

Event Program

Executive Forum

Connecting and Inspiring Leaders
in Optical Communications

18 March 2013

Anaheim Hilton • Anaheim, California

Collocated with OFC/NFOEC

Drive transformational change

Keynote Speakers:



Najam Ahmad
*Director, Network Engineering,
Facebook*



Pieter Poll
*Senior Vice President –
National Network Planning,
Engineering, and Construction,
CenturyLink*

POST-EVENT MATERIALS

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EXECUTIVE FORUM 2013

Connecting and Inspiring Leaders in Optical Communications

Hilton Anaheim Hotel
Anaheim, California, USA
18 March 2013



The 2013 Executive Forum, held in conjunction with OFC/NFOEC, provides industry executives with networking opportunities, insights, and analysis from the field's leading business and financial experts on tomorrow's trends and opportunities.

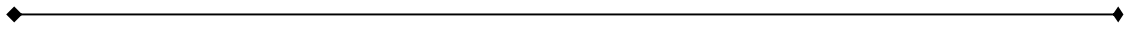


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**Executive Forum 2013
Connecting and Inspiring Leaders in Optical Communications**

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The 2013 Executive Forum is produced by OSA

The Optical Society

Uniting more than 180,000 professionals from 175 countries, the Optical Society ([OSA](http://www.osa.org)) brings together the global optics community through its programs and initiatives. Since 1916 OSA has worked to advance the common interests of the field, providing educational resources to the scientists, engineers and business leaders who work in the field by promoting the science of light and the advanced technologies made possible by optics and photonics. OSA publications, events, technical groups and programs foster optics knowledge and scientific collaboration among all those with an interest in optics and photonics. For more information, visit www.osa.org.

AGENDA AT-A-GLANCE

18 March 2013

- | | |
|---------------|---|
| 07:00 – 12:00 | Registration |
| 07:30 – 08:30 | Breakfast |
| 08:30 – 08:45 | Welcome and Opening Remarks |
| 08:45 – 09:30 | Keynote Speaker I: Pieter Poll, Senior Vice President – National Network Planning, Engineering and Construction, <i>CenturyLink</i> |
| 09:30 – 10:45 | Panel 1: Building Massively Scalable Optical Networks |
| 10:45 – 11:00 | Coffee Break – Sponsored by: Oclaro, Inc. |
| 11:00 – 12:15 | Panel 2: The Future of Broadband Access Networks: Towards 1Gbps and Beyond? |
| 12:15 – 13:30 | Networking Lunch |
| 13:30 – 14:15 | Keynote Speaker II: Najam Ahmad, Director, Network Engineer, <i>Facebook</i> |
| 14:15 – 15:45 | Panel 3: The Adaptable Optical Layer: Software’s Impact on Optical Communications
Coffee Break |
| 15:45 – 16:00 | Coffee Break |
| 16:00 – 17:30 | Panel 4: The Future of the Optical Component Industry – Driven by Technology Challenges or in Need of a Business Model Tune-Up |
| 17:30 | Closing Comments |
| 17:30 – 19:30 | Networking Reception – Sponsored by: Picometrix |

KEYNOTE PRESENTATION I

18 March 2013; 08:45 – 09:30

Pieter Poll, Senior Vice President – National Network Planning, Engineering, and Construction, CenturyLink

The Optical Backbone – What do we need?

Now that carriers are well into deployments of 100G wavelengths, what is the next big thing? Please join Dr. Poll as he discusses traffic demands and trends that carriers are observing. The current marketplace dictates that optical unit costs must scale to provide for relatively flat capex. Does this remain true in the near future, and what does that mean for the carrier industry and the equipment and component supplier industries? What technologies do the carriers want to deploy into the network that they can't today?

Speaker Biography

With more than 25 years of experience in the industry, Pieter Poll oversees the planning, engineering and construction of CenturyLink's national and international networks to support capabilities for hosting; data, transport and fiber networks; VoIP, cloud-based services, and distributed functions. He also leads a team that performs vendor technology management on behalf of Network Services.

Previously, Poll served as CTO for Qwest and was responsible for the strategic technology direction of the company. He oversaw the evolution of the network and technologies used to manage the network layers and drive future products and services.

Poll also served as Vice President of Corporate Strategy for Mahi Networks and was responsible for corporate technology and strategy. He played an integral role at AT&T Bell Laboratories in the development of architectural and evolutionary plans for digital switches and the AT&T long-distance network.

Poll currently serves on the Board of Directors of the Center for Telecom Management at the University of Southern California's Marshall School of Business. He participates on the Advisory Board for the Interdisciplinary Telecommunications Program at the University of Colorado at Boulder. In 2009, he was awarded the President's Volunteer Service Award.

