friendly usage-based billing unique to Infinera's technologies (e.g. Instant Network)

VERTICAL INTEGRATION LEADERS

Defining our innovation destiny
Driving lower cost structure for Infinera

Technology Leadership = **Differentiated Operating Model** = **Financial Leverage**

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Syncing with Optical Market Trends

OPTICAL IN SYSTEMS, APPLIANCES, MODULES

AUTOMATION & SDN

TECHNOLOGY INTENSIFIED

CLOUD DRIVEN ARCHITECTURE

DENSIFICATION OF METRO

Optical Engine Investment

Software Investment

Instant Network

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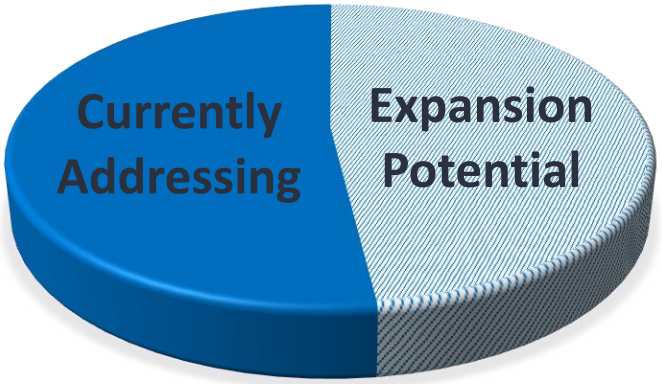
Expanding Infinera's Addressable Market

2018 MARKET (TAM=$13B)

Opportunities to Expand



- Long-haul/Subsea/DCI/Metro
- CSPs, ICPs
- North America/EMEA-Centric

5% CAGR

2021 MARKET (TAM=$16B)

Expanded Opportunities, Growing Market

- **ICE4/XTM II + ICE5/ICE6**
- **Aggressive GTM, Open ICE**
- **New Applications –** Fiber Deep, 5G

$1-2B Incremental Opportunity

Average Worldwide Market Size (IHS, ACG, Dell'Oro, Cignal AI, Ovum)

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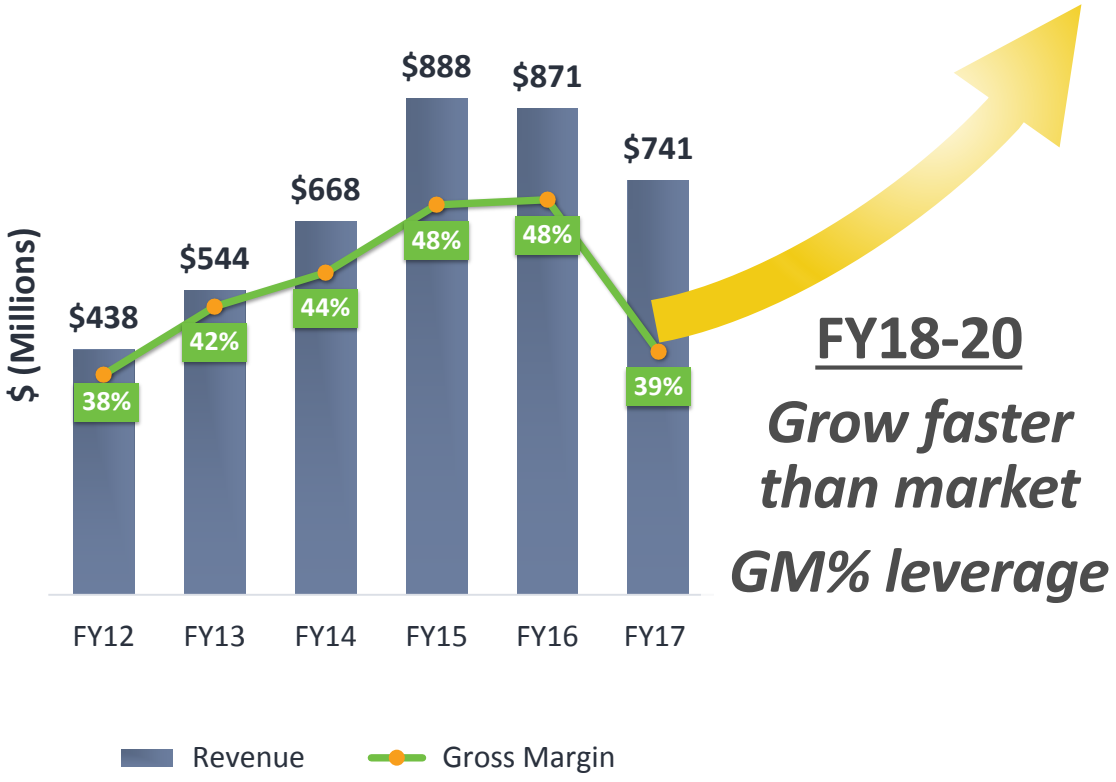
Positioned to Repeat Past Success



