

An Exclusive Event Connecting
Business Leaders in Optical Networking
and Communications Technology

10 March 2014 • Moscone Center
San Francisco, California, USA

Collocated with OFC

FEATURED SPEAKERS:



Najam Ahmad, *Director,
Technical Operations, Facebook*



John Considine,
Chief Technology Officer, Terremark



Christopher J. Rust,
*Early Stage Venture Investor,
Multiple Stealth Mode Startups*

POST-EVENT MATERIALS

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EXECUTIVE FORUM 2014

Connecting and Inspiring Leaders in Optical Networking and Communications Technology

Moscone Center
San Francisco, California, USA
10 March 2014

The 2014 Executive Forum, held in conjunction with OFC, provides industry executives with networking opportunities, insights, and analyses from the field's leading business and financial experts on tomorrow's trends and opportunities.

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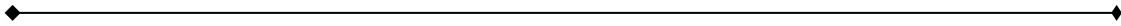
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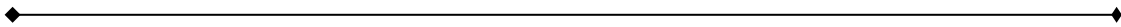
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- ❖ Gurinder Parhar, Director, Product Line Management, *Emcore*
- ❖ Natarajan 'Subu' Subrahmanyam, Senior Managing Director, *The Jada Group*
- ❖ Glenn Wellbrock, Director of Optical Transport Network, *Verizon*

Thank you to the dedicated committee for their time and efforts in developing an outstanding program.



The 2014 Executive Forum is produced by OSA

The Optical Society

About OSA

Founded in 1916, The Optical Society (OSA) is the leading professional society for scientists, engineers, students and business leaders who fuel discoveries, shape real-world applications and accelerate achievements in the science of light. Through world-renowned publications, meetings and membership programs, OSA provides quality research, inspired interactions and dedicated resources for its extensive global network of professionals in optics and photonics. For more information, visit www.osa.org.

AGENDA AT-A-GLANCE

10 March 2014

07:00 – 12:00	Registration
07:30 – 08:30	Breakfast
08:30 – 08:45	Welcome and Opening Remarks
08:45 – 09:30	Featured Townhall Speaker Session I: John Considine, Chief Technology Officer, <i>Terremark</i>
09:30 – 10:45	Panel 1: Packet Optical Network Evolution in a Software-centric World
10:45 – 11:00	Coffee Break
11:00 – 12:15	Panel 2: Why are non-Carriers Building Their Own Networks?
12:15 – 13:15	Networking Lunch
13:15 – 14:00	Featured Townhall Speaker Session II: Najam Ahmad, Director, Network Engineering, <i>Facebook</i>
14:00 – 15:15	Panel 3: Silicon Photonics – What is it Good For?
15:15 – 15:45	Coffee Break
15:45 – 17:00	Panel 4: Vertical Integration as an Element of Business Strategy
17:00 – 17:45	Industry Reflection Keynote: Christopher J. Rust, Early Stage Venture Investor, <i>Multiple Stealth Mode Startups</i>
17:45	Closing Comments
18:00 – 19:30	Networking Reception – Sponsored by: Picometrix

FEATURED TOWNHALL SPEAKER SESSION I

10 March 2014; 08:45 – 09:30

Moderator

- ❖ Glenn Wellbrock, Director of Optical Transport Network, *Verizon*

Speaker

- ❖ **John Considine, Chief Technology Officer, *Terremark***

Speaker Biography

As Terremark's chief technology officer, John Considine is responsible for the alignment of technology vision with the organizational strategies and the integration of the processes with their appropriate technologies. Considine is also responsible for leading the research and development efforts that ensure the execution of the company's long-term vision. Formerly the cofounder of CloudSwitch, a leading enablement software company acquired by Verizon in August 2011, Considine has spent the last three years developing and delivering technologies that enable enterprises to seamlessly and securely integrate public cloud resources into their existing IT infrastructure without re-architecting the applications or changing their management tools and policies.

