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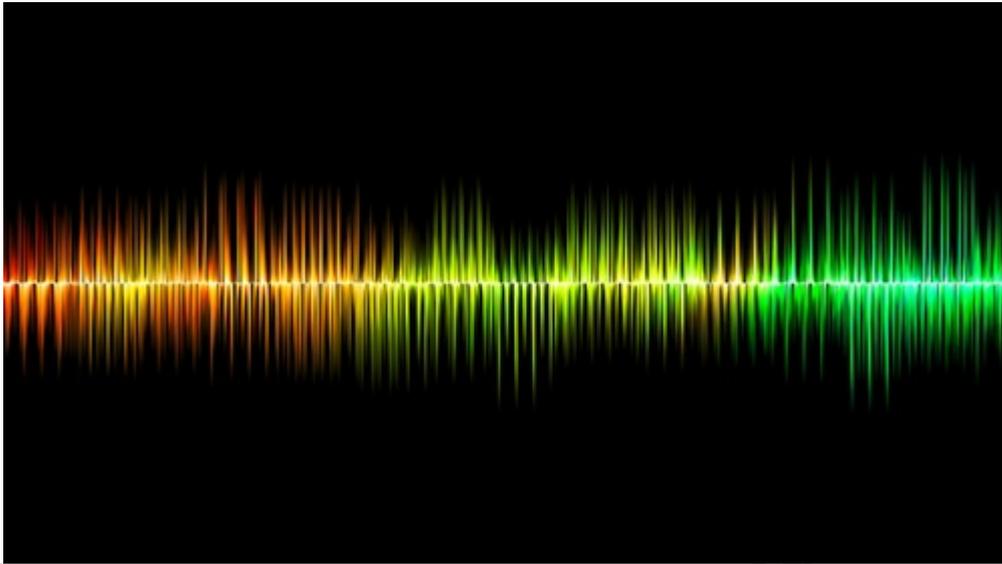
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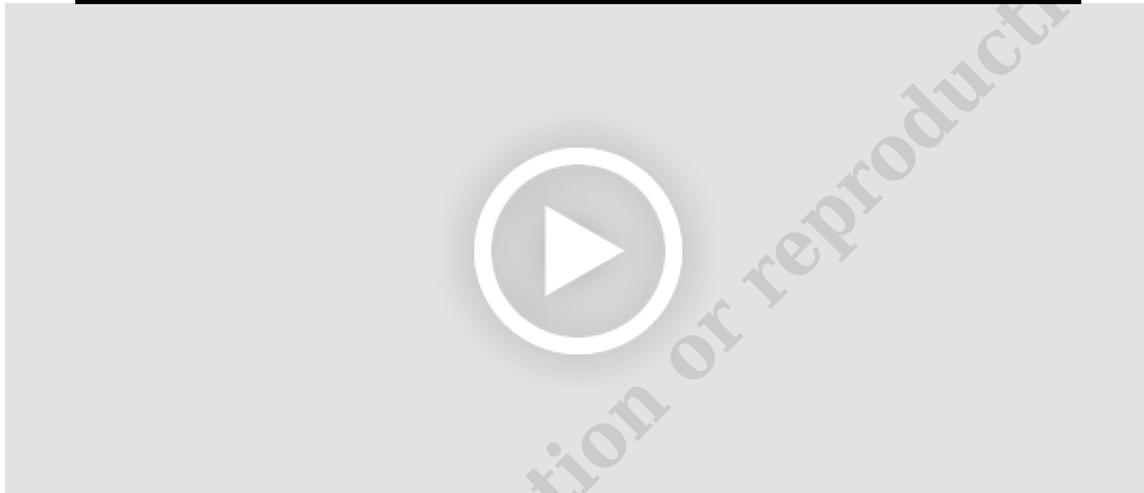