FY18-20

Grow faster than market

GM% leverage

Next 3 years

NEAR TERM TRACTION

ICE4 20% revenue in Q4-17
Recovery from customer M&A

MARKET EXPANSION POTENTIAL

New products drive new customer wins
Enhanced GTM and operational efficiency

FASTER OPTICAL ENGINE CADENCE

Drives sustainable financial performance
Each new engine has lower cost structure

Gross margin is non-GAAP

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Syncing Cadence with Customer Adoption

New Optical Engine Development Timeline

- Smoother product delivery
- Matches customer pace
- Sustainable revenue/margins

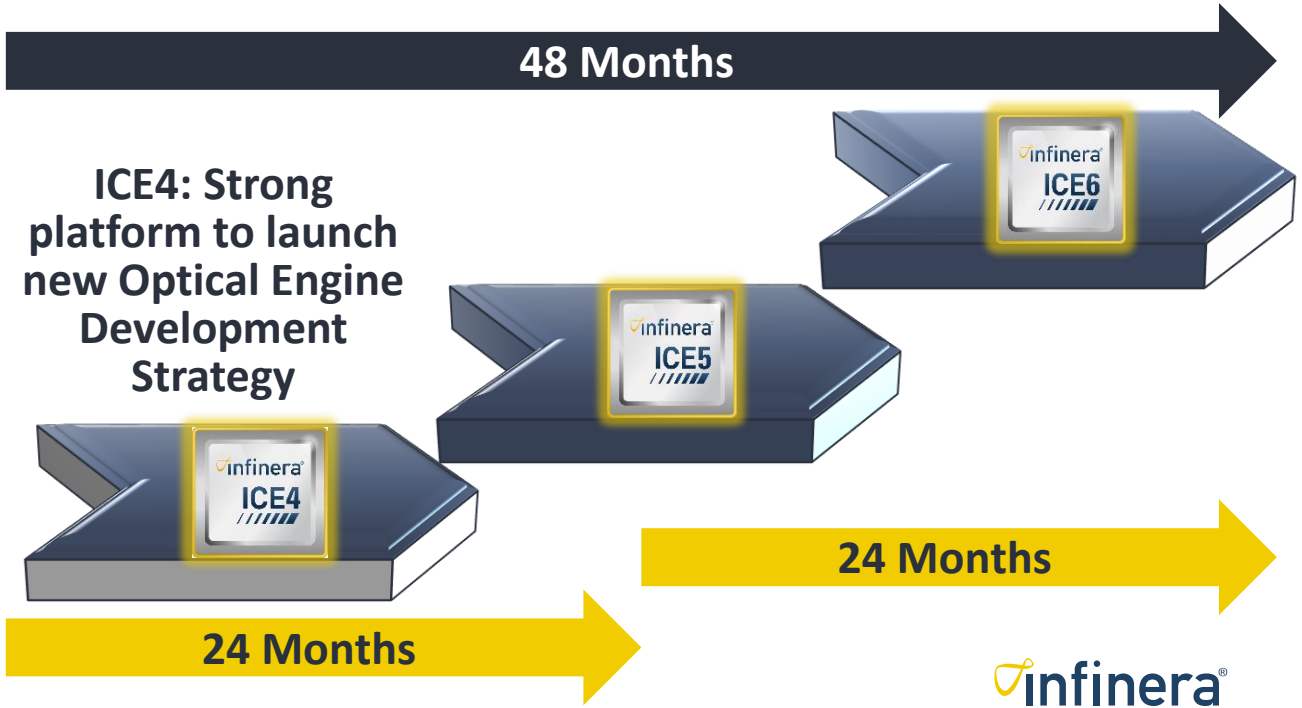
TELECOM (CSP)

Gradual adoption with comprehensive build-outs

WEB SCALE

ICPs, Cable, Wholesale

Faster adoption with with purpose-built tech



Strengthening the Business Model

INCREASE GTM REACH	• New Markets • Partnership Opportunities	**HIGHER GROWTH, DIVERSIFIED MIX**
OPEN ARCHITECTURES	• Open ICE • Appliances	**ACCELERATES NEW DESIGN WINS**
NEW ARCHITECTURES	• 5G • Cable Densification (Remote PHY)	**$1-2B INCREMENTAL OPPORTUNITY**
OPERATIONAL EXCELLENCE	• Restructuring/Investment Prioritization • Optical Engine Investment up >20% • New Team Members	**OPERATING LEVERAGE**

