

BOIS CAPITAL

SDN/NFV Report - June 2015

I. Bois Capital

Bois Capital is an investment bank focused on the technology sector. The Managing Partners have extensive experience in the Networking, Cloud, and Telco Software.



Peter Benedict previously served at Bell Labs and most recently as Vice President and head of Alcatel-Lucent's Customer Experience Analytics business. He was responsible for strategy, product development, R&D and P&L for a suite of Big Data products that provide to insights fixed and wireless service providers. Previously Bell Labs Peter was with Xylan and Tachion Networks where he developed deep expertise in networking, applications, and virtualization.



Ben Boissevain has extensive corporate finance experience in the Telco sector, closing numerous wireless M&A transactions. He held positions at White & Case, Erste Bank in Vienna and Barclays Capital. Ben has spoken at wireless industry conferences and led the negotiations on a recent Telco Big Data analytics transaction described below.



Tarang Shah has extensive experience in technology. He was a Venture Capitalist at SoftBank Capital for mobile and software investments, SVP of Mobile, Payment, SaaS and Big Data Innovations at BofA, Lead Product Manager for Ericsson's 3G product line and Marketing Manager at Qualcomm. He is author of "Venture Capitalists At Work".

The Managing Partners are supported by Associates Sal Bakhрани, Dheeraj Chinthalapelly and Felipe Osario.

II. SDN/NFV M&A Sector Trends

Network Function Virtualization (NFV) and Software Defined Networking (SDN) outside of the data center are still in infancy, but are projected to grow at a dynamic pace that will transform the Telecommunication Industry landscape.

We are beginning to see a rise in M&A activity within this space as large Telecommunication Vendors, Data Analytics Companies, OSS/BSS and Performance Assurance Solution Providers shore up their portfolios to stay competitive in the market.

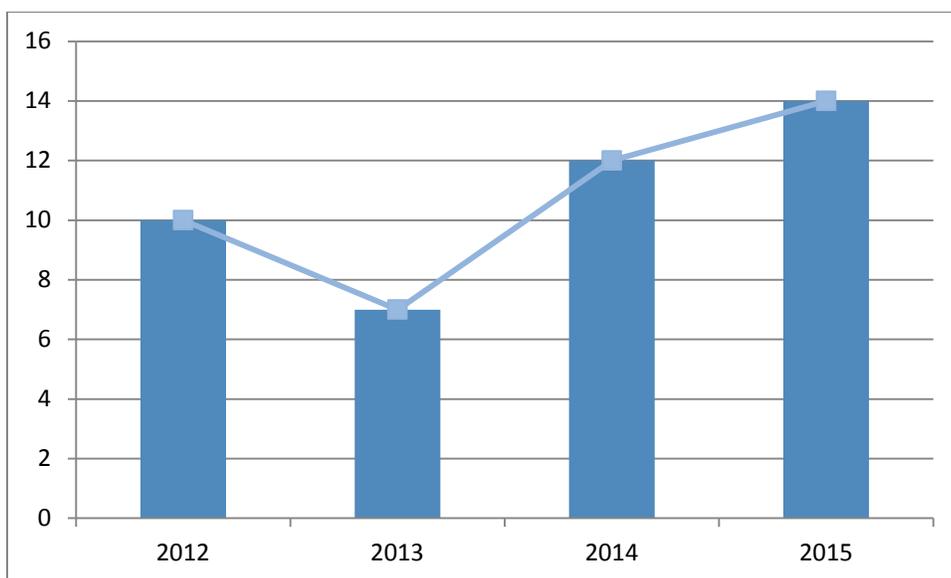
Additionally we expect to see a sell-side driver in the coming 18 months as it will be a challenge for smaller SDN and NFV companies to gain critical mass and have a standalone business. A majority of these solutions are better suited as part of a larger product portfolio. As such we expect interest in exits once solutions are market validated through customer traction and revenues.