About CenturyLink

CenturyLink is the third largest telecommunications company in the United States and is recognized as a leader in the network services market by technology industry analyst firms. The company is a global leader in cloud infrastructure and hosted IT solutions for enterprise customers. CenturyLink provides data, voice and managed services in local, national and select international markets through its high-quality advanced fiber optic network and multiple data centers for businesses and consumers. The company also

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offers advanced entertainment services under the CenturyLink™ Prism™ TV and DIRECTV brands. Headquartered in Monroe, La., CenturyLink is an S&P 500 company and is included among the Fortune 500 list of America's largest corporations. For more information, visit www.centurylink.com.

PANEL DISCUSSIONS

Panel 1: Building Massively Scalable Optical Networks

18 March 2013; 09:30 – 10:45

Moderator

- ❖ Per Hansen, Vice President Product Marketing, Optical Networks Solutions Business Unit, *Oclaro, Inc.*

Speakers

- ❖ Stuart Elby, Chief Technologist of Digital Media Services, *Verizon*
- ❖ Mattias Fridstrom, Vice President & Head of Technology, *TeliaSonera International Carrier*
- ❖ Vijay Gill, General Manager, Global Foundation Services, *Microsoft*
- ❖ David Welch, Executive Vice President & Chief Strategy Officer, *Infinera*

Panel Description

The industry has now reached an inflection point where the majority of operators are building out or planning for transport networks at 100G. With traffic continuing to grow due to mobile, video and cloud services, should carriers make incremental upgrades to reach 100G or take this opportunity to fundamentally re-architect and reboot their networks for seamless transition to 400G/500G/1T super-channels? Should they converge WDM and OTN/MPLS switching functions into a single layer to help manage these larger pools of bandwidth while reducing costs? Does the requirement of having to move large amounts of data between any-to-any remote data centers affect this decision? How will architectures and transport platforms evolve to meet the need for scale while reducing costs and in turn what components will star in these new approaches? What is the role of photonic integration and electronic integration on this journey? This panel will discuss network architecture approaches, transport systems and the component trends that will enable the industry to achieve cost-effective terabit networking.

Panel 2: The Future of Broadband Access Networks: Towards 1Gbps and Beyond?

18 March 2013; 11:00 – 12:15

Moderator

- ❖ Stephen Hardy, Editorial Director/Associate Publisher, *Lightwave*

Speakers

- ❖ Ed Harstead, Leader, Technology Excellence Center, Chief Technology Officer, Fixed Networks Division, *Alcatel-Lucent*
- ❖ Milo Medin, Vice President, Access Services, *Google*
- ❖ Jorge D. Salinger, Vice President, Access Network Architecture, *Comcast Cable*

Panel Description

The optical component industry is a key contributor to addressing some of the most pressing communication needs: enabling higher bandwidth on existing fiber infrastructure and delivering higher bandwidth to end users at lower cost per bit. However, the optical component industry continues to see significant margin pressure, which jeopardizes its ability to invest in new technology critical to meet those needs. Higher levels of integration – at the chip and gold box level – are important technologies that will be driven by the optical component industry. Do they offer a payoff commensurate with the investments that must be made to make it happen? Or is the industry's business model in need of a comprehensive tune-up? During this panel, executives will address these and other questions important to the future of the industry.

KEYNOTE PRESENTATION II

18 March 2013; 13:30 – 14:15

Najam Ahmad, Director, Network Engineer, *Facebook*

Speaker Biography

A director of engineering at Facebook, Najam Ahmad oversees all aspects of the development and operation of a global network infrastructure that serves more than a billion people around the world.

Prior to joining Facebook, Ahmad was the general manager of global networking services at Microsoft. In that role, he was responsible for the overall architecture, implementation, and operations of Microsoft's global online network. His other experience includes management and engineering roles at MCI/UUNET and Netrix Corporation.

Ahmad holds an MS in telecommunication protocols and computer science from The George Washington University and a BE in Electrical Engineering from the NED University of Engineering and Technology.

About Facebook

Founded in 2004, Facebook's mission is to make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them.

Panel 3: The Adaptable Optical Layer: Software's Impact on Optical Communications

18 March 2013; 14:15 – 15:45

Moderators

- ❖ Dana Cooperson, Vice President and Practice Leader, Network Infrastructure, *Ovum*
- ❖ Eve Griliches, Vice President Optical Networking, *ACG Research*

Speakers

- ❖ Stephen B. Alexander, Senior Vice President and Chief Technology Officer, *Ciena*
- ❖ David Husak, CEO and Founder, *Plexxi*
- ❖ Robert Keys, Chief Technology Officer, *BTI Systems*
- ❖ Bikash Koley, Principal Architect and Manager, Network Architecture, *Google*
- ❖ David Ward, Chief Architect & CTO, Engineering, *Cisco Systems*

Panel Description

What will the impact of software-defined networking (SDN) be on optical communications, and when will it be a factor? More generally, what impact is the increased role of software—from control plane to remotely programmable hardware—having on the optical communications market, including cost savings and monetization opportunities? Speakers will comment on these and other questions as they explore software's impact on optical communications.