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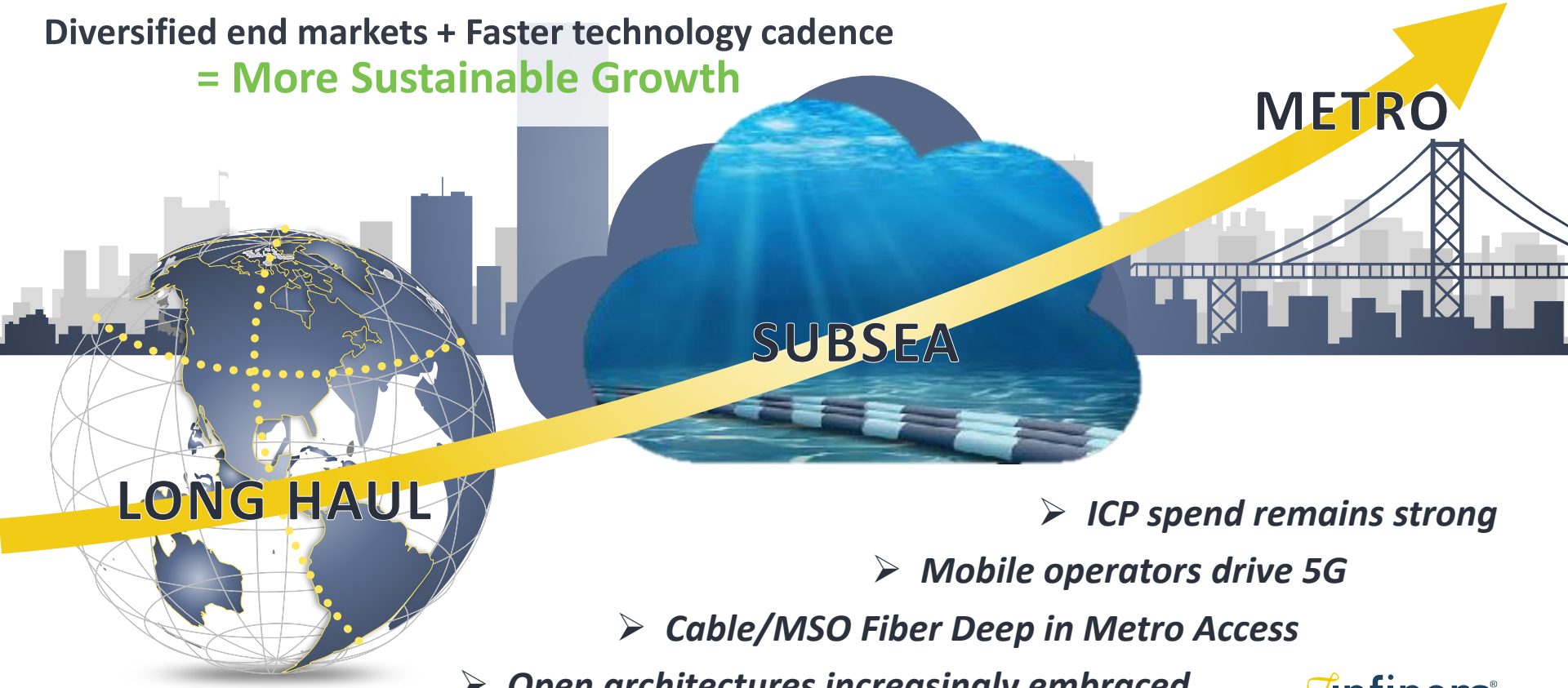
Sustainable Growth Trajectory

Diversified end markets + Faster technology cadence

= More Sustainable Growth



- ***ICP spend remains strong***
- ***Mobile operators drive 5G***
- ***Cable/MSO Fiber Deep in Metro Access***
- ***Open architectures increasingly embraced***

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Supercharging the Network: *Delivering Optical Leadership*

OFC – March 13, 2018

Dave Welch

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Optical Leadership in Perspective

What matters to customers

Infinera helps its customers win in their markets

Lower total cost of ownership (TCO)

Maximize fiber capacity

Accelerate time to revenue (TTR), speed to service

How we deliver

Optical Performance Capacity TCO

Photonic Integration (PIC), Advanced Coherent (DSP)