We expect the number of transactions to dramatically increase, driven by the following industry trends:

- The rise of Cloud Computing and virtualization are breaking the barriers between the network as a whole and the individual hardware elements that comprise the network and 'Orchestration' becomes the word of the day.

- The dynamic nature of the today's applications running over data networks (e.g., Netflix streaming) need to be reflected in a more dynamic, agile network and application architecture
- In order to achieve operational efficiencies and lower costs, Service Providers need to increase adoption of SDN technologies (lowering CAPEX) and NFV (lowering primarily OPEX).
- With an increase in mobile usage and IoT, network data will have to be managed more smartly.
- Flexible data networks will allow customers to pay for only the bandwidth they use.
- CSPs desire to lower the time to market for new service rollouts and configuration changes will increase the need to adopt NFV technologies.

Number of transactions in the past three years and into 2015



According to www.researchandmarkets.com, the projected size of the SDN/NFV market offers attractive opportunities for players in this space to capitalize on.

- NFV revenues will climb to \$8.7 billion by the end of year 2020.
- SDN will be a \$11.3 billion market by year 2020 with a CAGR of 53%.
 - Telecom SDN will reach to \$3 billion with a CAGR of 45.9%, while Enterprise SDN will reach to nearly \$8 billion with a CAGR of 56.5%.
- The global market for NFV will grow at a CAGR of 83.1% between 2015 and 2020.

III. Significant Precedent Transactions

As most service providers are looking for a flavor of virtualization from their solution vendors, many companies today message SDN and NFV as a key element of their product strategy. As such in reviewing precedent transactions (below) there are relatively few pure-play SDN and NFV transactions. We have captured those who heavily message SDN or NFV as a major part in acquisition rationale – either as stated by the acquirer (e.g., Ciena for Cyan) or in product messaging of the acquired (e.g., Procera).