Considine has more than two decades of technology vision and proven experience in complex enterprise system development, integration and product delivery. Before founding CloudSwitch, he was Director of the Platform Products Group at Sun Microsystems, where he was responsible for the 69xx virtualized block storage system, 53xx NAS products, the 5800 Object Archive system, as well as the next generation NAS portfolio. Considine came to Sun through the acquisition of Pirus Networks, where he was part of the early engineering team responsible for the development and release of the Pirus NAS product, including advanced development of parallel NAS functions and the Segmented File System. He has started and boot-strapped a number of start-ups with breakthrough technology in high-performance distributed systems and image processing. Considine has been granted patents for RAID and distributed file system technology.

Considine began his career as an engineer at Raytheon Missile Systems, and holds a BS in Electrical Engineering from Rensselaer Polytechnic Institute.

About Terremark

A subsidiary of Verizon Communications Inc. (NYSE, NASDAQ:VZ), Verizon Terremark has long been a leader in infrastructure and managed service offerings – delivering the scale, security and reliability necessary to meet the demands of enterprises and governments around the world. And with Verizon's strategic acquisitions of CloudSwitch, Terremark and other top, specialized technologies, we're able to accelerate these benefits and deliver profound, measurable results for businesses big and small.

PANEL DISCUSSIONS

Panel 1: Packet Optical Network Evolution in a Software-centric World

10 March 2014; 09:30 – 10:45

Moderator

- ❖ Zeljko Bulut, Vice President Product Line Management, *Coriant*

Speakers

- ❖ Aref Chowdhury, Chief Technology Officer, Optics, *Alcatel-Lucent*
- ❖ Pedro Florez Miñambres (Pedro Florez), Head of IP & Transport in Telefónica GCT, *Telefónica S.A.*
- ❖ Andrew Lord, Head of Optical Research, *British Telecom*

Panel Description

New products are being offered in the market that combine agile OTN, packet , and photonic switching in a single integrated platform, thus challenging more established networking approaches. While such platforms can deliver unprecedented data plane capacity and switching flexibility, management and control plane approaches are in flux. How will packet optical networks evolve from MPLS, ASON, and GMPLS to incorporate multi-layer control planes, flexible grid ROADMs, and emerging concepts such as software defined networking and network functions virtualization? Will new networking concepts displace or complement existing management and control systems? How are economic and commercial models likely to be affected as a result?

Panel 2: Why are Non-Carriers Building Their Own Networks?

10 March 2014; 11:00 – 12:15

Moderator

- ❖ Eve Griliches, Director Solutions Marketing, *BTI Systems*

Speakers

- ❖ Rob Bath, Vice President of Engineering, EMEA, *Digital Realty*
- ❖ Derek Garnier, CEO, *Layer42 Networks*
- ❖ Inder Monga, Chief Technologist and Area Lead, Energy Sciences Network, *Lawrence Berkeley National Lab*

Panel Description

More hosting and colocation providers and large enterprises are following the lead of content providers and purchasing their own dark fiber and building private networks. The goal is to better manage scale and improve control, particularly as bandwidth between data centers grows. Hear from companies that have faced these decisions: Why did they do what they did? What are the triggers and decision criteria for building versus buying private networks? What have the benefits and drawbacks been in terms of performance and financial (capex, opex) results, and how might this affect future builds? What advice would they have for others contemplating build vs. buy and for vendors looking to tap this growth opportunity?

FEATURED TOWNHALL SPEAKER SESSION II

10 March 2014; 13:15 – 14:00

Moderator

- ❖ Natarajan 'Subu' Subrahmanyam, Senior Managing Director, *The Jada Group*

Speaker

- ❖ **Najam Ahmad, Director, Network Engineering, 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. Ahmad's 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: Silicon Photonics – What is it Good For?

10 March 2014; 14:00 – 15:15

Moderators

- ❖ Brandon Collings, Chief Technology Officer, Optical Communications Products, *JDSU*

Speakers

- ❖ Andreas Bechtolsheim, Chairman, *Arista Networks*
- ❖ Chris Doerr, Director of Photonic Integration, *Acacia Communications*
- ❖ Jerry Rawls, Executive Chairman of the Board, *Finisar Corporation*
- ❖ Yurii A. Baslov, Manager, *IBM*

Panel Description

While using silicon and CMOS processes to manufacture optical components has long been the Holy Grail for the optical component industry, the expectations around readiness of this technology appear to have reached an inflection point in the last couple of years. These expectations have created a strong and vocal debate around the impact of silicon photonics on the optical networking industry. On this panel, silicon photonics stakeholders and detractors will attempt to separate hype from reality and compare silicon photonics' capabilities, limitations, use cases, and economics with those of competing technologies.