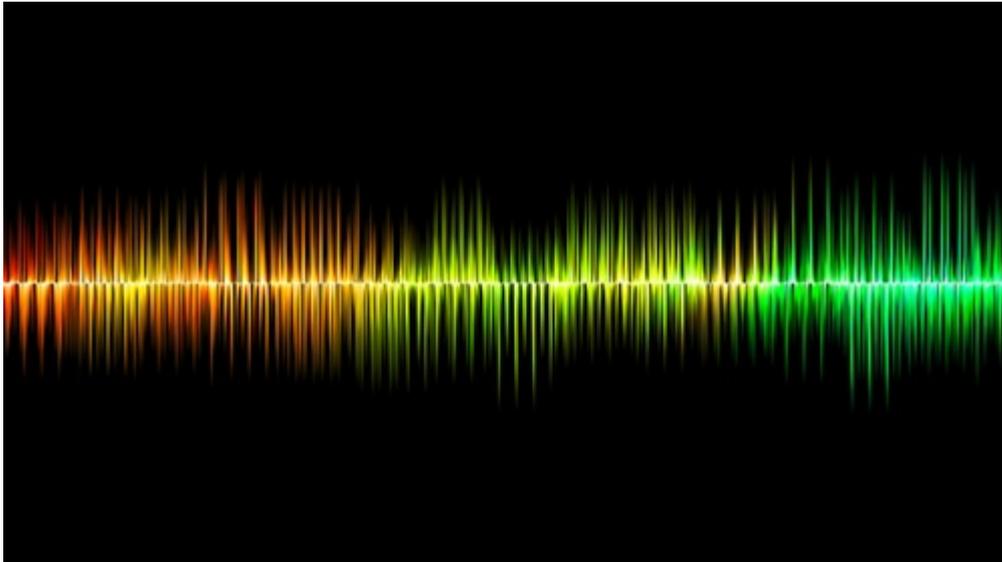
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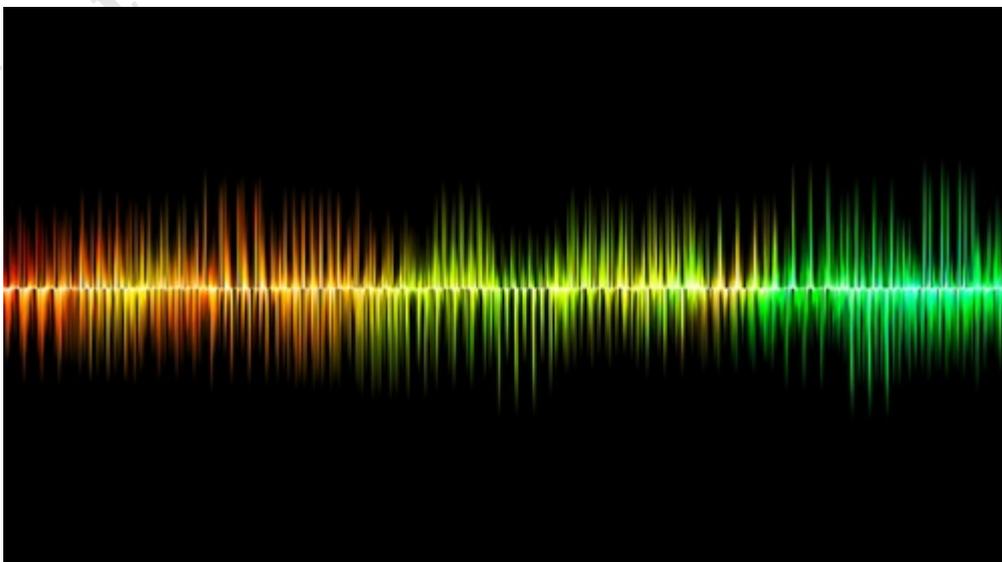
Predicting Colonial Pipeline: Mitigating Risk and Compliance

