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PIPELINE / VOLUME 20 / ISSUE 6

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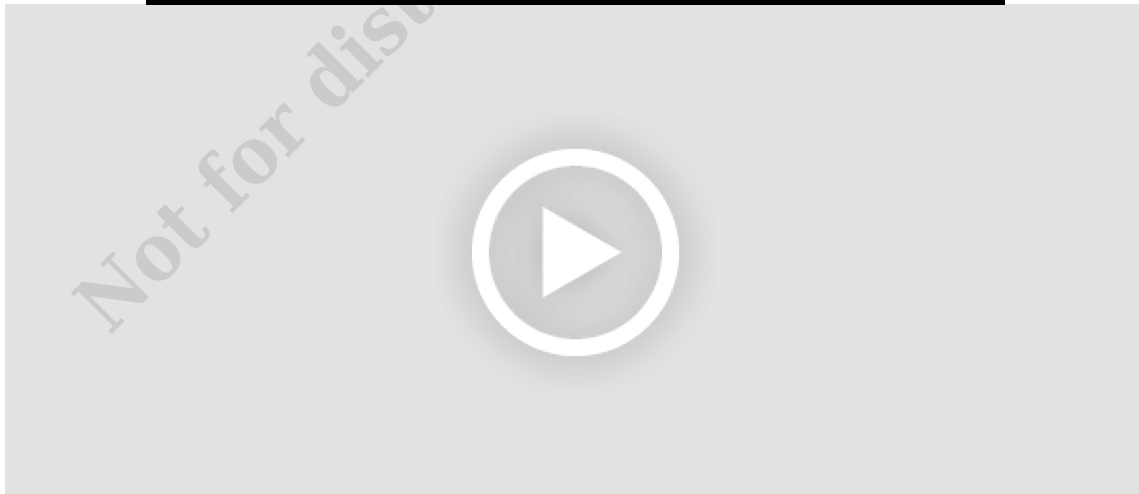
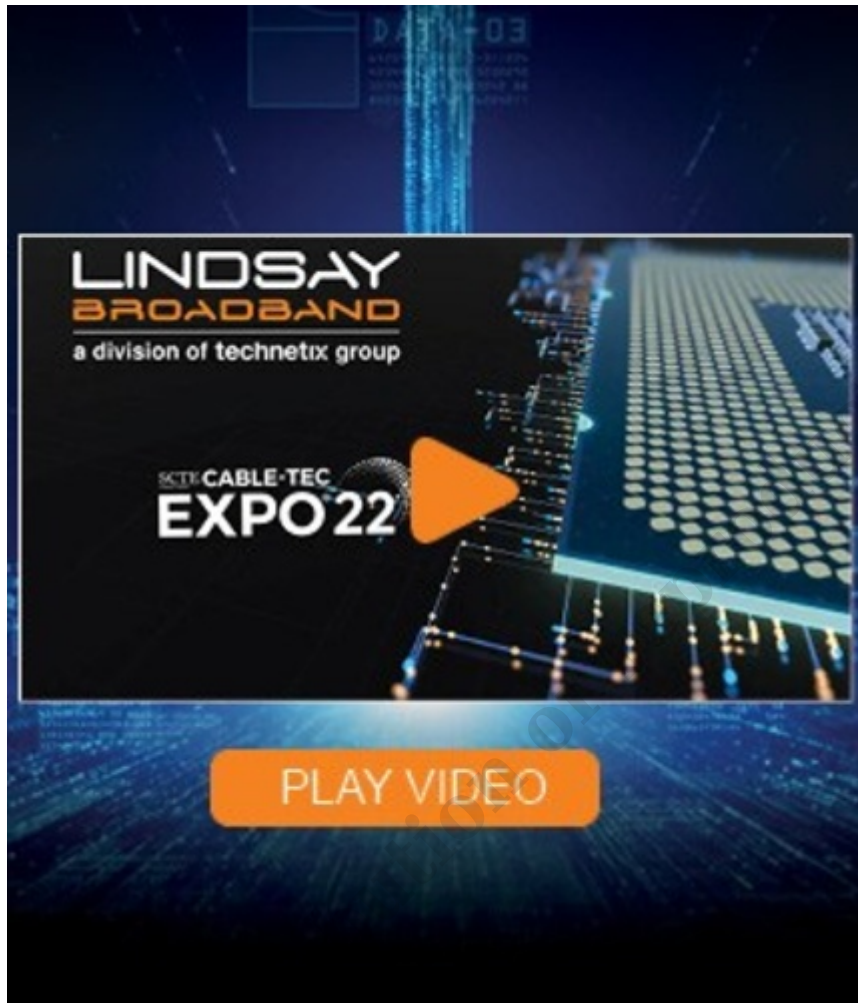
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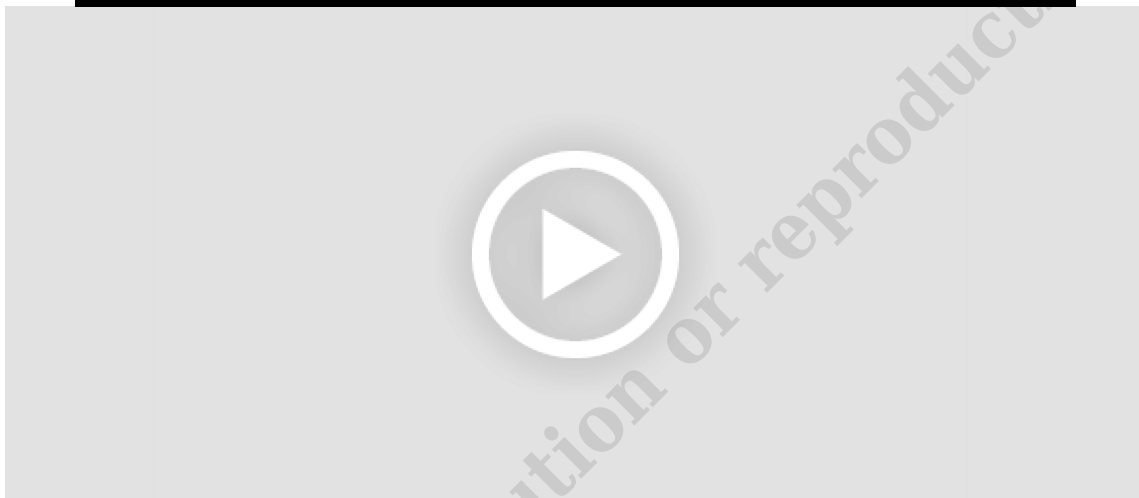
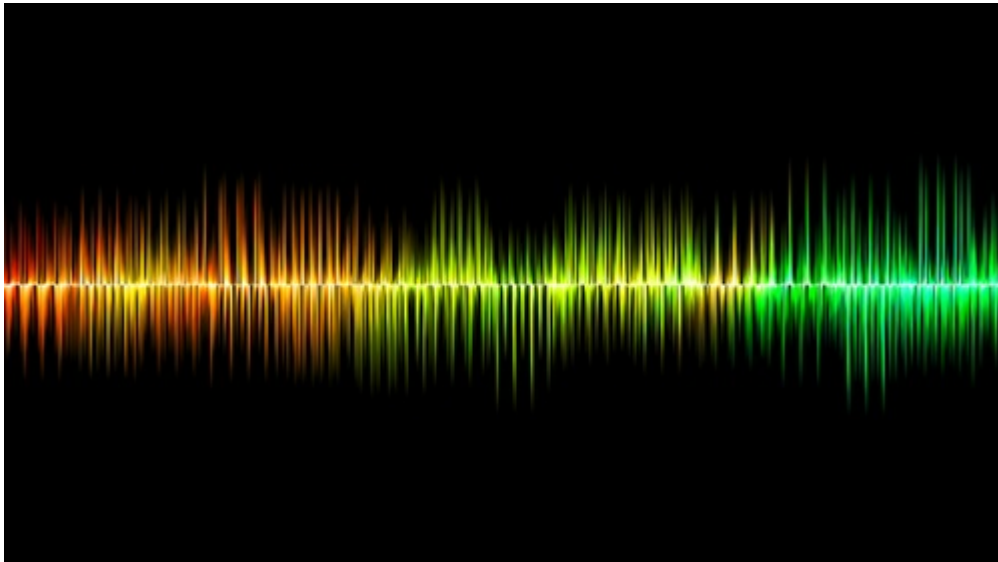
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### End-to-End Solutions for Broadband Networks