Panel 4: The Future of the Optical Component Industry – Driven by Technology Challenges or in Need of a Business Model Tune-Up

18 March 2013; 16:00 – 17:30

Moderator

- ❖ Gurinder Parhar, Chief Business Officer, *Triple Ring Technologies*

Speakers

- ❖ Alain Couder, Chairman of the Board & CEO, *Oclaro, Inc.*
- ❖ Bill Gartner, Vice President and General Manager of High End Routing & Optical Group, *Cisco Systems*
- ❖ Jim Hjartarson, CEO, *OneChip Photonics Inc.*
- ❖ Karen Liu, Principal Analyst, Components, *Ovum*
- ❖ Jerry Rawls, Executive Chairman, *Finisar*

Panel Description

According to the latest ITU report, one third of the world's population is now active Internet users. Globally, 10% of the population has access to wired broadband. Increasing broadband penetration in the last several years has resulted in dramatic growth in innovative, bandwidth-intensive applications that are being embraced by consumers. Coupled with this consumer trend is the migration from local compute/storage model to a cloud computing paradigm. Broadband penetration and technology continues to remain the enabler and the bottleneck for the new innovative applications and services that users can use. This panel will explore the challenges and opportunities with the evolving broadband landscape, the role of broadband as application enabler, the evolving business model of the broadband services and equipment suppliers and the future of wired vs. wireless broadband.

SPEAKER AND COMPANY PROFILES

Stephen B. Alexander, Senior Vice President and Chief Technology Officer, *Ciena*

With more than 20 years of telecom experience, Stephen Alexander is currently serving as Ciena's Senior Vice President and Chief Technology Officer. Alexander has held a number of positions since joining the Company in 1994, including General Manager of Ciena's Transport & Switching and Data Networking business units, Vice President of Transport Products and Director of Lightwave Systems.

From 1982 until joining Ciena, Alexander was employed at MIT Lincoln Laboratory, where he last held the position of Assistant Leader of the Optical Communications Technology Group. Mr. Alexander is an editor for the Journal of Optical Communications and Networking. He has served as a member of the Federal Communications Commission Technological Advisory Council, as an Associate Editor for the Journal of Lightwave Technology, as a member of the IEEE / LEOS Board of Governors, and was a General Chair of the conference on Optical Fiber Communication (OFC) in 1997.

Alexander received both his B.S. and M.S. degrees in electrical engineering from the Georgia Institute of Technology.

About Ciena

Ciena Corporation, the network specialist, offers leading network infrastructure solutions, intelligent software and a comprehensive services practice. Our portfolio of software-centric optical and Ethernet platforms combines network element programmability, operating system commonality and management unification, and Carrier Ethernet-based transformation to enable our customers to change the way they compete. Our solutions form the foundation of many of the largest, most reliable and sophisticated service provider, enterprise, government, and research and education networks across the globe.



Alain Couder, Chairman of the Board and CEO, *Oclaro, Inc.*

Alain Couder has served as Chairman and CEO of Oclaro since July 2011 and was a director and CEO from August 2007 to July 2011. Prior to joining Oclaro in 2007, Couder was a Venture Advisor to Sofinnova Ventures, Inc., a venture capital company. Previously, he has held President and CEO positions at software and IP companies including Solid Information Technology Inc., Confluent Software, Inc., and IP Dynamics, Inc. He also served as COO of Agilent Technologies, Inc., a measurement and analysis company. Earlier in his career, Couder worked for Packard-Bell NEC, Groupe Bull, HP and IBM. He was previously a director at Sanmina-SCI.

Couder earned a master's degree in electrical engineering from the Ecole Supérieure d'Electricité in Paris.

About Oclaro, Inc.

Oclaro, Inc. is one of the world's largest suppliers of optical components, modules and subsystems for the global optical communications, industrial and consumer laser markets. Through in-house development and a series of strategic acquisitions and mergers, the company maintains one of the most extensive and vertically-integrated product portfolios in the fiber optics industry.



Stuart Elby, Chief Technologist of Digital Media Services, Verizon

Stuart Elby, Chief Technologist of Verizon Digital Media Services, is responsible for the overall solutions architecture, design and development of the media distribution platform supporting VDMS products.

Formerly, Elby was responsible for developing Verizon's target network architecture and driving the industry to converge towards this target. He also managed the design and specification of Verizon's core services platforms including VoIP / IMS, video, cloud computing, and Verizon Wireless' open network service delivery platform.