Mitigating risk and compliance for lawful intercept using lawful intelligence is explored in this Pipeline article feature SS8. Learn how CSPs can comply with lawful intercept regulation, while empowering law information with critical, real-time data.



Podcast: The Evolution to 6G

The world's eyes are already looking forward to the potential of 6G. Demands resulting from innovative use cases, for instance specific requirements from different industries and other user groups, as well as overarching goals like sustainability, are driving the standardization and development of mobile technologies.





The Network Transformation Imperative

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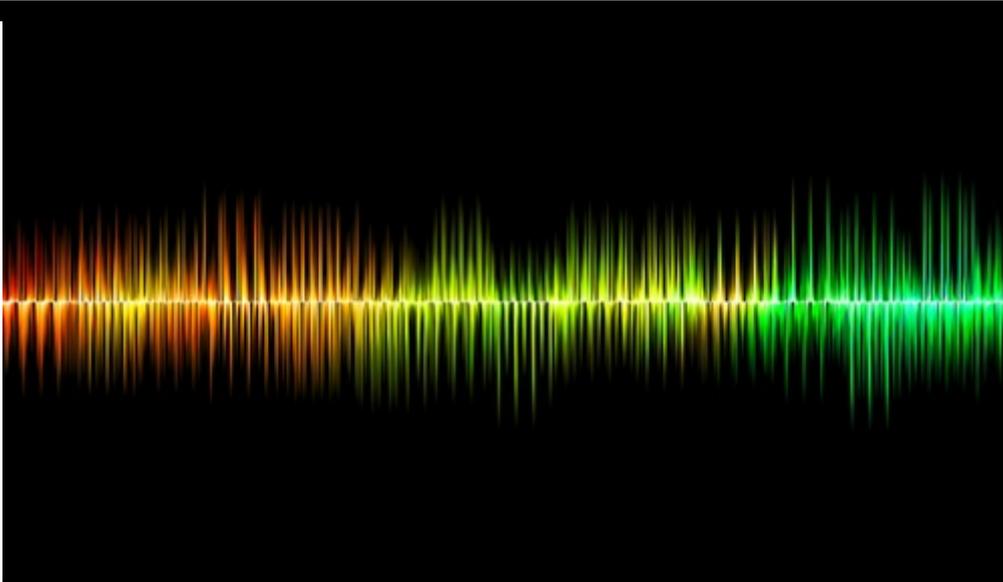


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CSG Point-of-View: The Promise of Television Commerce



Interactive Television Technologies Can Deliver New Ways to Engage Your Customers and Increase Revenue and Upsell Opportunities in Real Time.

Using Interactive Television to Build Revenues, Engage Customers

The television viewing experience has been forever changed by the internet. Consumers want to engage and interact with their favorite television content—much like they do with content on their computers, mobile phones and other technology devices.

The mass adoption of web-enabled devices is transforming the way households access and consume media content on their televisions—and how they interact with businesses via the TV. Market research firm iStats projects that more than 200 million web-enabled devices will be in use in the United States by 2014, and the average household will own between five and 10 such devices—televisions included.

With the set-top box in millions of U.S. households, cable and ODS providers have a clear advantage in leveraging T-commerce models to create new revenues and deliver new ways of interacting with customers that build loyalty and deliver a more personalized experience.

With new technology standards from CableLabs—namely the Enhanced TV Binary Interchange Format (EBIF)—T-commerce is a viable business model for cable and ODS providers.

The EBIF standard has already made its way into 25 million subscriber homes, offering an innovative and immediate way for providers to entice new consumers and retaining existing ones.

www.csg.com

Interactive Customer Care Drives Loyalty

Interactive TV models enable cable and ODS providers to deliver a more enriched customer experience. What better and more direct way to communicate with consumers than through their television?



The beauty of interactive TV is that it enables two-way communication between a provider and their customers in real-time.

Providers can send messages directly to subscribers about their bill, and then prompt the subscriber to view and pay their cable bill right from the television screen using their remote control.

With direct integration from the set-top box to back-office billing, customer care and other applications, any changes a customer makes to their account from the comfort of their couch are updated in real-time.