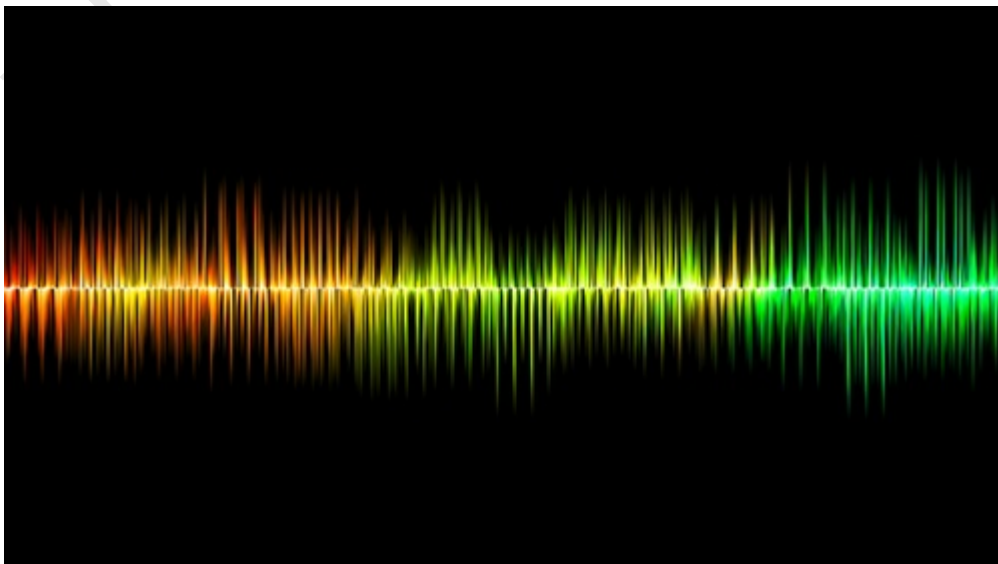
In case you missed Lindsay Broadband - a division of Technetix group at the SCTE Cable-Tec Expo, this video highlights the must-have, end-to-end solutions for your network.