Drive cost & power per bit, capacity-reach

Cloud Scale TTR TCO

Instant Bandwidth, Instant Network

Sliceable super-channels, Open ICE, Automation

The Infinera Experience TTR TCO

Time as a Weapon, World-class quality

Customer-centric focus, Simplicity & ease of use

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ICE Optical Leadership That Counts With Customers

Promise	*Progress*
ICE4 differentiated performance and value	• Record-setting performance • Broad adoption, short haul to subsea • Growing faster than the market
ICE5 and ICE6 on new cadence, rapidly advancing capacity per wave and capacity-reach	• ICE5 engine already running – live demo at OFC • First to 64QAM/66Gbaud • ICE6 tech demonstrations ahead of industry • Unique advantages to get to higher baud rate

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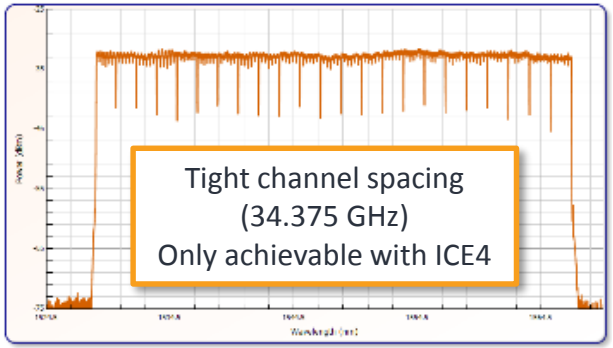
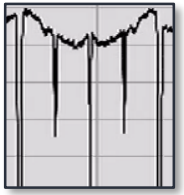
ICE4 Leading Performance Across Segments

Record 16QAM Fiber Capacity

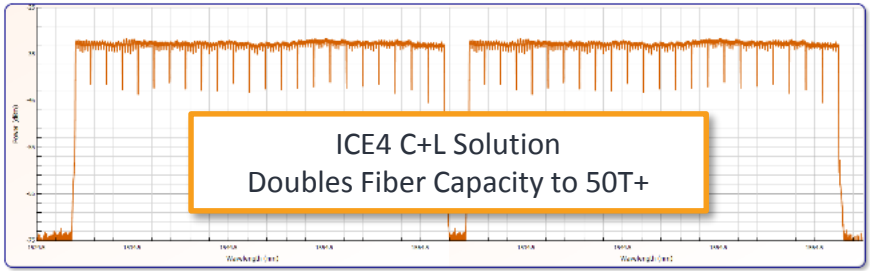
27.6 Tb/s





Four Nyquist subcarriers per wavelength

Next Step: C+L



Record Spectral Efficiency

18.2 Tb/s over 10,000 km

- 50% more capacity than others
- Showcases the whole ICE4 PIC + DSP toolkit

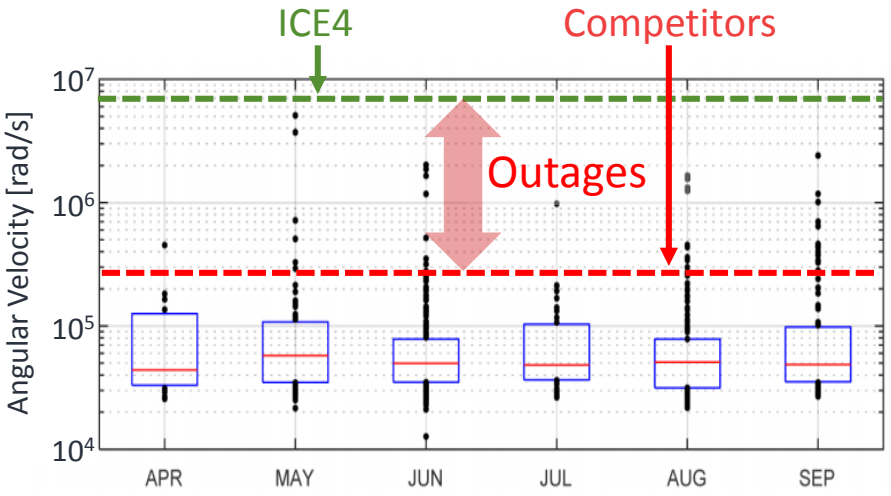
PIC Tx Performance	High Dispersion Comp
PIC Rx Performance	Nyquist Subcarriers
Tight Channel Spacing	Nonlinear Comp
Flexible Mod & Baud	FEC Gain Sharing

ICE4 Leading Performance Across Segments

Record Lightning Tolerance

100% protection

- Thousands of outages/year
- Impacts all types of operators
- Worse at higher QAM
- Infinera unique 100% protection, based on Nyquist subcarriers