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THE LOW-LATENCY SERVICES MARKET:

Evaluating the Emerging Market Opportunity for Service Providers and Telecom Carriers

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August 2012

**Stratecast Solution Strategies: Multiple Views,
Not Multiple Versions at Telkom South Africa**

Stratecast Analysis by
Nancee Ruzicka



OSS/BSS Global Competitive Strategies
(OSSCS)
Volume 13, Number 06

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White Paper

Orchestrating the Evolution to Cable IP Video

Written by:

Alan Breznick, Senior Analyst, Heavy Reading



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Case Study

Implementing a Scalable, Common Element Management System for Large Multi-Vendor Networks

Verizon Business and Nakina Systems Case Study

In 2005, Verizon Business, set out to build a state-of-the-art, ultra-long haul (ULH) transport network and converged packet access (CPA) network initially comprised of more than 20 different types of equipment from 10 different equipment vendors.

Service Delivery Challenges

In order to deliver a new service across multiple network equipment providers (NEP) devices and SONET/SDH, WDM, Ethernet, and IP/MPLS networking technologies, Verizon Business needed to integrate a complex set of networks and applications spanning up to thousands of network nodes.

Adding a new device type or application to this heterogeneous environment often required upgrading both hardware and software across the entire network. For a large scale networking environment, this can be an incredibly complex task since the new services need to be delivered via different NEP products and networking technologies.

The network initially comprised 20 different types of equipment from 10 different equipment vendors, spanning hundreds of thousands of network nodes.

Operations and Integration Challenges

Verizon Business used a mixture of operational and business support systems (OSS/BSS). These systems were deployed on unique platforms from different NEPs, operating with proprietary software applications and communications protocols.

NEP-provided EMSs tend to use proprietary OSS interfaces with varying levels of security and lacking the scalability needed by a large, global network operator.

Substantial system and software integration work was needed to make each EMS function sufficiently for the network operations personnel to manage the network. The effort to maintain multiple systems including hardware, element management systems (EMSs), testing and training could not be easily sustained to support the new services Verizon Business wanted to deliver.

The challenge facing Verizon is typical for a large, global communications service provider and can be summed up in a single word: complexity.


Nakina
Systems



Report

Reducing order fallouts: Key to success with business services

January 2015

Mark Mortenson and Anil Rao

www.analysismason.com

Brochures

Wednesday November 5, 2014				
TIME	SESSION	SESSION TYPE	DEMO AREA	BOARD ROOMS
7:00pm - 11:00pm	Speed Networking Cocktail Reception	Networking		

Thursday November 6, 2014				
TIME	SESSION	SESSION TYPE	DEMO AREA	BOARD ROOMS
8:00am - 9:00am	Networking Breakfast	Networking		Open
9:15am - 10:00am	Opening Remarks	General	Setup	
10:00am - 10:45am	Service Provider Perspectives: Contending with Key Challenges (featuring AT&T, BT, Comcast, Level 3 and Verizon)	General		
10:45am - 11:15am	Networking Break	Networking	Open	
11:25am - 12:00pm	Advanced Customer Experience Management (featuring Andect and CT Invision)	General		
12:00pm - 12:45pm	Leveraging Big Data for Enterprise Business Intelligence (featuring Tableau and Shyp)	General		
12:45pm - 1:45pm	Topic Roundtable Luncheon	Networking	Open	
2:00pm - 2:45pm	The Agile Architecture (featuring Dr. Tom Wisa, CT Invision and Talt)	General		
2:45pm - 3:30pm	Delivering Elastic Services (featuring Applixio, Comcast and TERONE)	General		
3:30pm - 4:00pm	Networking Break	Networking	Open	
4:00pm - 4:45pm	The New Networks (featuring H3io and ASB)	General		
4:45pm - 5:30pm	Transformation: Managing the Evolution to Virtual Networks (featuring CT Invision and ASB)	General		
5:30pm - 6:00pm	Pre-Dinner Break	Break	Open	
6:00pm - 7:00pm	Networking Dinner	Networking		
7:00pm - 10:00pm	Evening Entertainment	Networking		