Prior to joining Verizon, Elby was a Research Associate at the NSF Center for Telecommunications Research at Columbia University performing R&D in all-optical networks and developing ATM/WDM platforms. In 1985, at a laser surgery start-up, Lasers for Medicine Inc., he was responsible for FDA clinical trials, product development, and brought the first disposal plastic fiber-optic system to the medical market. In 1982, he worked at StorageTek, contributing to the development of the first commercial optical disk storage system.

Elby received a BS degree in Optical Engineering from the University of Rochester, NY in 1982 and received a MSEE and Ph.D. from Columbia University in 1989 and 1994, respectively. He serves on the advisory boards of several university/government/industry consortia. He lives with his wife and kids just south of the middle of nowhere, NJ.

About Verizon

Verizon, headquartered in New York, is a global leader in delivering broadband and other wireless and wireline communications services to consumer, business, government, and wholesale customers. Verizon Wireless operates America's most reliable wireless network, with nearly 96 million retail customers nationwide. Verizon also provides converged communications, information and entertainment services over America's most advanced fiber-optic network, and delivers integrated business solutions to customers in more than 150 countries, including all of the Fortune 500. A Dow 30 company with \$111 billion in 2011 revenues, Verizon employs a diverse workforce of 184,500. For more information, visit www.verizon.com.



Mattias Fridstrom, Vice President & Head of Technology, *TeliaSonera International Carrier*

Mattias Fridström joined Telia AB in December 1996 as Senior Project Manager for the development and installation of many international submarine cables around the world. In 1998 Fridstrom assumed the role within Telia International Carrier as head of the construction and implementation of the International Network within Europe and USA for the carrier business. Between 2003 and 2010 he first headed up the Product Management side of TeliaSonera International Carrier for Voice, IP, Capacity and Infrastructure related services and then he had the strategic responsibility for the complete and combined National and International Wholesale Product Portfolio within the TeliaSonera Group. Since January 2011 he has been the CTO of TeliaSonera International Carrier.

Fridstrom holds a M.Sc. in Electrical Engineering from University of Wollongong, Australia.

About TeliaSonera International Carrier

TeliaSonera International Carrier owns and operates one of the world's most extensive fiber backbones. Our mission is to provide exceptional network infrastructure and services – empowering individuals, businesses and societies to execute their most critical activities. By working close to our customers we make big ideas happen at the speed of fiber.



Bill Gartner, Vice President and General Manager of High End Routing & Optical Group, *Cisco Systems*

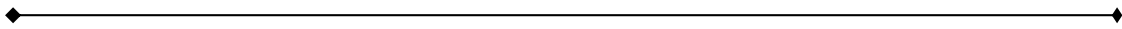
Bill Gartner is Vice President/General Manager of Cisco's High End Routing & Optical Group, which includes Cisco's portfolio of DWDM products as well as Cisco's High End routers including CRS and ASR9K. He has P&L responsibility for this business and is responsible for strategic direction, product development and new product introduction.

Prior to joining Cisco, Gartner was Chief Operating Officer of Meriton Networks (acquired by Xtera Networks). Prior to Meriton, he served as President and COO of Mahi Networks and COO of Photuris. Before joining Photuris, he was VP/GM of Lucent's Optical Networking Systems business, responsible for Metro, Access, and Long Haul DWDM Products.

Gartner has a bachelor's degree in Electrical Engineering from Georgia Tech, a Master's degree in Electrical Engineering from Cornell University, and an Executive Master's in Technology Management from University of Pennsylvania/Wharton. He is a University of Pennsylvania Moore Fellow and holds three patents.

About Cisco Systems

Cisco Systems, Inc. is the worldwide leader in networking for the Internet. Today, networks are an essential part of business, education, government and home communications, and Cisco Internet Protocol-based (IP) networking solutions are the foundation of these networks. Cisco hardware, software, and service offerings are used to create Internet solutions that allow individuals, companies, and countries to increase productivity, improve customer satisfaction and strengthen competitive advantage. The Cisco name has become synonymous with the Internet, as well as with the productivity improvements that Internet business solutions provide. At Cisco, our vision is to change the way people work, live, play and learn. Cisco (NASDAQ:CSCO) enables people to make powerful connections - whether in business, education, philanthropy, or creativity. Cisco hardware, software, and service offerings are used to create the Internet solutions that make networks possible - providing easy access to information anywhere, at any time.



Vijay Gill, General Manager, Global Foundation Services, *Microsoft*

Vijay Gill leads the Internet backbone and edge teams for Microsoft's Global Foundation Services (GFS) team that supports the foundation infrastructure for over 200 Microsoft online services for consumers and businesses worldwide.

In May 2011, Gill joined Microsoft as a Director of Engineering responsible for the Internet backbone, dark fiber, optical, and IP Services for GFS. He was promoted to GM in 2012.