## 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.

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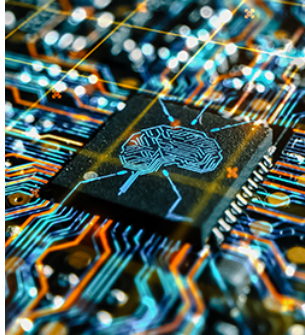
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**Pipeline**  
Technology for Service Providers

### Navigating the Chaos: Identity Access and Configuration Management Strategies for SDN & NFV



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## Case Study: MVNO Integration

**PROJECT**  
MVNO integration

**SITUATION**  
A converged provider, desiring to offer wireless services to its customers, acquired the regional subscribers of a national provider. This effort required the conversion of approximately 35,000 subscribers as well as the MVNO integration to this national provider to support these customers as well as add new customers.

**CHALLENGE**  
Provide a business-to-business MVNO integration from the first provider's system to other provider's system, with a complex, in-store conversion procedure for handset swaps.

**RESULTS**

- Cycle30 designed and integrated a complete order to cash business integration to support the MVNO offering
- Solution included direct order-entry integration, provisioning and LNP integration as well as end customer and wholesale billing integration and reconciliation
- Conversion process involved a challenging, in-store manual conversion and phone swap with an average customer handling time of 35 minutes
- Project finished in six months with a complete system for ordering, provisioning and billing
- 35,000 subscribers converted within six-month timeline with less than two percent attrition

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## FSP 3000 OLS

### A versatile and truly open line system

5G and cloud-based applications offer enterprises, carriers and service providers enormous potential for growth. However, this continuous and rapid change also creates the need for more network capacity and flexibility. It's essential to build today's networks on an open, flexible and scalable optical layer ready to accommodate evolving demand and innovation. Featuring a fully modular and open design, our FSP 3000 open line system (OLS) provides complete versatility and best performance in metro, core and data center interconnect (DCI) applications.

#### Truly open

Open disaggregated optical networking is one of the industry's hottest trends. By decoupling terminal functions from the line system, this approach offers complete flexibility to adopt the latest technology when and where needed. Our FSP 3000 OLS is truly open, allowing total freedom to evolve and optimize each network layer separately. Network operators can leverage and expand their infrastructure at any time with the technology of their choice. What's more, with open and standard interfaces, our FSP 3000 OLS easily integrates into software-controlled networks.