Trials with ICPs, Tier 1 CSPs, Wholesale CSPs

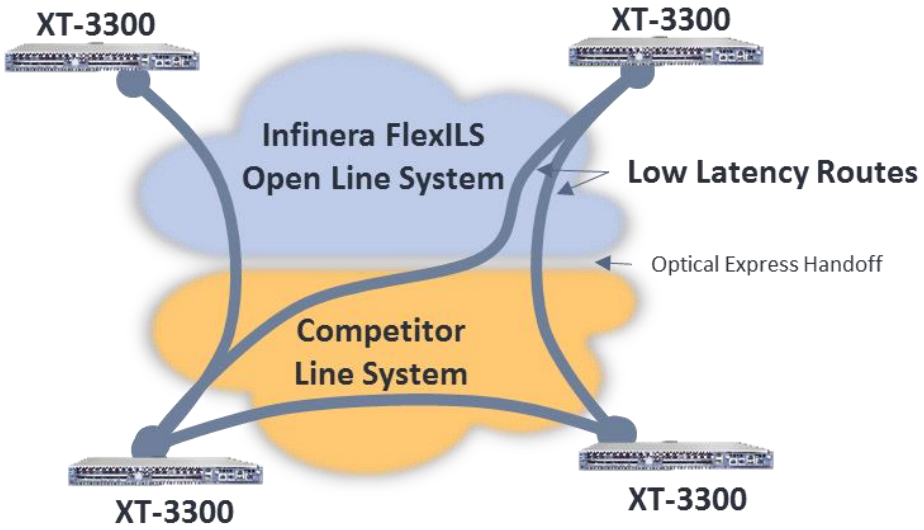
Open ICE Opens New Opportunities

Open ICE

ICE4 over Any Network

European wholesaler, low latency service

- ICE4 won on reach, latency performance
- Open ICE allows deployment anywhere, optimizes cost



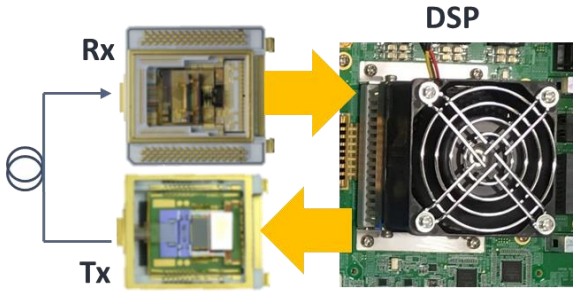
Demos & trials EMEA, APAC, Americas

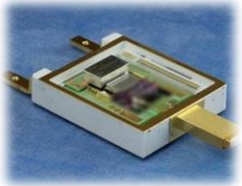
ICE5: World's First Integrated 2.4T Engine

- 600G/wave in integrated 2.4T engine
  - 5th Generation Optical Engine (PIC + DSP)
- Fine-grained 100G-600G/wave
  - 600G metro reach with 64QAM, 66Gbaud
  - 400G over 1500 km
- Built-in support for 400 GbE, encryption
- Targeted for scale-optimized networks

Live at OFC

Fully integrated ICE5 optical engine using ***go-to-market*** PIC modules and DSP





Tx PIC Module

Rx PIC Module

FlexCoherent DSP

ICE5 Optimized for Cloud Scale & Fiber-deep Networks

ICPs Scale-optimized	**Metro DCI**	**Long Haul DCI**	**Subsea DCI**
CSPs Scale-optimized	**Fiber-deep, high capacity**	**L0 overlay**	**Subsea multi-service**
CSPs Service-optimized	**L2-L3 aggregation**	**L1-L2 bandwidth management**	**Subsea bandwidth management**