Friday November 7, 2014				
TIME	SESSION	SESSION TYPE	DEMO AREA	BOARD ROOMS
8:00am - 9:00am	Networking Breakfast	Networking		Open
9:15am - 10:15am	Market Analysis: Industry Insights (featuring Applixio, CT Invision and NPRO)	General		
10:25am - 11:15am	Risk Mitigation: Advanced Security Planning (featuring Level 3, NPRO and Verizon)	General		
11:25am - 12:15pm	Competitive Edge: Leveraging Content and WebRTC (featuring Applixio and Genband)	General		
12:15pm - 1:15pm	Networking Lunch	Networking	Open	
1:25pm - 2:15pm	Users Den - Sessions 1 & 2	Interactive		
2:25pm - 3:15pm	Users Den - Sessions 3 & 4	Interactive		
3:25pm - 4:15pm	Users Den - Sessions 5 & 6	Interactive		
4:25pm - 5:00pm	Editorial Calendar Input	Interactive		
5:25pm - 5:50pm	Closing Remarks	General		

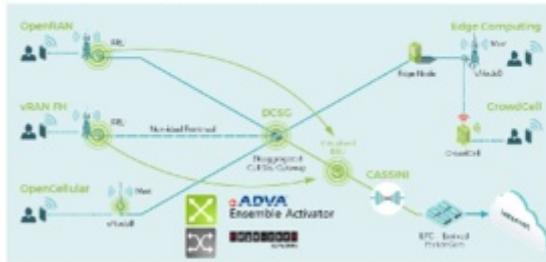
*Note: Agenda is subject to change based on input from Pipeline's Industry Advisory Board (IAB), attendee feedback, and presenters. Please check for updates.

■ ■ Included with regular admission.

■ ■ ■ Not included with regular admission. Additional participation required. See the How To Participate page for more information.

Brochures

Distributed cell site gateway from ADVA and Edgework
 Open and disaggregated path to 5G infrastructure



As innovation and growth in packet and wireless networks continues to accelerate, communication service providers (CSPs) and mobile network operators (MNOs) no longer have time to wait for their vendors to come up with higher capacity devices that meet the latest requirements. Now there's a new way to grow networks that combines the agility of software-based feature development with the performance and economics of bare-metal switches. Building a network for 5G access is now as simple as selecting a hardware component with higher capacity and installing the network operating system (NOS). And to help, ADVA and Edgework have combined forces to deliver a disaggregated cell site gateway (DCSG) solution that provides the required features in an open and multivendor fashion.

Meeting the bandwidth demand in 5G

Access speeds will increase dramatically for 5G networks, and base stations will move from 1GbE to 10GbE and 25GbE uplink interfaces. Backhaul networks must rapidly grow to 100Gb/s aggregated capacity. MNOs need to design and operate these higher-speed networks with proven technologies and established processes. At the same time, MNOs need to make their networks much more agile to unleash the power of 5G new radio (NR). They need to move from hardware-centric, static networks to software-defined architectures. With the latest software-defined networking (SDN) and network functions virtualization (NFV) network technologies, disaggregated radio architectures and networking

are paving the way for open, agile, and efficient mobile ecosystems.

Moving from closed to open

MNOs and CSPs want to break open single-vendor silos to increase competition and reduce cost. That has led to increasing interest in disaggregated networking with packet network devices implemented as white box switches and open network operating systems. That's why the Telecom Infra Project (TIP) defined the DCSG as well as OpenRAN. Both are essential to supporting the move to next-generation radio architectures.

According to TIP's [DCSG Technical Specification](#), the DCSG is "an open and disaggregated platform based on commercial/off-the-shelf components and

Whitepapers

Info Directions Earns Place on Inc. List as One of America's 5,000 Fastest-Growing Private Companies

5,000 Fast-Growth Companies Report Aggregate Revenue of \$214 Billion

VICTOR, August 13, 2009 – Inc. ranked software engineering firm Info Directions, Inc. on its annual ranking of the 5,000 fastest-growing private companies in the country. The list is the most comprehensive look at the most important segment of the economy – America's independent-minded entrepreneurs. Taken as a whole, these companies represent the backbone of the U.S. economy.