#### Build your own OLS

Our FSP 3000 OLS empowers network operators to create the solution that meets their exact requirements. With a modular architecture, multiple amplification and multiplexing options, and different chassis sizes, our FSP 3000 OLS enables customized solutions. Operators can simply mix and match the optimum filters and amplifiers and pack them into the best-fitting shelf. This makes our FSP 3000 OLS ideal for any type of network infrastructure.

#### Future-proof investment

Coherent modulation schemes are becoming increasingly diverse to maximize transport network capacity and minimize the cost-per-bit of transport. Flexible terminals with variable modulation formats and baud rates enable higher capacity-reach rates. The ultimate network performance relies also on line system capabilities, and that's why open line systems have increasingly become important strategic assets. With a combination of high-performance features, our FSP 3000 OLS transports any coherent modulation format as well as all varying signal baud rates with best performance. The high-resolution flexgrid and modular architecture of our ROADMs guarantee a future-proof OLS that can scale and accommodate any modulation format and baud rate. What's more, our FSP 3000 OLS provides a new level of flexibility with configurations able to support direct detect technologies.

#### Your benefits

- ▶ **Open hardware**  
No technology or vendor lock-in; successfully tested in multi-vendor environments
- ▶ **Open programmable interfaces**  
Easy integration into software-defined networks with open, programmatic APIs
- ▶ **For any type of network infrastructure**  
Modular design with multiple filters and fiber options to meet your exact requirements
- ▶ **Purpose-built components**  
Amplifiers and fiber optics engineered for metro, core and DCI-specific demands, and optimum transport of latest innovation, e.g., 40GZR and high baud rates
- ▶ **Visualization and control**  
Comprehensive monitoring and diagnostic tools, spectrum visualization and fiber surveillance
- ▶ **Eco design**  
High-density design with low power consumption
- ▶ **Flexible footprint**  
Chassis sizes from 1RU to 12RU, ETSI / data center rack, AC/DC power options



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# Customer-Focused Experience Management Must Be an End-to-End Process



By Susan McHale and Sheryl Kingstone | June 2011

## Key Takeaways

- The new market reality for communications service providers (CSPs) is to transform their business around their customers.
- Yankee Group believes enhancing customers' experience is CSPs' last remaining opportunity for real competitive differentiation.
- Today's CSP operations infrastructure is neither meeting the needs of customers, nor is it as cost-effective as the competitive market requires.
- CSPs must have an end-to-end perspective on customer experience.
- Intelligent, interactive operations software is key to delivering on this perspective.
- Transformation to customer-centric operations requires a process-based overlay to existing operations.

## A Good Customer Experience Is Essential in the Connected World

CSPs are experiencing pressure for a fundamental transformation due to the hyper-convergence of connectivity, media, mobility and devices. In a world where product differentiation leads to short-term success, customer-centricity is paramount. But unlike earlier times, managing customer experience is not simply a matter of capturing customer information and order requests. Today's reality requires CSPs to evolve from an operational service strategy to a more customer-focused experience management model. This is the only way they can differentiate from the competition as they strive to increase customer loyalty and overall spend.

Likewise, CSPs are grappling with economic and ecosystem challenges. Iconic devices such as the BlackBerry and iPhone have stimulated customer demand for more sophisticated tools and services, changing their connectivity lifestyles. In the past, innovation was constrained by less feature-rich phones with architectures proprietary to specific CSPs. The new world order, however, is driving change across consumers, devices, data connectivity and application ecosystems (see Exhibit 1 on the next page).

## The Customer Is Now in Charge

Yankee Group first identified the concept of the Anywhere Consumer<sup>®</sup> in 2007 as a class of consumer that demands connectivity at the core of their every activity. This point of view influences their buying behaviors, from the devices they acquire and the services to which they subscribe to the applications they download.

Today, we sharpen our focus beyond Anywhere to connected experience. This takes customers to a new world of always-on connectivity, smart devices with intuitive interfaces and cloud-based content and applications, all delivered according to the customer's expectations, including:

- More channels of interaction, e.g., mobile and social networks
- Immediate delivery of content and applications
- The latest digital lifestyle solutions

This custom publication has been sponsored by Progress Software.