Prior to joining Microsoft, Gill was the leader of the Backbone Engineering, Architecture, Network Security and Network Labs at Google, and was responsible for the network architecture encompassing the dark fiber network, optical, MPLS and edge networks, as well as the data center network design. He was instrumental in driving the networking design for the global backbone and pioneered the business case and implementation of secondary data center backbones, Google's SDN and the CDN, which is now one of the largest in the world.

He also spent five years at AOL, where he managed the network, peering and CDN teams for the ATDN network, a global backbone for AOL and Time Warner Cable. Prior to AOL, Gill was the networking manager at AboveNet, responsible for global network design and architecture. Before AboveNet, Vijay was a lead engineer at Verizon/UUNET, where he led the multicast and MPLS projects.

Gill holds multiple U.S. patents filed and has published several technical papers in various journals and conference proceedings, including seven IETF RFCs on multiple topics, including routing, security, multi-homing, MPLS and IPv6. He is frequently quoted in the press and is a featured speaker on network trends in the industry.

In 2007 and 2010, he was the recipient of the prestigious Google OC and EMG awards for exceptional work for his contributions to the CDN and bandwidth projects.

About Microsoft

Microsoft runs eight business divisions:

Online Services Division: Microsoft's search, portal, advertising and personal communications services, including online information offerings such as Bing and the MSN portals and channels.

Server and Tools Business: Microsoft infrastructure software, developer tools and cloud platform, including products such as Windows Server, SQL Server, Visual Studio, System Center and the Windows Azure Platform.

Microsoft Business Solutions: A portfolio of Microsoft Dynamics products and services, as well as Microsoft Health Solutions.

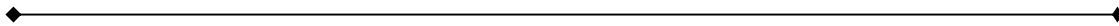
Microsoft Office Division: Productivity products and services, including Office, Exchange, SharePoint, Lync, Project, Visio, and Microsoft's speech technology investments.

Interactive Entertainment Business: Key entertainment experiences that span gaming, music and video across multiple screens, including Xbox 360, Xbox LIVE, the controller-free Kinect for Xbox 360, Zune Music and Video, and Mediaroom, as well as PC and mobile interactive entertainment.

Windows Phone Division: Microsoft software and services for Windows Phones worldwide.

Windows & Windows Live Division: All Windows businesses, including Windows, Windows Live and Internet Explorer.

Skype: A division of Microsoft, transforming communications for computers, mobile devices and the connected living room.



Ed Harstead, Leader, Technology Excellence Center, Chief Technology Officer, Fixed Networks Division, *Alcatel-Lucent*

Ed Harstead's current role at Alcatel-Lucent is Lead Technologist for the Chief Technology Office of the Fixed Networks Division. His primary topics include next gen PON systems, open access networks, bandwidth dimensioning, and wireless backhaul. During the 2000s, Harstead was an R&D-facing and customer-facing Senior Product Line Manager for both DWDM and Broadband Access products. In the 1990s, as a systems engineering manager, he led R&D efforts in first generation APON/BPON and WDM PON technologies, while taking the lead role for Lucent in the FSAN standardization forum. Harstead received the MS Mechanical Engineering and MS Electrical Engineering degrees from Columbia University, New York City.

He has been awarded four patents, has published over a dozen papers in technical conferences and journals, has authored the chapter on Optical Access Networks in the textbook Optical Fiber Telecommunications, and currently reviews submissions to IEEE on the subject of PON.

About Alcatel-Lucent

The telecommunications sector today is undergoing rapid transition – adapting to new realities, new demands and new business models. Alcatel-Lucent is at the forefront of this transformation. The long-trusted partner of communications service providers, enterprises, strategic industries and governments around the world, Alcatel-Lucent delivers the innovation our customers need to stay ahead, to be competitive and to meet their challenges and their opportunities.

To create. To move at the speed of ideas. In the laboratory and in the marketplace.

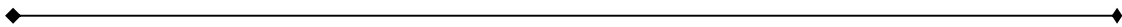
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A leader in mobile, fixed, IP and optics technologies, and a pioneer in applications and services, Alcatel-Lucent was named one of *MIT Technology Review's* 2012 Top 50 list of the "World's Most Innovative Companies" for breakthroughs such as lightRadio, which cuts power consumption and operating costs on wireless networks while delivering lightning fast Internet access. Through such innovations, Alcatel-Lucent is making communications more sustainable, more affordable and more accessible as we pursue our mission - Realizing the Potential of a Connected World.

Alcatel-Lucent is the home of Bell Labs, one of the world's foremost centers of research and innovation in networking and communications technology. We bring an unmatched heritage of ideas and execution to the challenge of realizing the potential of a connected world. Our customers turn to us for our ability to deliver on their future.