"Our third annual Inc. 5000 continues the most ambitious project in business journalism," said Inc. 5000 Project Manager Jim Melloan. "The Inc. 5000 gives an unrivalled portrait of young, underreported companies across all industries doing fascinating things with cutting-edge business models, as well as older companies that are still showing impressive growth."

Established in 1996, Info Directions is an Independent Software Vendor (ISV) that designs, hosts and installs billing, CRM and point of sale solutions for mobile, wireline and IP-based telecommunications service providers. Info Directions' software solutions, including its benchmark CostGuard® and Lexys Point of Sale™ products, help service providers eliminate the complexity of selling, activating, managing, billing and caring for customers. Info Directions also appeared on the Inc. 500 list in 2001.

"It is rewarding to be recognized by Inc. for accomplishing our strategic growth initiatives. We share this Inc. acknowledgement with our clients, who leverage our software solutions to create the new business models and superior customer experiences that drive both their growth and ours," said Don Culeton, president of Info Directions. "Innovation is one of the primary tenets on which Info Directions is built, and appearing on this list reinforces the importance of investing in our position as a leading developer of telecommunications billing, CRM and point of sale applications."

Despite the ongoing recession the aggregate revenue of the 5,000 companies that made the list increased to \$214 billion, up \$29 billion from last year, with a median three-year growth rate of 126 percent. Most important, the Inc. 5000 companies were engines of job growth, having created more than 1 million jobs since those companies were founded. Complete results of the Inc. 5000, including company profiles and an interactive database that can be sorted by industry, region, and other criteria, can be found on www.inc.com.

Brochures



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SS8's Xcipio platform ensures CSPs not only meet regulatory compliance, but are able to provide the most accurate data to intelligence agencies in real-time.

The Ultimate Edge: Building a Lunar Network

Robert Brumley, co-founder and chairman of Commstar



Microsoft .NET Framework 3.0
Customer Solution Case Study



Customer: GreatCall Inc.
Web Site: www.jitterbug.com
Customer Size: 100-5000
Country or Region: United States
Industry: Telecommunications
Partner: Info Directions Inc.

Customer Profile
GreatCall Inc., based in Del Mar, Calif., is a national mobile network provider and the creator of Jitterbug, a cell phone designed for and marketed to Baby Boomers and their parents.

Software and Services

- Products
 - Microsoft Office 2003, 2007
 - Microsoft Office Vista 2003, 2007
 - Microsoft Office Live Meeting
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 - Microsoft Exchange Server 2003
 - Microsoft Internet Security and Acceleration Server 2005
 - Microsoft SQL Server 2005
 - Windows Server 2003 Enterprise Edition
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 - Windows XP Professional
- Technologies
 - Microsoft .NET Framework

For more information about other Microsoft customer solutions, please visit: www.microsoft.com/cases/studies

Cellular Provider Manages Sizzling Growth with .NET System for Operations and Billing

"By implementing these new IT solutions, we were able to keep up with our tremendous growth and provide the services that our customers expect and deserve."

Ray Marks, Chief Operating Officer, GreatCall Inc.

GreatCall and its Jitterbug cell phone and service experienced blazing growth. Jitterbug's existing billing and operations systems were unable to keep up. After implementing the Info Directions' CostGuard XG operations and billing system, a product built on a Microsoft .NET framework, GreatCall averaged faster processing times than the previous system's best time, reduced the billing process time to less than two days and handled soaring growth.