Panel 4: Vertical Integration as an Element of Business Strategy

10 March 2014; 15:45 – 17:00

Moderators

- ❖ Stephen Hardy, Editorial Director/Associate Publisher, *Lightwave*
- ❖ Albert Kim, Vice President Strategic Investments, *Ericsson*

Speakers

- ❖ Patrick DiPietro, Chief Executive Officer, *Coriant*
- ❖ Ron Johnson, Director Product Line Management – High End Routing and Optical Team, *Cisco Systems*
- ❖ Paul Silverstein, Managing Director, *Cowen and Company, LLC*

Panel Description

In the pursuit of healthier financial performance and a performance edge, many vendors are pursuing vertical integration strategies. What do industry and individual company results indicate about the success of these strategies—is VI critical for financial success or performance advantage; dependent on the specifics of different product segments (chip through transceiver module, linecard); or a red herring? Are there other, more successful strategies that seem to be yielding better results? How are vertical integration and other structural strategies a reflection of current market conditions, and what do they suggest about the optical communications industry of the future? Hear from component and systems vendors as well as analyst experts.

Industry Reflection Keynote Presentation

10 March 2014; 17:00 – 17:45

Moderator

- ❖ Dana Cooperson, Vice President and Practice Leader, Network Infrastructure, *Ovum*

Speaker

- ❖ Christopher J. Rust, Early Stage Venture Investor, *Multiple Stealth Mode Startup*

Where is the Communications Industry Headed and What Does that Mean for the Players?

The communications industry— and specifically the telecommunications and optical communications sectors within it— is struggling to remake its place as the digital economy evolves. Connectivity is more important than ever, and yet the historically strong commercial bond between end users and communications service providers (CSPs) is straining, which in turn stresses traditional telco-focused infrastructure and components vendors. Device/platform and IT software/hardware vendors and content/Internet service providers appear healthier, but they too must grapple with the evolution of the digital economy in order to take full advantage of change.

Speaker Biography

Chris Rust has been an active participant in the communications and networking industry since 1987. From 1987 to 1995 he worked as an EE on large-scale communications infrastructure build-outs at MITRE, USWEST Advanced Technologies, and broadband services pioneer Time Warner Roadrunner where he was a Co-Founder and lead architect. From 1996 to 1998 Rust ran product management at three startups; Sourcecom (acquired by ACT Networks), ComCore (acquired by National Semi), and Carrier Access (IPO CACS). From 1998 to 2002 he was an early stage VC at Sequoia Capital. From 2002 to 2004 Rust was CEO of the Sequoia portfolio company Mahi Networks. Mahi acquired ROADM pioneer Photuris, merged with Meriton, and was then acquired by Xtera. From 2005 to 2013 he was an early stage VC at USVP. Rust is currently working closely with two stealth mode startups.

Over the past 15 years Rust has made 29 early stage investments. These created \$16B+ in market cap from 19 realized exits. Notable investments include Abrizio (PMCS), Avanex (AVNX), Dune (BRM), Mellanox (MLNX), SwitchOn (PMCS), Telera (Alcatel), and VxTel (INTC). Rust currently has 11 active investments, including Diablo, Exablox, GoPro, Kaiam, PlumGrid, and Zerto. He was an investment team member on 11 more early stage companies. These created \$5.2B+ in market cap from 1 IPO, 8 acquisitions (7 by public companies), 1 oob, with 1 still active.

Rust's current interests are information technology, comm/networking infrastructure, and innovation at the intersection of EE/CS & other disciplines.

SPEAKER AND COMPANY PROFILES

Najam Ahmad, Director Network Engineering, *Facebook*

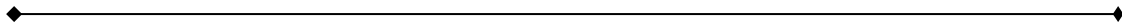
A director of engineering at Facebook, Najam Ahmad oversees all aspects of the development and operation of a global network infrastructure that serves more than a billion people around the world.

Prior to joining Facebook, Najam 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. Najam's other experience includes management and engineering roles at MCI/UUNET and Netrix Corporation.

Najam 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.