Alcatel-Lucent has a widespread presence across the globe. As one of the most experienced and widely deployed global services organizations in the industry, Alcatel-Lucent is an established partner with global reach.

Alcatel-Lucent achieved revenues of Euro 15.3 billion in 2011 and is incorporated in France and headquartered in Paris.

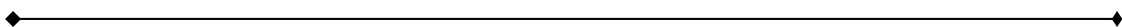


Jim Hjartarson, CEO, *OneChip Photonics Inc.*

Jim Hjartarson is a seasoned telecommunications industry veteran with more than 30 years of industry experience. Most recently, he was a co-founder and CEO of Catena Networks, later acquired by Ciena Corporation, where he was SVP of the Broadband Access Group. Previously, Jim was co-founder and VP of the Telecommunications Design Centre at Cadence Design Systems. Before then, he served as Director of Access Peripheral Design at Nortel Networks. In April 2010, Hjartarson was named to the Board of Directors of the Telecommunications Industry Association (TIA). Previously, he served two terms on the TIA's Board.

About OneChip Photonics Inc.

OneChip Photonics is a privately held company, headquartered in Ottawa, Canada, that develops and manufactures low-cost, high-performance optical modules and transceivers – based on monolithic Photonic Integrated Circuits (PICs) in Indium Phosphide (InP) – for access networks and other mass-market broadband telecom and datacom applications. OneChip's PIC-based Passive Optical Network (PON) Bi-directional Optical Sub-Assemblies (BOSAs) and transceivers will help system providers deploy Fiber-to-the-x (FTTx) more cost-effectively than ever before and meet consumer and business demand for high-bandwidth voice, data and video services. OneChip now is extending its PIC technology to the data communications market, where it can greatly reduce the cost and footprint of optical modules and boost optical interconnect speeds to 40Gbps, 100Gbps and beyond. For more information, please contact OneChip at +1 (613) 226-6117, +1 (866) 652-4627 (toll-free), info@onechipphotonics.com or sales@onechipphotonics.com, or visit our Web site at www.onechipphotonics.com.



David Husak, CEO and Founder, Plexxi, Inc.

David Husak has been revolutionizing enterprise networks his entire career. Prior to Plexxi, Husak co-founded Reva Systems Corp. in 2003 and served as its Chief Technical Officer. He had previously founded C-Port Corp., where he was CTO. C-Port delivered the category-creating C-5 network processor in 1999. Prior to that, he was the founding engineer and system architect at Synernetics, the company that delivered the world's first enterprise-scale switched-Ethernet systems. Husak started his career at Apollo Computer. He has 13 patents covering a wide range of networking and communication engineering inventions, with several more pending. He holds a degree from MIT.

About Plexxi, Inc.

Plexxi's Affinity Networking is a fully integrated SDN-based Ethernet switching system for clouds and data centers. The Plexxi SDN software understands inter- and intra-workload communication needs (affinities) in data centers and leverages an innovative high density optically multiplexed Ethernet fabric to directly implement the optimal network at any given time.

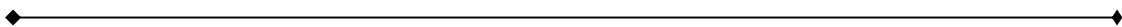


Robert Keys, Chief Technology Officer, BTI Systems

Robert Keys brings over 20 years of communications engineering and leadership experience to his role as Chief Technology Officer. Prior to joining BTI Systems, Keys served as Chief Engineer for Bookham (now Oclaro, Inc.), defining the company's technical roadmap and strategic investment requirements. Prior to Bookham, he held various influential roles in the development organization at Nortel, where he was responsible for the successful delivery of multiple optical products to market. Keys is a well-known authority in the optical industry, and is a frequently sought-after speaker. He has more than 12 patents granted in the area of optical communications. Robert has a Ph.D & M.Sc in Electronics and Electrical Engineering and a B.Sc in Physics from the University of Glasgow.

About BTI Systems

BTI Systems™ is a networking company delivering innovative software and packet optical solutions that empower service and content providers to rapidly scale capacity and profitably deliver high-value services for the new generation of consumers and businesses demanding mobility, Internet video, and cloud communications. OEM agreements and partnerships with industry-leading companies like Fujitsu further strengthen these solutions. More than 350 customers rely on BTI to monetize, accelerate and simplify service delivery. Headquartered in North America, BTI operates regional sales, marketing and R&D centers of excellence throughout the world.



Bikash Koley, Principal Architect and Manager, Network Architecture, Google

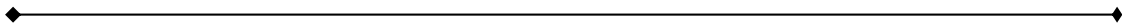
Bikash Koley is the Principal Architect and manager of the Network Architecture team at Google. Koely is responsible for scaling optimization and automation of the network layer of Google's cloud infrastructure. He also oversees the network technology road-map at Google in order to support all the present and future Google services. Prior to Google, Koley was the CTO of Qstreams Networks, a company he co-founded. He also spent several years at Ciena Corporation in various technical roles developing DWDM and Ethernet technologies.