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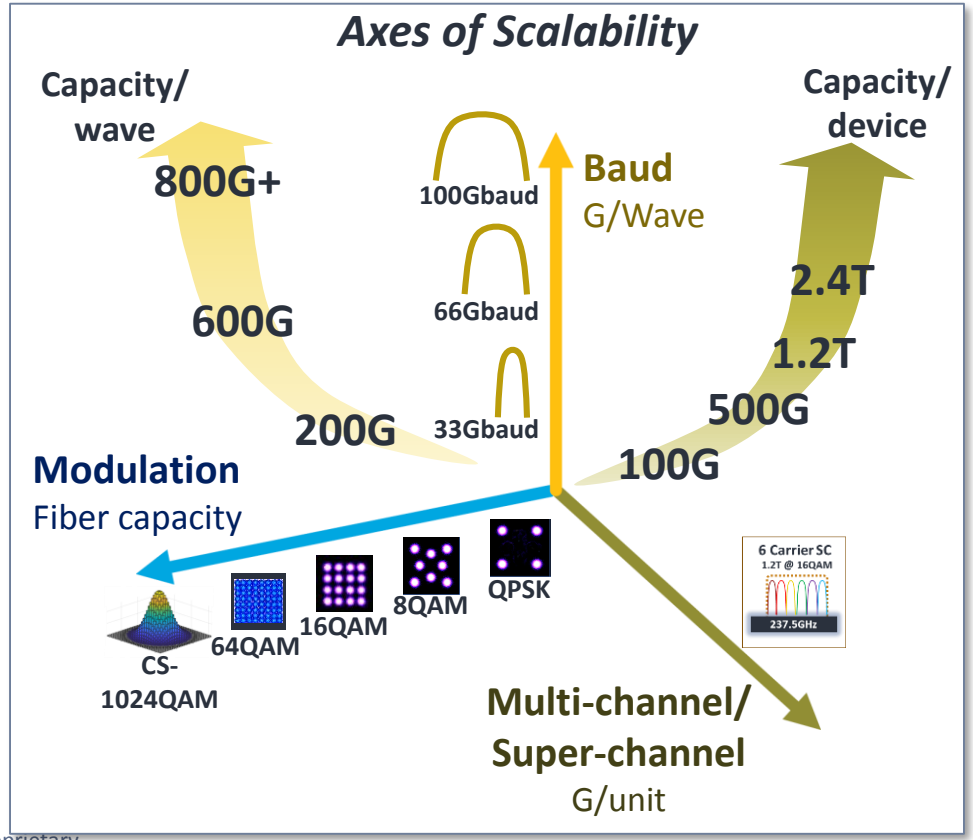
Shifting Focus to High Baud Rate, Integration

Fiber capacity near Shannon limit: diminishing returns from modulation

Constellation shaping (CS) for extended reach – effective CS requires next Si node



Unique Infinera optical engine integration
- **PIC+DSP tightly integrated**
- **co-design/co-packaging**

Unique Infinera advantages:
- **photonic integration**
- **super-channels**

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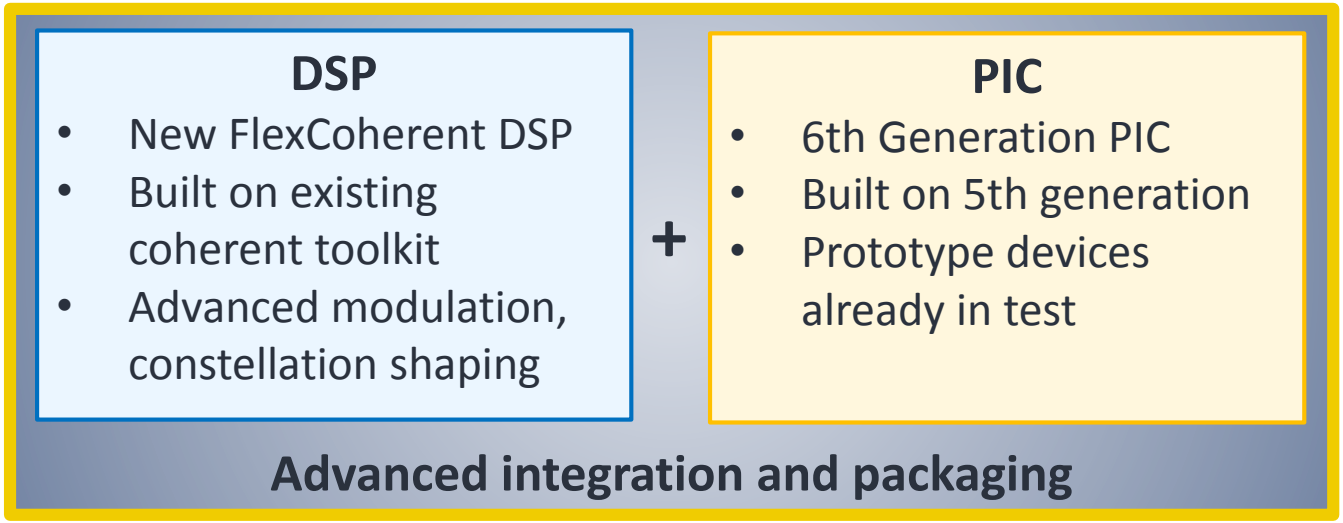
ICE6: 800G/wave Leadership