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**White Paper**  
**Telco Triple-Play Service Fulfillment**

Prepared by  
Alan Breznick  
Senior Analyst, *Heavy Reading*



[www.heavyreading.com](http://www.heavyreading.com)

On behalf of



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December 2010

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**White Paper**

**Managing Complex Multi-Enterprise  
Selling & Ordering Process Critical for  
Next-Gen Order Management Solutions**

Prepared by

Ari Banerjee  
Senior Analyst, *Heavy Reading*



[www.heavyreading.com](http://www.heavyreading.com)

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## 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		
9:15am - 10:00am	Opening Remarks	General	Setup	Open
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: Amazon and CT Invision)	General		
12:00pm - 12:45pm	Leveraging Big Data for Enterprise Business Intelligence (Featuring: Microsoft and Skype)	General		
12:45pm - 1:45pm	Topic Roundtable Luncheon	Networking	Open	
2:00pm - 2:45pm	The Agile Architecture (Featuring: Dr. Tom Wisa, CT Invision and Tello)	General		
2:45pm - 3:30pm	Delivering Elastic Services (Featuring: AppleCare, Comcast and TIERONE)	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		
9:15am - 10:15am	Market Analysis: Industry Insights (Featuring: AppleCare, CT Invision and NPRO)	General		Open
10:25am - 11:25am	Risk Mitigation: Advanced Security Planning (Featuring: Level 3, NPRO and Verizon)	General		
11:25am - 12:15pm	Competitive Edge: Leveraging Content and WebRTC (Featuring: AppleCare 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.

## Whitepapers

# never underestimate the power of identity

## hackers in an increasingly vulnerable digital world

Without question, the power of the digital economy permeates nearly everything we do. Evolving well beyond eCommerce and mBanking, the connected society includes social media, video subscriptions, file sharing, ride hailing, and home stay, all of which have quickly become a regular part of our lives every day. While the convenience is alluring, the risks can be alarming. These applications often contain payment and other confidential information that need to be secure in order to ensure that only the right people see properly collected and access the information of users involved. To complicate matters further, applications are constantly trying to improve the user experience by reducing the friction in the authentication process. Unfortunately, making users easier for the attacker is also making it easier for fraudsters.

"Hackers can have access to your bank accounts, bitcoin, payment services and many other aspects of your digital life before anyone is the wiser."

According to an article by CBS News New York, a woman lost more than \$20,000 USD when a fraudster posing as her bank stole her account. The article says the scammer did this by telling the woman her account was compromised, then sent her text messages to change her password - giving the con-artist access to her account. Hackers can have access to your bank accounts, bitcoin, payment services and many other aspects of your digital life before anyone is the wiser. That is a powerful proposition for fraudsters.



Clearly, the digital world is increasingly vulnerable. Fraud is getting progressively sophisticated and more difficult to prevent resulting in billions of dollars in financial losses annually. Victims are not only unsuspecting senior citizens and elderly, disconnected millennials, but also social media geeks and savvy young consumers. Even the chief technology officer of the very organization vested with the responsibility to protect consumers by stopping unfair, deceptive or fraudulent practices in the marketplace has been a victim of fraud. Interestingly, the telephone number, which is the entryway for much of this fraud, is being exploited by adept criminals in novel ways. Fortunately, the victims no longer need to be victimized because much can be done to protect consumers from this type of identity theft and related harms.



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# Use Semantics to Deliver Flexible Service Management and Avoid the Risks of OSS/BSS Transformation



by Arindam Banerjee | April 2009

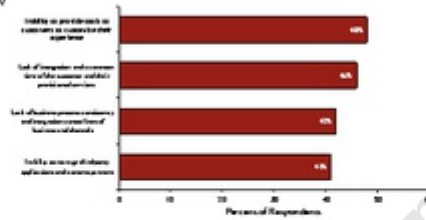
## Executive Summary

The customization and convergence of services across application silos and disparate networks are critical to communications service providers (CSPs) aiming to provide innovative services, reduce customer churn and drive average profitability per user. CSPs realize that providing innovative services is not enough; it is critical to offer end users customized services with consistent and flawless quality of service (QoS), which is impossible without an end-to-end unified customer- and service-level view. This is where most service providers falter. Our research clearly points out the glaring problems that exist with most service providers' back-office OSS/BSS systems, which are typically complex, disjointed and lack the agility necessary to present a coordinated 360-degree customer-centric view. In a recent global CSP survey conducted by Yankee Group, more than 60 percent of surveyed global CSPs agreed that improved customer experience is directly linked to improved ARPU.