Koley is a frequent speaker in conferences and industry forums and is an active participant in various networking standard bodies.

He has received eight patents related to various optical and networking technologies. He received a BTech from IIT, India; and MS and PhD degrees from the University of Maryland at College Park, all in Electrical Engineering.

About Google

Google's innovative search technologies connect millions of people around the world with information every day. Founded in 1998 by Stanford Ph.D. students Larry Page and Sergey Brin, Google today is a top web property in all major global markets. Google's targeted advertising program provides businesses of all sizes with measurable results, while enhancing the overall web experience for users. Google is headquartered in Silicon Valley with offices throughout the Americas, Europe and Asia.



Karen Liu, Principal Analyst, Components, Ovum

Karen Liu is responsible for market analysis of new telecoms technologies. Recent report topics include 40 Gbps/100 Gbps interfaces, silicon photonics and industry profitability. Liu also provides strategic advice, competitive analysis, market sizing, and industry structure analysis on a custom project basis. Prior projects ranged over a variety of hardware topics including ATCA platforms, tunable lasers, large matrix optical switches, plastic optical fibers, home networking, and IPTV solutions. She is a frequent industry speaker.

Prior to joining Ovum, she architected DWDM networking products at Tellabs and IBM. The experience gave her an appreciation for the interaction between enabling component technology and advances in networks and systems architecture.

Liu received a PhD in applied physics from Stanford University in the field of fiber optics, and a BSE in mechanical engineering from Princeton University.

About Ovum

Ovum provides clients with independent and objective analysis that enables them to make better business and technology decisions. Our research draws upon over 400,000 interviews a year with business and technology, telecoms and sourcing decision-makers, giving Ovum and our clients unparalleled insight not only into business requirements but also the technology that organizations must support. Ovum is an Informa business.



Milo Medin, Vice President, Access Services, Google

Milo Medin has been part of the Internet development community for more than 25 years. Medin is currently the vice president of access services at Google, where he oversees the company's Gigabit Fiber to the Home project and other efforts to improve access to the Internet.

Prior to joining Google in 2010, he was founder and CTO of M2Z Networks, a company that sought to deploy a national broadband wireless network system that will expand consumer network access by providing nationwide portable broadband service that was also to help bridge the digital divide.

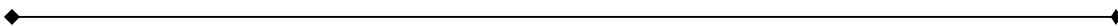
Medin was co-founder and the Chief Technology Officer of Excite@Home, where he led the development of the company's national infrastructure, and helped deliver the first large scale residential broadband access service in partnership with major cable operators.

Earlier, he worked at NASA's Ames Research Center, where he managed the primary west coast interconnect for the Internet, and architected and managed the global NASA Science Internet. Before NASA, while enrolled at UC Berkeley, he worked at the Lawrence Livermore National Laboratory, programming high performance computers in support of various Defense Programs.

Medin holds a bachelor's degree in computer science from UC Berkeley. He has participated in a number of public policy forums, including two National Academy of Sciences panels and a variety of TechNet initiatives, and given testimony in Congress and before the Federal Communications Commission on Broadband technology policy. He has received two patents in the field of network access technology.

About Google

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Jerry S. Rawls, Executive Chairman, *Finisar*

Jerry Rawls was elected Chairman of the Board in 2006. He has also served as President, Chief Executive Officer, and a member of the Board of Directors for Finisar Corporation from 1989 to 2008. From 1968 to 1989, he was employed by Raychem Corporation, a materials science and engineering company. At Raychem he held various management positions including Manager of Product Marketing, National Sales Manager, General Manager of the Aerospace Products Division, and General Manager of the Interconnection Systems Division. Rawls holds a B.S. in Mechanical Engineering from Texas Tech University and an M.S. in Industrial Administration from the Krannert Graduate School of Management at Purdue University. He is a member of Tau Beta Pi and Pi Tau Sigma engineering honorary societies.

About Finisar

Finisar Corporation is a global technology leader in optical communications components and subsystems. These products enable high-speed voice, video and data communications for networking, storage, wireless, and cable TV applications. For the past 25 years, Finisar has provided critical breakthroughs in optics technologies and has supplied system manufacturers with the production volumes needed to meet the exploding demand for network bandwidth and storage. Finisar's industry-leading optical products include transceivers/transponders, active cables, WSS ROADMs, amplifiers, optical instruments, and active and passive components. In 2008, Finisar merged with Optium Corporation, creating the world's largest supplier of optical communication components and subsystems. The company now delivers the industry's broadest product portfolio backed by world-class quality and reliability. Finisar's vertically integrated business model is ideally suited for delivering massive production volumes while providing ready access to most of the critical technologies needed to develop the next generation of products.