Rob Bath, Vice President of Engineering, EMEA, *Digital Realty*

Rob Bath has worked in the data center sector since 2006. Since then he has been heavily involved in the strategic and evolutionary design, build and expansion planning of major UK and European sites for a number of data center owners and operators. Bath joined Digital Realty in early 2011 as Director of Engineering. His principal focus is on engineering data center solutions for clients within the Digital European property portfolio. This remit spans property acquisition, design and construction, technology deployment and sales. Bath holds a Bachelor of Science degree in Electrical Engineering from the University of the Witwatersrand, Johannesburg and is a Chartered Engineer with the Engineering Council, UK.

About Digital Realty

Digital Realty focuses on delivering customer driven data centre solutions by providing secure, reliable and cost effective facilities that meet each customer's unique data centre needs. Digital Realty's customers include domestic and international companies across multiple industry verticals ranging from financial services, cloud and information technology services, to manufacturing, energy, health care and consumer products. Digital Realty's 130 properties, including 12 properties held as investments in unconsolidated joint ventures, comprise approximately 24.0 million square feet as of September 30, 2013, including 2.8 million square feet of space held for development. Digital Realty's portfolio is located in 33 markets throughout North America, Europe, Asia and Australia. Additional information about Digital Realty is included in the Company Overview, which is available on the Investors page of Digital Realty's website at www.digitalrealty.com.

Andreas Bechtolsheim, Chairman, *Arista Networks*

Andreas Bechtolsheim (Andy) is Chairman and Chief Development Officer of Arista Networks, a company he co-founded in 2004. Previously he was a General Manager of the Gigabit Switching Business Unit at Cisco Systems, and before that he was a Co-founder and Chief System Architect at Sun Microsystems.

About Arista Networks

Arista Networks is a leading vendor of 10/40/100G Ethernet switches for data center and cloud networking applications.

Aref Chowdhury, Chief Technology Officer, Optics, *Alcatel-Lucent*

Dr. Aref Chowdhury is the Chief Technology Officer Optics at Alcatel-Lucent. He received his Bachelor of Engineering from the State University of New York at Stony Brook in 1994 in electrical engineering and applied mathematics and statistics, and Ph.D. in electrical engineering from the University of Wisconsin-Madison in 2001. From 1995 to 1997, he worked as a Senior Engineer for Alcatel CIT. After his Ph.D., he joined the Optical Physics Research Department of Bell Laboratories, Murray Hill, New Jersey, USA as a Member of Technical Staff in 2001. He has pursued research in the areas of nonlinear optics, negative refractive index metamaterials, and optical fiber communication. From 2008 to 2010, he served as Senior Manager of Intellectual Property and Standards at Alcatel-Lucent.

In 2010 he was appointed as the CTO Advisor on Optical Technologies, and in 2011, he was appointed to his current position as CTO Optics of Alcatel-Lucent. Dr. Chowdhury's responsibilities include identifying optical technologies that will enable future generations of optical communication systems, transferring research ideas from Bell Labs to the Business Line, and developing long term strategy. Dr. Chowdhury is widely published, has numerous patents, and, among his awards, is the recipient of the MIT TR100 Award. He currently serves as the Chair of the Photonics and Optoelectronics Division of the Optical Society of America and is a member of the National Photonics Initiative of the United States.

About Alcatel-Lucent

Alcatel-Lucent is at the forefront of global communications, providing products and innovations in IP and cloud networking, as well as ultra-broadband fixed and wireless access to service providers and their customers, enterprises and institutions throughout the world.

For more information, visit Alcatel-Lucent on: <http://www.alcatel-lucent.com>, read the latest posts on the Alcatel-Lucent blog <http://www.alcatel-lucent.com/blog> and follow the Company on Twitter: http://twitter.com/Alcatel_Lucent.

John Considine, Chief Technology Officer, *Terremark*

As Terremark's chief technology officer, John Considine is responsible for the alignment of technology vision with the organizational strategies and the integration of the processes with their appropriate technologies. Considine is also responsible for leading the research and development efforts that ensure the execution of the company's long-term vision. Formerly the cofounder of CloudSwitch, a leading enablement software company acquired by Verizon in

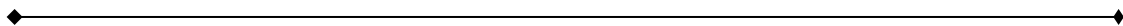
August 2011, Considine has spent the last three years developing and delivering technologies that enable enterprises to seamlessly and securely integrate public cloud resources into their existing IT infrastructure without re-architecting the applications or changing their management tools and policies.