Most service providers take a top-down approach to express customer and service views. However, they often adopt a service model that in most cases does not capture the complexity of misaligned as well as heterogeneous underlying infrastructure. Only when the relationships among underlying systems, services and customers are mapped out of the infrastructure is it possible to achieve the goal of traditional service modeling. Therefore, what is needed today is a bottom-up approach that looks at how existing systems map to existing customers instead of a more traditional top-down approach.

CSPs have invested billions to streamline and modernize their OSS/BSS infrastructure to achieve the agility required to see all of their assets in one view, which in most cases has failed to deliver the desired service-level transparency. Exhibit 1 illustrates the critical factors inhibiting CSPs from being competitive and delivering innovative services to customers. Not surprisingly, the inability to have a common view of customers, lack of customized service delivery and business process inconsistency are the top factors that hamper service providers from rolling out innovative services.

**Exhibit 1.**  
Critical Factors Inhibiting CSPs from Being Competitive and Delivering Innovative Services  
Source: Yankee Group, 2009



In light of current economic challenges, it is clear that telecom service providers are squeezing their capex budgets to align with lower revenue growth expectations. Hence, although a unified end-to-end service model remains on top of their priorities to instead of full-scale and expensive transformation exercises, CSPs and managed service providers are looking for an alternative low-risk, incremental path toward a unified service model. In this report, we look at CSPs' current operational issues, take a deep dive on a unique, alternative semantics-based approach toward achieving a unified virtual service model, and investigate how such an approach can enable customer consistency by solving the problem of siloed infrastructure data.

This custom publication has been sponsored by **Drinking Systems**.

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**Integrating to Mediaroom: Using  
Media(n) to Simplify the Experience  
A White Paper**

Document Version: 1.0

Date: July, 2011

Author: Fredel Thomas, Director of Product Management



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## Order-to-Cash Billing Services

Cycle30 provides a completely hosted platform for scalable and reliable converged billing. It includes convergent charging, rating and balance management for existing and emerging services across a variety of markets.

Unlike a traditional billing system you need to deploy, maintain and host yourself, the Cycle30 order-to-cash platform is ready today, so you can get to market quickly.

### Order-to-Cash Services

Today's operator needs to focus on acquiring and retaining customers and delivering service. Your operations rely on accurate, timely revenue assurance.

From the moment of customer contact and order, the Cycle30 platform supports your operation by managing and accounting for the revenue associated with your products and services all the way through invoicing, reconciliation and collections.

At the start of your interaction with customers, Cycle30 provides connections for core sales activities, such as channel sales and retail commission tracking.



### CUSTOMER MANAGEMENT

Manage your customer interactions via integrated systems in the Cycle30 platform. The Cycle30 Customer Management suite enables the major account management functions below.

- Account Management
- Order Entry
- Credit Checking
- Bulk Ordering
- Contract Management
- Serviceability

### SERVICE FULFILLMENT

Cycle30 provides pre-built workflows and integration to LMR the order upon completion.

- Order management
- Activation
- Inventory management
- Workforce management

### BILLING AND REVENUE MANAGEMENT

The core of the Cycle30 platform ensures your revenue stream is completely covered, from customer credit workflows to invoicing and collections.

- Product catalog
- Enterprise Mediation
- Rating & Pricing
- Post-Paid Billing
- EBR
- Billing
- Collections
- Invoicing
- Reconciliation
- Clearinghouse Reconciliation
- Financial Reporting

### SERVICE ASSURANCE

Cycle30 service assurance helps you maintain your customer's service, diagnose issues, and ultimately drive revenue assurance.

- Trouble Management
- Troubleshooting Tools
- Usage Data Collection

### BUSINESS INTELLIGENCE

Unlock the business intelligence inside your converged billing data, and better understand your customer's habits, trends, purchasing behavior and needs, as well as where to focus your efforts.

- Data Quality
- Real-Time Data Warehouse
- Ad-Hoc Queries
- Financial, Operational, Marketing, Subscriber and Invoicing Reports

### INTEGRATIONS

Cycle30 provides a large set of pre-set workflows and integrations to LMR orders upon completion. In addition, specific integrations can be customized beyond the integrations below.