Highly Integrated Optical Engine

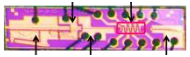


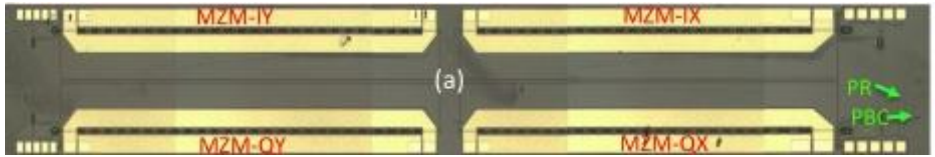
- Leading the push to 88-100 Gbaud through superior integration
- 800G+/wave for metro DCI, 2X industry standard target

Photonic Integration: Size, Cost & Materials Matter

"Silicon Photonics"

1 Channel





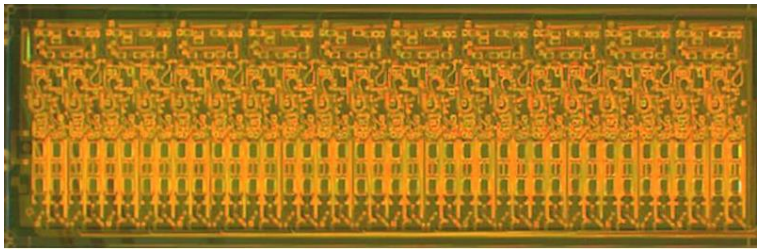
Widely Tunable Laser
~0.8mm² per channel
5 Integrated Functions

SiP 33Gb/s Coherent Modulator
~18mm² per channel
~50 Integrated Functions

Infinera PIC

1 Channel

10 Channels



500 Gb/s Transmit PIC
~3mm² per channel
~440 Integrated Functions

Chip Sizes To Scale

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Full Vertical Integration Required at High Speed

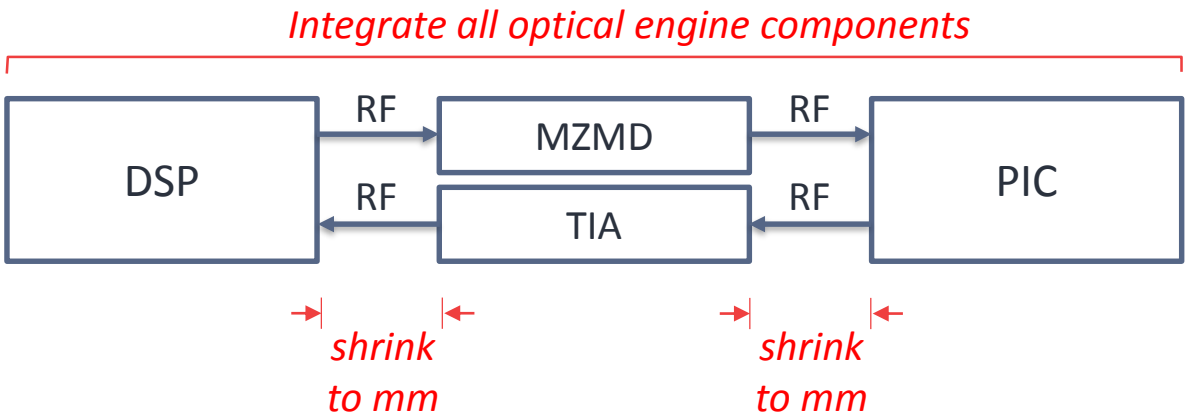
Requirements at 100Gbaud+

RF signal integrity exponentially hard. Requires:

- **Femtosecond** timing:
  Tolerance must be <100 fs (10^{-13} sec)
- **Millimeter** interconnects:
  Inter-device interconnects must be more robust, shrink to few mm

Conclusion

- DSP & PIC must be co-developed with co-packaging in mind
- Full vertical integration is required
- Infinera is best positioned to succeed



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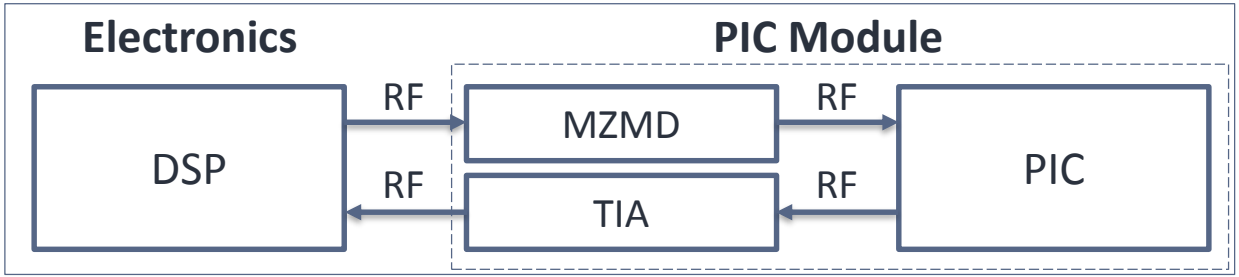
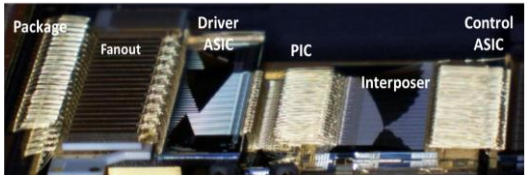
Integration & Packaging for High Speed