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Patrick DiPietro, Chief Executive Officer, *Coriant*

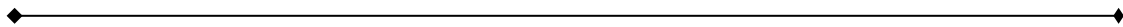
Pat DiPietro is Chief Executive Officer at Coriant, an innovator in end-to-end packet optical networking founded on the distinguished heritage of industry-leading solutions from Nokia Siemens Networks Optical Networks, Sycamore Networks, and Tellabs. Over the course of a career in technology spanning over 30 years, DiPietro has launched several highly successful networking products and start-up ventures. DiPietro brings to his role extensive executive management and R&D experience in the telecommunications and technology industries, including senior leadership roles at Nortel and Bell Northern Research. As an Operating Partner and Group President Telecom at Marlin Equity Partners, DiPietro has managed investment opportunities in telecommunications and technology industries, bringing 30+ years

of operating experience and venture capital expertise. Prior to his role at Marlin, DiPietro was Managing Partner at Canada's VG Partners, overseeing the Technology Fund. As a venture capitalist, he managed large portfolios and teams and sat on numerous boards, including Sandvine, SiGe, Continuous Computing and BelAir Networks. Additionally, he founded The Ottawa Network, a not-for-profit startup accelerator, was board member of Invest Ottawa and has been an angel investor in technology startups.

DiPietro's credentials include a B.Sc. in Electrical Engineering from Queen's University, and Masters in Telecommunications Management from Carleton University.

About Coriant

Coriant, founded as an independent company in 2013, is a leading supplier of future-proof optical transport, packet-optical switching and aggregation, and software-defined service control and management solutions to service providers worldwide. With a distinguished heritage of engineering excellence and innovation, Coriant's end-to-end solutions enable fixed line and mobile network operators to reduce operational complexity, increase service velocity, and improve resource utilization in multi-layer transport networks. Coriant ownership, Marlin Equity Partners, a global investment firm with over \$2.6 billion in capital under management, recently announced the formation of a single leadership and organizational structure for its Coriant and Tellabs portfolio companies. With a focus on customer value creation, this move represents the first step in a plan to merge the industry-leading networking suppliers under the Coriant brand. Learn more at www.coriant.com.



Chris Doerr, Director of Photonic Integration, Acacia Communications

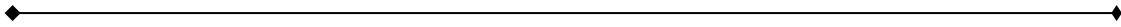
Christopher R. Doerr joined Acacia Communications as Director of Integrated Photonics in 2011. He earned a B.S. in aeronautical engineering and a B.S., M.S., and Ph.D. in electrical engineering from the Massachusetts Institute of Technology (MIT). Since coming to Bell Labs in 1995, Doerr's research has focused on integrated devices for optical communication. He has created many photonic circuits in InP, silica, and silicon and has over 130 patents.

He received the OSA Engineering Excellence Award in 2002, and became an IEEE Fellow in 2006, an OSA Fellow in 2009, and a Bell Labs Fellow in 2011. Doerr was Editor-in-Chief of IEEE *Photonics Technology Letters* from 2007-2009. He was awarded the William Streifer Scientific Achievement Award in 2009. He is currently an Associate Editor for the *IEEE Photonics Technology Letters*. He is currently a program chair for the Optical Fiber Communication Conference. He is married and has two children.

About Acacia Communications

Acacia was founded in 2009 by leading experts in the field of optical networking. Their vision was to accelerate a new era in optical transmission where for the first time advanced digital signal processing and photonic integration, combine to enable reliable ultra-high speed fiber-optic connectivity ready for a variety of main stream deployments of 100G, 200G and 400G and beyond. Executing to that vision, and backed by top tier venture capitalists, Acacia Communications Inc. provides advanced solutions to the optical transport and network infrastructure equipment market for coherent 100G, 200G, 400G transceivers. Working in close collaboration with customers and suppliers, Acacia designs, manufactures and sells leading-edge optical transponder technology that enables customers to reduce overall costs while increasing performance and reducing time to market. Acacia is headquartered in

Maynard, Massachusetts, USA and has an office in Hazlet, New Jersey. For more information about Acacia, visit www.acacia-inc.com.