- Business to Business
- Financial Reach
- Content Providers
- Point-to-Point
- API
- Other Third Parties

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## Mobile Video Policy Control

### Benefits at a glance

- Generate new revenue with mobile video services
- Create mobile video services tailored to specific customer segments
- Align revenue and network costs using dynamic policy controls

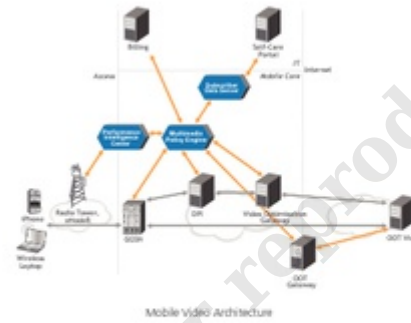


### Business Requirement

There is no question that video is both popular and consumes more network resources than almost any other application. A look at current data points tells the story: YouTube has become the second largest search engine. Mobile video is predicted to grow 66-fold from 2009 to 2014 and consume 66 percent of all mobile bandwidth by 2014. Clearly, finding ways to mitigate the impact of mobile video on the network in a way that still meets consumers' demands is critical to the success of mobile operators.

### Challenges

Previous network solutions for handling data services primarily centered on static service provisioning in which operators take a "one-size-fits-all" approach. However, with the advent of data-rich services like mobile video, that approach has a number of shortcomings. In fixed networks, geographical service demand can be accurately predicted and the network built out accordingly. However, mobile networks, by nature, enable movement, which makes it more difficult to predict geographical service demand and network build out. Moreover, operators are increasingly investigating and deploying tiered pricing plans, which offer end users a variety of service levels and options that go far beyond the "one-size-fits-all" static provisioning approach.





## Network Integrity Controller

Set sail with total visibility of your network – and the journey ahead. Our Network Integrity Controller automates software audits of network devices in multi-technology, multi-vendor environments.

### Check your gear regularly

As service providers build out new networks that provide new services—such as VoIP, video, and other high-bandwidth offerings—as accurate picture of the network can mean the difference between rolling out new services on-time, or being a market opportunity to a competitor. In today's environment, network managers are facing a conundrum: more traffic, more services, and more complexity have to be delivered with fewer people, fewer errors, and fewer outages.

Network integrity is the key to making sure that your gear will get you where you want to go. In spite of quantum leaps in network architecture and technology, maintaining configuration integrity has remained a manual, time-consuming, and error-prone craft. Design standards for device configuration to support VoIP, a new wireless data app, or an LTE network service may be painstakingly developed in the lab, but actual implementation in the field drifts rapidly through error, misplacement, and provisioning processes.

### Use accurate maps

The only way to achieve complete network integrity improvement is, in spite of the opposing forces of network expansion and operations

resource contraction, is to automate the quality feedback loop of network audit, discrepancy check, and gold standard maintenance. Nakina's Network Integrity Controller is designed to show exactly which equipment is present, ensure that the firmware, patches and operating systems that run the equipment are correct and up-to-date, and that all software parameters are set as intended.

### Set sail with confidence

Most network outages are like navigation errors—they are the result of human error. The Network Integrity Controller minimizes the risk of outages by reducing inadvertent errors through sophisticated online auditing and parameter checking. It can scale to support the auditing of thousands of network elements and network-attached servers. Because it is automated, and works in any environment—LTE, Ethernet, Fibre, IMS, or other—with equipment from a wide range of vendors, the Network Integrity Controller streamlines tedious spreadsheet maintenance with automated table and report creation. With the data generated by the Nakina Systems solution, you can bring services to market faster, reduce outages as these services scale, and realize significant cost savings.

### Key Functions

Nakina Systems' Network Integrity Controller automates the most tedious and error-prone part of your job—maintaining network integrity. With an accurate picture of the network, you can feel more confident about the state of the network and your ability to deliver new services on-time and on-budget.

### Data Ingest

- Store gold standard data in a common baseline data repository
- Import data or manage the life cycle of the gold standard input

### Data Collection

- Extract real-time settings from networks

### Audit

- Compare planning tool reports or templates to live network views, using specified tolerance criteria
- Display and report discrepancies
- Provide notification of any service-affecting change

### Parameter Baselineing

- Create hierarchical templates of parameters based on groupings
- Compare and commit settings across a network

### NE Resource Audit

- Select by NE or group of NEs
- Customize and file output

### Reconcile and Configure

- Apply override network view with planning tool data
- Configure specific parameters on specific elements
- Re-audit to confirm changes



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Interconnected Applications**

Implemented by a communication and media service  
provider

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