Optical Engine



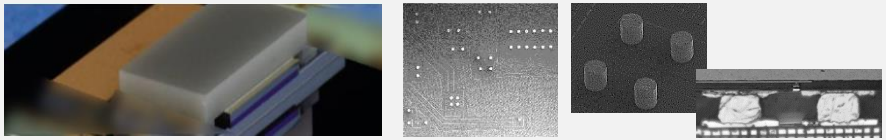
infinera ICE4
33 Gbaud

wirebonding



infinera ICE5
66 Gbaud

Interposer, >1000 interconnects
First commercial
III-V (InP) IC flip-chip



infinera ICE6
88+ Gbaud

DSP + PIC
Co-designed, co-packaged, tightly integrated module

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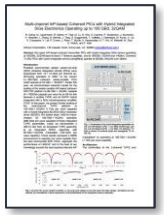
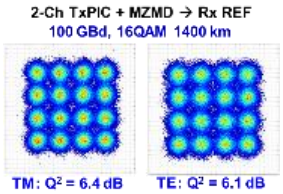
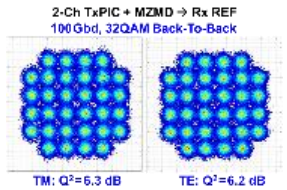
ICE6 & Beyond: Progress & Proof Points (2017)



Leading 100 Gbaud Milestones



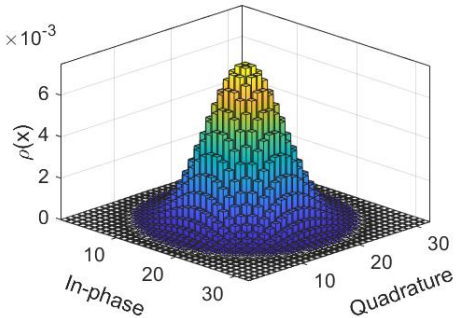
100 Gbaud 16QAM link
600G over 1400 km

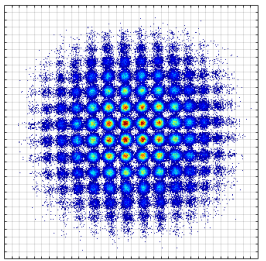


100GBaud 32QAM
800G with path to 1T

Leading-edge Constellation Shaping: CS-1024QAM

- 1.32Tb/s: highest coded bit rate ever reported
- Moving ever closer to Shannon limit
- Effective CS requires next Si node (ICE6 target)





Achieved with ICE6 prototype PICs

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High Speed Checklist: Advantage Infinera

Building Blocks In House	Infinera	Module Suppliers		System Vendors				
		1	2	1	2	3	4	5
Advanced Coherent DSP	✓	✓	*	✓	✓	✗	✗	✗
Optical engine module packaging	✓	✓	*	✗	✗	✗	✗	✗
InP optics	✓	✗	✗	✗	✗	✗	✗	✗
InP photonic integration	✓	✗	✗	✗	✗	✗	✗	✗
III-IV IC flip chip	✓	✗	✗	✗	✗	✗	✗	✗

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Infinera Optical Leadership: Customers Win

Leading Optical Performance

- ICE4 proven performance in the field
- ICE5 leading 600G, world's only 2.4T engine
- ICE6 on track, Infinera positioned to lead

+

Cloud Scale

Instant Bandwidth, Instant Network
Sliceable super-channels, Open ICE, Automation,

+

The Infinera Experience

Time as a Weapon, World-class quality
Customer-centric focus, Simplicity & ease of use

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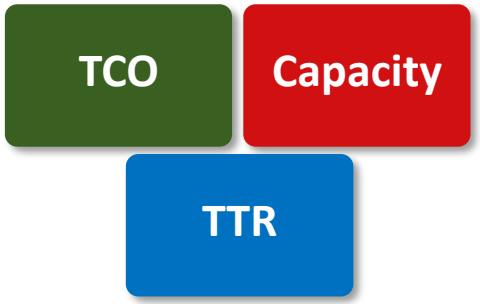

Customers Win

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