Pedro Florez Miñambres (Pedro Florez), Head of IP & Transport in Telefónica GCT, Telefónica S.A.

Pedro Florez joined Telefonica de España in 1988. Since 2011 he is the head of the team responsible for global design of IP & Transport solutions within the Global CTO Office in Telefónica S.A. In the last decade he has led the development of IP networks in Telefónica España to cope with the rapid growth of fixed and mobile broadband markets. In his current position extending Mobile Backhaul, Metro Aggregation, core IP Network and Transmission (CDWM/DWDM and Micro Waves): convergence, simplification, and automation are the key drivers of network evolution in his agenda. He sees convergence as a major challenge ahead for all the players in the value chain: "It is time for the industry to deliver".

About Telefónica

Telefónica is one of the largest telecommunications companies in the world in terms of market capitalization and number of customers. From this outstanding position in the industry, and with its mobile, fixed and broadband businesses as the key drivers of its growth, Telefónica has focused its strategy on becoming a leading company in the digital world.

The company has a significant presence in 25 countries and a customer base that amounts more than 309 million accesses around the world. Telefonica has a strong presence in Spain, Europe and Latin America, where the company focuses an important part of its growth strategy.

Telefónica is a 100% listed company, with more than 1.5 million direct shareholders. Its share capital currently comprises 4.551.024.586 ordinary shares traded on the Spanish Stock Market (Madrid, Barcelona, Bilbao and Valencia) and on those in London, New York, Lima, and Buenos Aires.



Derek Garnier, CEO, Layer42 Networks

Derek Garnier is the CEO of Layer42 Networks. He is a 25 year industry veteran, having worked in sales, business and engineering management roles for top datacenter, network and managed service providers including QTS Datacenters, AboveNet Communications, SiteSmith, Global Center, MFS Datanet, and Cabletron Systems.

About Layer42 Networks

Layer42 Networks is a premiere network provider, specializing in high-speed datacenter to datacenter connectivity for many of the industries top technology and enterprise companies. Layer42 also operates world-class datacenters in the bay area, offering scalable, fault tolerant colocation from company inception to customer success. The combination of these two assets allows Layer42 to provide a robust infrastructure solution for any client requirement.



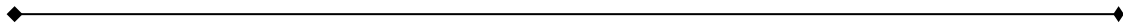
Ron Johnson, Director Product Line Manager of High End Routing & Optical Team, Cisco

Ron Johnson manages Cisco's optical portfolio and the integration of IP and Optical. He has held this position for 6 years and has worked with Cisco's optical group for more than 14 years. Johnson holds multiple patents related to Cisco's ROADM product offerings. His team is responsible for recent innovation and integration in DWDM, Packet and TDM technologies.

Johnson has been in telecom for the last 18 years. Starting out in Pacific Bell/SBC where he obtained a large carrier operational perspective that has found it's way into Cisco's IP+Optical portfolio.

About Cisco

Cisco is shaping the future of the Internet by creating unprecedented value and opportunity for our customers, employees, investors and ecosystem partners and has become the worldwide leader in networking - transforming how people connect, communicate and collaborate.

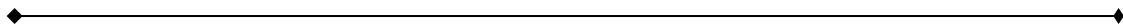


Andrew Lord, Head of Optical Research, British Telecom

Andrew Lord joined BT in 1985 after a degree in Physics from Oxford University. He has worked on a wide range of optical network systems and technologies, including long haul subsea and terrestrial DWDM networks. He currently heads BT's optical core and access research. He has had many years of European project coordination and currently helps lead the Idealist FP7 project. He publishes more than 10 papers per year, regularly speaks at conferences and is Technical Program Chair for OFC 2015. He is an Associate Editor of Journal of Optical Communications and Networking (JOCN) and also Visiting Professor at Essex University.

About British Telecom

BT is one of the world's leading communications services companies, serving the needs of customers in the UK and in more than 170 countries worldwide. The company's main activities are the provision of fixed-line services, broadband, mobile and TV products and services as well as networked IT services. In the UK, BT is a leading communications services provider, selling products and services to consumers, small and medium sized enterprises and the public sector. The company also sells wholesale products and services to communications providers in the UK and around the world. Globally, they supply managed networked IT services to multinational corporations, domestic businesses and national and local government organizations.