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Date	Acquirer	Target	Target Summary	SDN	NFV
5/4/2015	Ciena Corporation (NYSE:CIEN)	Cyan, Inc. (NYSE:CYNI)	Cyan, Inc. provides various carrier-grade networking solutions that transform legacy networks into open high-performance networks in North America, Asia, and Europe. Its solutions <u>enable network operators to virtualize their networks, accelerate</u>		NFV
4/22/2015	Francisco Partners Management LLC	Procera Networks, Inc. (NasdaqGS:PKT)	Procera Networks, Inc. designs and sells subscriber experience assurance solutions based on deep packet inspection (DPI) technology to network operators worldwide. The company's <u>PacketLogic solutions enable network operators to gain</u>		NFV
4/20/2015	X5 Solutions, Inc.	Switching Concepts	Switching Concepts offers advanced switching platforms, network monitoring, and billing services to telecom providers. The company also provides a cloud-based Web portal with <u>various business tools/options, including SIP/H323.</u>	SDN	
4/15/2015	Nokia Corporation (HLSE:NOK1V)	Alcatel-Lucent (ENXTPA:ALU)	Alcatel-Lucent provides Internet protocol (IP) and cloud networking, and ultra- broadband access worldwide. The company's Core Networking segment offers IP routing, carrier <u>Ethernet, network functions virtualization, and software defined</u>	SDN	NFV
4/8/2015	Infinera Corporation (NasdaqGS:INFN)	Transmode AB (publ) (OM:TRMO)	Transmode AB (publ) provides packet-optical networking solutions that enable fixed line and mobile network operators to manage the capacity needs in video and data traffic. The <u>company offers TM-Series, a carrier-class packet-optical</u>	SDN	
4/1/2015	Cisco Systems, Inc. (NasdaqGS:CSCO)	Embrane, Inc.	Embrane, Inc. designs and develops a multi-service software architecture that delivers network services to enterprises and service providers. It offers heleos, a multi-service distributed <u>software platform for powering application-centric network</u>	SDN	NFV
3/10/2015	Bain Capital, LLC	Blue Coat Systems Inc.	Blue Coat Systems, Inc. designs, develops, and sells products and services that secure, accelerate, and optimize the delivery of business applications, Web content, and other information <u>to distributed users over a wide area network (WAN) or the</u>	SDN	
3/9/2015	iPhotonix, LLC	NetSocket, Inc., Network Functions Virtualization	As of March 2, 2015, Network Functions Virtualization Assets of NetSocket, Inc. were acquired by iPhotonix, LLC. Network Functions Virtualization Assets of NetSocket, Inc. comprises a <u>cloud based platform that enables network operators to</u>		NFV
3/4/2015	Docker, Inc.	SocketPlane, Inc.	SocketPlane, Inc., a software development company, focuses on open source software defined networking. It offers DevOps <u>defined networking by enabling distributed security, application services, and orchestration for Docker and Linux</u>	SDN	
3/2/2015	Mitel U.S. Holdings, Inc.	Mavenir Systems, Inc. (NYSE:MVNR)	Mavenir Systems, Inc. provides software-based telecommunications networking solutions in the Americas, Europe, the Middle East, Africa, and the Asia-Pacific regions. <u>The company's solutions, which are based on its mOne</u>	SDN	
3/1/2015	Brocade Communications Systems, Inc. (NasdaqGS:BRCD)	Connectem Inc.	Connectem Inc. designs and develops wireless device solutions. The company's software allows users to connect mobile devices to carrier networks. The company is based in <u>Santa Clara, California.</u>	SDN	
2/5/2015	Brocade Communications Systems, Inc. (NasdaqGS:BRCD)	Riverbed's ADC	As of March 4, 2015, Riverbed Technology, Inc., SteelApp Business was acquired by Brocade Communications Systems, Inc. Riverbed Technology, Inc., SteelApp Business develops <u>virtual application delivery controllers.</u>	SDN	
1/13/2015	Mavenir International Holdings, Inc.	Ulticom, Inc.	Ulticom, Inc. provides signaling products and software products for information delivery. The company offers a range of diameter signaling network products comprising central <u>routers, edge routers/diameter edge agents, IPX hubs, diameter</u>	SDN	
1/8/2015	Sonus Networks, Inc. (NasdaqGS:SONS)	Treq Labs, Inc., Software Defined Networking	As of January 2, 2015, Software Defined Networking Business of Treq Labs, Inc. was acquired by Sonus Networks, Inc. Software Defined Networking Business of Treq Labs, Inc. <u>provides solutions that optimize networks for voice, video, and</u>	SDN	
12/15/2014	Ontario Teachers' Pension Plan; Thoma Bravo, LLC; Ontario	Riverbed Technology, Inc. (NasdaqGS:RVB)	Riverbed Technology, Inc. provides application performance infrastructure solutions in the Americas, Europe, the Middle East, Africa, and the Asia Pacific. The company offers the <u>Riverbed Application Performance Platform, a set of solutions</u>	SDN	
11/12/2014	Mavenir International Holdings, Inc.	Mavenir Systems, Inc. (NYSE:MVNR)	Mavenir International Holdings, Inc. provides mobile gateway solutions to the broadband network industry. It offers home/mobile broadband access solutions that include Security <u>eXchange, a network gateway application that provides RAN</u>	SDN	