Jorge D. Salinger, Vice President, Access Network Architecture, *Comcast Cable*

As Vice President of Access Network Architecture at Comcast Cable, Jorge Salinger is responsible for the company's video, high-speed data and voice access network strategy and architecture. In this role, Salinger was the key inventor of CCAP, and led the creation of the CCAP architecture at Comcast, and the development of the CCAP specifications with a team of MSO peers and industry organizations. He was also the inventor and developer of the multi-dwelling MDTA, the QAM-to-QAM, the DMon probe, and the QAM-to-IP devices and specifications.

Salinger was recognized as the 2011 Person of the Year by CED and inducted into the Hall of Fame by CableFAX/Communications Technology.

Currently, he is Comcast's technical lead in the DOCSIS 3.1 and EPoC specifications, and is Comcast's member of the DOCSIS Certification Board.

Salinger has over 20 years of experience in telecommunications and Cable, participating of new technology development and operations in areas of data, voice and video services.

Prior to Comcast, he was President of Consulting at YAS Broadband Corporation where he served as Executive Consultant for many US and international MSOs assisting with technology strategies in all service areas. Jorge also directed the Broadband Access Certification programs at CableLabs, including DOCSIS, CableHome and PacketCable technologies.

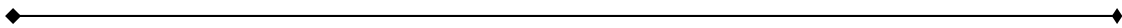
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Salinger was previously Director of Digital Services at Adelphia Cable, Director of Telecommunications at Florida International University and Vice President of Engineering at Systems Engineering Consultants, and participated in the launch of four start-up companies.

He holds a Bachelor and a Master degree in Electrical Engineering from Florida State, has authored over 40 technical publications and papers, co-authored a book on micro-processor design, and is author and/or co-author of over 20 patents and applications.

About Comcast Cable

Comcast brings together the best in media and technology. We drive innovation to create the world's best entertainment and online experiences.

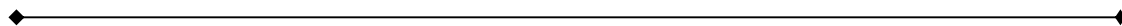


David Ward, Chief Architect & CTO, Engineering, *Cisco Systems*

As CTO and Chief Architect of Engineering at Cisco, David Ward is responsible for defining strategy and leading research and development of new innovation via tight partnerships with customers and academia. Ward is known in the industry because of his knowledge and expertise in IP/MPLS routing, high availability, network design, and systems software. He is the Routing Area Director at the IETF and chair of four Working Groups: IS-IS, HIP, BFD and Softwires. Also, he is leading the work on defining a transport profile for MPLS at the ITU-T. He speaks frequently at the North American Network Operators' Group (NANOG), IETF, IEEE and RIPE conferences and collaborates with several university and private research groups, including Stanford, MIT, Cambridge and Tsinghua University.

About Cisco Systems

Cisco Systems, Inc. is the worldwide leader in networking for the Internet. Today, networks are an essential part of business, education, government and home communications, and Cisco Internet Protocol-based (IP) networking solutions are the foundation of these networks. Cisco hardware, software, and service offerings are used to create Internet solutions that allow individuals, companies, and countries to increase productivity, improve customer satisfaction and strengthen competitive advantage. The Cisco name has become synonymous with the Internet, as well as with the productivity improvements that Internet business solutions provide. At Cisco, our vision is to change the way people work, live, play and learn. Cisco (NASDAQ:CSCO) enables people to make powerful connections - whether in business, education, philanthropy, or creativity. Cisco hardware, software, and service offerings are used to create the Internet solutions that make networks possible - providing easy access to information anywhere, at any time.



David Welch, Executive Vice President & Chief Strategy Officer, *Infinera*

David F. Welch co-founded Infinera, and served as CTO and CMO before his appointment as EVP and CSO in January 2010. He is currently serving a second term on the Board of Directors. Previously, Welch was CTO and VP Corporate Development at SDL. He holds over 130 patents, and has been awarded the Adolph Lomb Medal, Joseph Fraunhofer Award and the John Tyndall Award in recognition of his technical contributions to the optical industry. He is a Fellow of the OSA and the IEEE.

Welch holds a B.S. in electrical engineering from the University of Delaware and a Ph.D. in electrical engineering from Cornell University.

About Infinera

Infinera specializes in Digital Optical Networking systems that are designed to continually improve the economics of optical networking by combining the speed of optics with the simplicity of digital. Infinera is unique in its use of breakthrough semiconductor technology: Large Scale Photonic Integrated Circuit (PIC). Infinera's systems leverage PIC technology to provide customers with a service-ready architecture that enables faster time-to-revenue and greater profitability through network efficiency and the ability to rapidly deliver differentiated services without reengineering their optical infrastructure.

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