Inder Monga, Chief Technologist and Area Lead, Energy Sciences Network, Lawrence Berkeley National Lab

Indermohan (Inder) S. Monga serves as the Chief Technologist and Area Lead of Network Engineering, Tools and Research at Energy Sciences Network. Monga plays a key role in developing and deploying advanced networking services for collaborative and distributed "big-

data” science. Monga’s research interests include network virtualization, software-defined networking, energy efficiency and distributed computing, he serves as co-chair of Network Services Interface working group as well as is appointed as ONF Research Associate.

About Lawrence Berkeley National Lab

The Energy Sciences Network (ESnet) is DOE’s high-performance networking facility, engineered and optimized for large-scale science. Funded by the Office of Science (SC) and managed by Berkeley Lab, ESnet interconnects the entire national laboratory system, including its supercomputer centers and user facilities –enabling tens of thousands of scientists to transfer data, access remote resources, and collaborate productively. Because network requirements for large-scale science are unusually demanding, ESnet allocates significant effort to applied research, development, and innovation. Currently the fastest science network in the world, ESnet is regarded as an influential leader among its global peers. The foundation for this success is an unparalleled team of engineers and other contributors, each focused on the mission of enabling and accelerating scientific discovery.

ESnet serves more than 40 DOE sites, connecting them to over 100 research and commercial networks worldwide. The richness of ESnet’s global connectivity is motivated by the fact that 80% of its traffic originates or terminates outside the national laboratory complex. This pattern in turn reflects the collaborative, increasingly international nature of scientific research.



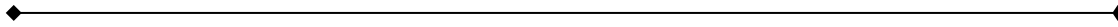
Jerry S. Rawls, Executive Chairman, *Finisar*

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. Over the past two decades, 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, 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.

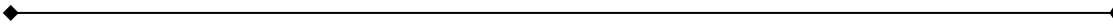


Christopher J. Rust, Early Stage Venture Investor, *Multiple Stealth Mode Startup*

Chris Rust has been an active participant in the communications and networking industry since 1987. From 1987 to 1995 he worked as an EE on large-scale communications infrastructure build-outs at MITRE, USWEST Advanced Technologies, and broadband services pioneer Time Warner Roadrunner where he was a Co-Founder and lead architect. From 1996 to 1998 Rust ran product management at three startups; Sourcecom (acquired by ACT Networks), ComCore (acquired by National Semi), and Carrier Access (IPO CACS). From 1998 to 2002 he was an early stage VC at Sequoia Capital. From 2002 to 2004 Rust was CEO of the Sequoia portfolio company Mahi Networks. Mahi acquired ROADM pioneer Photuris, merged with Meriton, and was then acquired by Xtera. From 2005 to 2013 he was an early stage VC at USVP. Rust is currently working closely with two stealth mode startups.

Over the past 15 years Rust has made 29 early stage investments. These created \$16B+ in market cap from 19 realized exits. Notable investments include Abrizio (PMCS), Avanex (AVNX), Dune (BRCM), Mellanox (MLNX), SwitchOn (PMCS), Telera (Alcatel), and VxTel (INTC). Rust currently has 11 active investments, including Diablo, Exablox, GoPro, Kaiam, PlumGrid, and Zerto. He was an investment team member on 11 more early stage companies. These created \$5.2B+ in market cap from 1 IPO, 8 acquisitions (7 by public companies), 1 oob, with 1 still active.

Rust's current interests are information technology, comm/networking infrastructure, and innovation at the intersection of EE/CS & other disciplines.



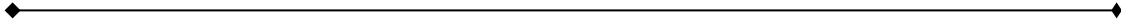
Paul Silverstein, Managing Director, *Cowen and Company, LLC*

Paul Silverstein is a Managing Director and Senior Research Analyst at Cowen and Company covering data networking and wireline equipment. Prior to joining Cowen in January 2013, Silverstein was a Senior Analyst in Credit Suisse's Equity Research Department, covering the communications infrastructure industry. Prior to that, he was a Senior Analyst in Equity Research at Robertson Stephens and at Needham & Co. Prior to becoming a securities analyst, Silverstein practiced corporate and securities law as an associate at Weil Gotshal & Manges and at Pryor Cashman Sherman & Flynn. He holds an M.B.A. from Columbia Business School, a J.D. from Cornell Law School, and a B.A. from the University of Pennsylvania. Institutional Investor, the Wall Street Journal, Forbes Magazine and Thomson Reuters StarMine have ranked Silverstein as one of the top U.S. networking and communication equipment analysts.