11/6/2014	Pierer Industrie AG	BF Holding AG (WBAG:BFC)	BF Holding AG provides various IT solutions in Germany, Italy, the Netherlands, and Central East Europe. It integrates business solutions and optimizes information and communication technology (ICT) infrastructures. The company		NFV
10/21/2014	StoneCalibre, LLC	NetPlus Inc.	NetPlus Inc. provides telecom infrastructure management solutions for government, commercial, and municipal clients in the United States and internationally. The company offers Telecom Management System (TMS) that automates network		NFV
10/10/2014	Novacap	Dialogic, Inc.	Dialogic Inc. provides various communication products and technologies to wireless and wireline service providers for the transport, transcode, manage, and optimize video, voice, and data traffic. Its products and solutions include ControlSwitch	SDN	
9/15/2014	Brocade Communications Systems, Inc. (NasdaqGS:BRCD)	Vistapointe Networks	Vistapointe Networks provides network intelligence as a service, a mobile analytics and business intelligence solution for 3G and 4G mobile networks. It offers Vistapointe Analysis and Correlation Engine (VACC) that is deployed in the	SDN	NFV
8/4/2014	BroadSoft, Inc. (NasdaqGS:BSFT)	Systems Design & Development, Inc.	Systems Design & Development, Inc. provides software, services, and systems integration solutions for use by owners and managers of private in-building, campus, and enterprise telecommunications networks. It offers integrated software	SDN	
6/17/2014	Cisco Systems, Inc. (NasdaqGS:CSCO)	Tail-f	Tail-f Systems AB provides configuration management software for networking equipment and network management systems. The company specializes in multi-vendor service orchestration and network automation solutions. It offers		NFV
6/3/2014	MYCOM (UK) Limited	MYCOM OSI Inc.	MYCOM OSI Inc. develops operations support systems solutions for communications service providers. It offers NetExpert, a platform that provides solutions for fixed, broadband, and wireless companies to manage their networks.	SDN	NFV
1/30/2014	JDS Uniphase Corporation (NasdaqGS:JDSU)	Trendium, Inc.	Trendium, Inc. provides service intelligence and performance management software solutions for telecom service providers and enterprises in the United States and internationally. It offers ServicePATH that allows providers to optimize service	SDN	NFV
1/10/2014	Infogix, Inc.	Agilis International, Inc.	Agilis International, Inc. provides software solutions and value added services to enterprise customers in the United States and internationally. Its solutions and services include NetMind, a customer risk management solution that provides	SDN	
1/7/2014	Oracle Corporation (NYSE:ORCL)	Corente, Inc.	Corente, Inc. develops cloud-based applications and services. The company offers Cloud Service Exchange, a cloud-based service delivery and management platform that enables information technology service providers or enterprises to	SDN	NFV
12/3/2013	HBC Solutions, Inc.	Imagine Communication s Corp.	Imagine Communications Corp. provides media software and video infrastructure solutions for broadcast, multichannel video programming distributor, government, and enterprise customers globally. It offers media software solutions in the		NFV
11/6/2013	Cisco Systems, Inc. (NasdaqGS:CSCO)	Insieme Networks, Inc.	Insieme Networks, Inc. develops and provides software-defined networking (SDN) systems. The company was founded in 2012 and is based in San Jose, California. Insieme Networks, Inc. operates as a subsidiary of Cisco Systems, Inc.	SDN	
11/5/2013	Amdocs Limited (NasdaqGS:DOX)	Celcite Management Solutions, LLC	Celcite Management Solutions, LLC provides optimization solutions for wireless technologies worldwide. It offers COPS, a single enterprise grade mobile network performance and optimization platform that connects, harvests, and processes	SDN	
10/28/2013	NTT	Virtela	Virtela Technology Services Incorporated, a cloud networking company, provides enterprise networking and virtualized information technology services in the United States and internationally. The company designs, implements, and		NFV
3/16/2013	Lone Rock Technology Group, LLC	Packet Design, LLC	Packet Design, LLC develops route analytics and IP route management solutions. Its portfolio includes Route Explorer, an IP route and traffic analysis system designed for network engineers, architects, planners, and operators managing		NFV
2/11/2013	F5 Networks, Inc. (NasdaqGS:FFIV)	LineRate Systems, Inc.	LineRate Systems, Inc. develops and sells software defined network service solutions for packet core operators, and cloud and Web service providers. It offers LineRate Proxy, a network software that provides traffic steering management, security,	SDN	