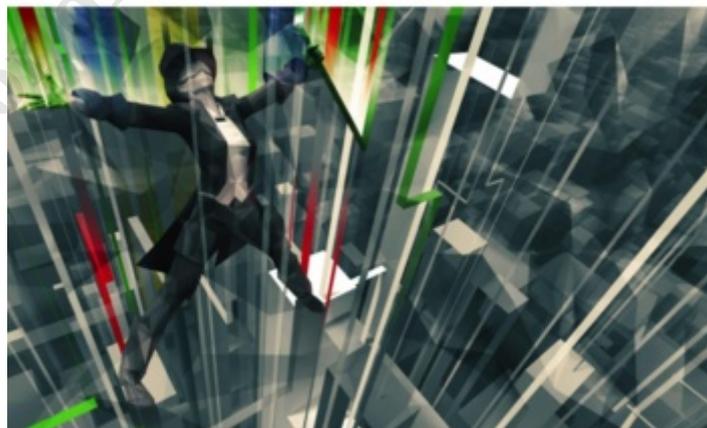
Business Needs

GreatCall, Inc., of Del Mar, California, is a mobile virtual network operator (MVNO) that developed a cell phone and service targeted to Baby Boomers and seniors. Its offerings proved so popular that the company was experiencing enormous growth on a monthly basis. GreatCall's network system of internally developed and off-the-shelf products for order entry, catalogs, receivables, collections, customer account management and other operations simply was overwhelmed.

Service levels suffered as customers and the company's ability to add new customers and get phones into its customers' hands was severely hampered. Simultaneously, the company wanted to explore its new national retail partnerships, which required efficient logistics programs. Leadership understood that it needed an automated system if it was to avoid the fate of other MVNOs that had crashed under the weight of their own solutions for lack of back-end systems that served their needs.



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FEBRUARY 24, 2010

**CLOSING THE COMPLEXITY GAP
A CASE STUDY IN NETWORK INTEGRITY**



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Cloud Connectivity Management Made Simple: Your Cloud Services Are As Good As Your Network

Bruno Giguère, Advisor – CTO Office, EXFO

INTRODUCTION

Cloud services are the Holy Grail for service providers. As enterprise customers look to reduce IT expenses, cloud services are looking more promising than ever in terms of achieving these savings. Although multiple stakeholders are increasingly involved in the delivery of cloud services, none have as much impact as cloud carriers.

But first, let's start with a simple question: "What exactly is cloud computing?" According to the definition recently published by the National Institute of Standards and Technology (NIST), "Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." The document further elaborates on its definition by providing a list of essential characteristics, in addition to service and deployment models. The essential characteristics are: on-demand self service, broad network access, resource pooling, rapid elasticity and measured service. A definition for each characteristic is provided in the following [NIST publication](#). By applying a network view of these characteristics, it becomes immediately clear that a static and classic network is not able to deliver on these promises. An intelligent and dynamic network is mandatory to delivering on these essential characteristics.

Cloud transport connectivity can be described as the connectivity between cloud consumers and cloud content. This connectivity makes delivery of cloud computing services to the cloud consumer possible. In order to deliver this type of connectivity, cloud carriers need high-performance services with multiple classes of service and high availability.

Cloud application connectivity can be described as the connectivity between cloud content. This connectivity provides the ability to move data between the computing resources via different data centers. For cloud application connectivity, services must be high performance and be available at all times.

This application note discusses the technologies being used to deliver the different type of connectivity, and the management steps (e.g., activation, performance monitoring and troubleshooting) required to successfully deploy cloud computing services.

GOT CONNECTIVITY?

To deliver cloud computing services, cloud providers must possess the computing infrastructure necessary to process and store very large amounts of data, and rely on cloud carriers to connect all the pieces together. This section covers the different types of connectivity used to deliver cloud computing services in more detail, and also covers the technology used to achieve this connectivity.

Cloud Transport Connectivity

The original connectivity strategy for cloud computing was the Internet. What better a solution than the most ubiquitous WAN technology to access data centers? Although the Internet is great for consumer applications, it lacks the attributes mandatory for enterprises: security, network performance, data governance and regulatory compliance [IMEF, CSI].



Figure 2. Current challenges in delivery of service delivery. (Source: Matrix Editorial Service)



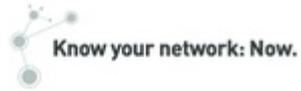
Figure 1. Cloud connectivity.

Figure 1 shows the data flow for delivering cloud computing services and the two types of connectivity required, as follows:

1. Cloud transport connectivity
2. Cloud application connectivity



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