About Cowen and Company, LLC

Cowen and Company, the broker-dealer business of Cowen Group, Inc. (NASDAQ:COWN), provides industry focused investment banking for growth-oriented companies, domain knowledge-driven research services and a robust sales and trading platform to companies and

institutional investor clients. Sectors of focus for the business include healthcare, technology, telecommunications, aerospace and defense/industrials, consumer, energy, metals and mining and transportation. Founded in 1918, Cowen Group is headquartered in New York and has offices located in major financial centers around the world.

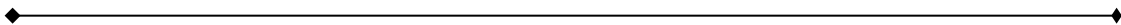


Yuri A. Vlasov, Manager, *IBM*

Dr. Yurii Vlasov is a Manager at IBM Research. For the last 12 years at IBM, he led the development of silicon nanophotonics starting from its initial exploratory research stage up to manufacturing and product development. He served as a company-wide strategist, focused on the long-term vision of nanophotonics aligned with the IBM product division roadmap. He also contributed to the development of IEEE standards on 100G Ethernet optical links. Vlasov was elected a Fellow of both OSA and APS, as well as a Senior Member of the IEEE. He was awarded several IBM Outstanding Technical Achievement Awards, the “Best of IBM” Award and the IBM 2011 Corporate Award, as well as was named “Scientist of the Year” by the Scientific American journal.

About IBM

International Business Machines Corporation (IBM) provides computer solutions through the use of advanced information technology. The Company's solutions include technologies, systems, products, services, software, and financing. IBM Systems and Technology Group provides computing power and storage solutions, and semiconductor technology, products, and packaging solutions. It offers a full range of server, storage and networking offerings supporting public, private and hybrid cloud implementations that integrate with IBM's cloud software and services.





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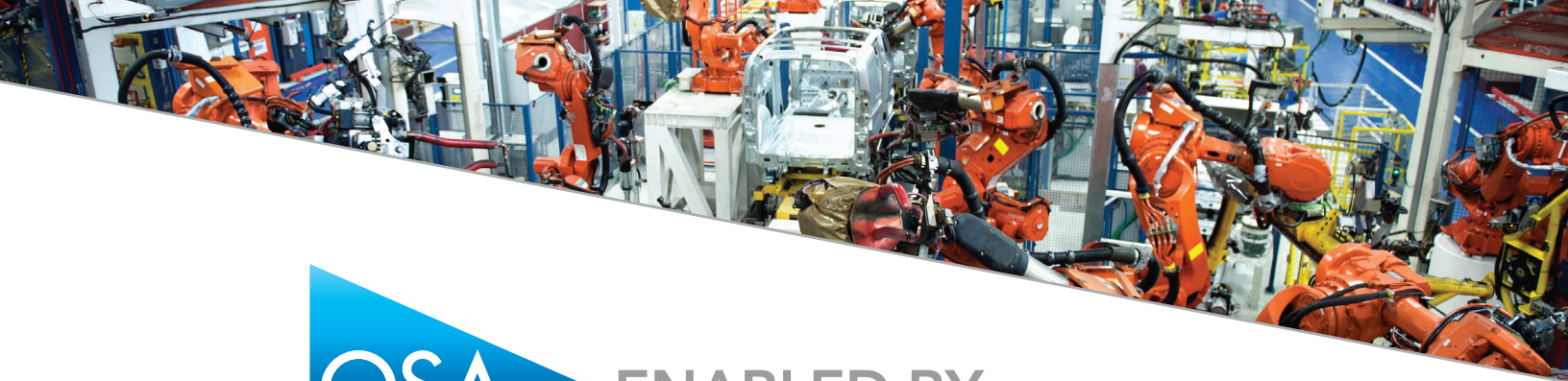
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