1/7/2013	Procera Networks, Inc. (NasdaqGS:PKT)	Vineyard Networks Inc.	As of January 9, 2013, Vineyard Networks Inc. was acquired by Procera Networks, Inc. Vineyard Networks develops and provides network application intelligence solutions. It offers <u>application intelligence SDK, network application visibility</u>	SDN	
12/18/2012	Cisco Systems, Inc. (NasdaqGS:CSCO)	BroadHop, Inc.	BroadHop, Inc. was acquired by Cisco Systems, Inc. BroadHop, Inc. provides policy control platforms for telecom operators worldwide. It offers Quantum Policy Server, an <u>advanced PCRF server that dynamically links services to the</u>		NFV
12/17/2012	Cisco Systems, Inc. (NasdaqGS:CSCO)	Cariden Technologies, Inc.	As of December 17, 2012, Cariden Technologies, Inc. was acquired by Cisco Systems, Inc. Cariden Technologies, Inc. provides design, planning, and operational automation <u>intelligence for managing networks. It offers MATE software</u>	SDN	
12/14/2012	Juniper Networks, Inc. (NYSE:JNPR)	Contrail Systems Inc.	Contrail Systems Inc. designs and develops networking software. It develops Web-scale platforms and virtualized network control solutions. The company was founded in 2012 <u>and is based in Santa Clara, California. As of December 14,</u>		NFV
7/23/2012	Vmware	Nicira, Inc.	Nicira, Inc. offers software that virtualizes the network. The company develops Network Hypervisor, a solution that <u>transforms data center networks. Its solution reproduces the network service model in logical space for controlling logical</u>		NFV
7/2/2012	Ixia (NasdaqGS:XXIA)	BreakingPoint Systems, Inc.	BreakingPoint Systems, Inc. engages in the development, marketing, and sale of security and performance testing products and services to network equipment manufacturers, <u>service providers, governments, and enterprises worldwide. It</u>		NFV
5/7/2012	Ixia (NasdaqGS:XXIA)	Anue Systems, Inc.	Anue Systems, Inc. provides products that enable telecommunication and cable service providers, government agencies, and corporations with data centers and enterprise <u>networks to monitor and test networks in the United States. Its</u>	SDN	
5/1/2012	Allot Communications Ltd. (NasdaqGS:ALLT)	Ortiva Wireless, Inc.	As of May 15, 2012, Ortiva Wireless, Inc. was acquired by Allot Communications Ltd. Ortiva Wireless, Inc. develops video optimization solutions for mobile network operators (MNOs) <u>and managed service providers (MSPs). The company offers</u>	SDN	
4/3/2012	GENBAND US LLC	Aztek Networks, Inc.	As of April 3, 2012, Aztek Networks, Inc. was acquired by GENBAND U.S. LLC. Aztek Networks, Inc. builds and supports <u>switch consolidation and network migration solutions for telecommunications service providers. The company offers</u>		NFV
3/13/2012	Dell Inc.	SonicWALL L.L.C.	SonicWALL L.L.C. provides network security and data protection solutions that enable customers and partners to <u>secure, control, and scale their global networks. It offers network security products, including firewall appliances for</u>		NFV
2/1/2012	Thoma Bravo, LLC	InfoVista S.A.	InfoVista S.A., together with its subsidiaries, designs, develops, and markets software solutions for proactive service assurance in France, Europe, the Middle East, Africa, the <u>Americas, and the Asia Pacific. The company designs and</u>	SDN	

IV. M&A Market and Process

As seen in the above analytics and list of precedent transactions that is a huge pool of firms seeking to acquire in the SDN/NFV space across:

- Large networking and telecom vendors
- OSS/BSS solution providers
- Service assurance firms
- Carrier Ethernet and IP backhaul firms
- Telco software firms
- Private equity firms

A typical process for one to explore the market, determine interest in a strategic sale and complete the transaction is around three months to LOI and six months to close. Bois Capital runs a very streamlined process to help secure the right strategic partner and valuation for its clients. Bois Capital has a deep

sector experience, senior level connections and execution expertise in the telecommunications sector. If you are interested in exploring your growth options including a strategic exit, Bois Capital will be happy to schedule a brainstorming session, discuss the dynamics of your business, the strategic fit with potential targets within the analytics ecosystem, provide valuation metrics, and confidentially discuss the next steps.

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