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PIPELINE / VOLUME 20 / ISSUE 7

PL

THE GATEWAY TO IOT INNOVATION

WITH: **RAD**

CLOSING THE INDUSTRIAL IOT DIGITAL DIVIDE

WITH: **celona**

GEN AI INSIGHTS FOR IOT

IOT SECURITY FOR CRITICAL INFRASTRUCTURE

THE EVOLUTION OF **eSIMS**

PROACTIVE DISASTER MANAGEMENT

IOT TRANSFORMATION & **INDUSTRY 4.0**

**NETWORK VISIBILITY FOR IOT
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THE DEVICE REVOLUTION



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Speakers Announced for SCTE TechExpo24

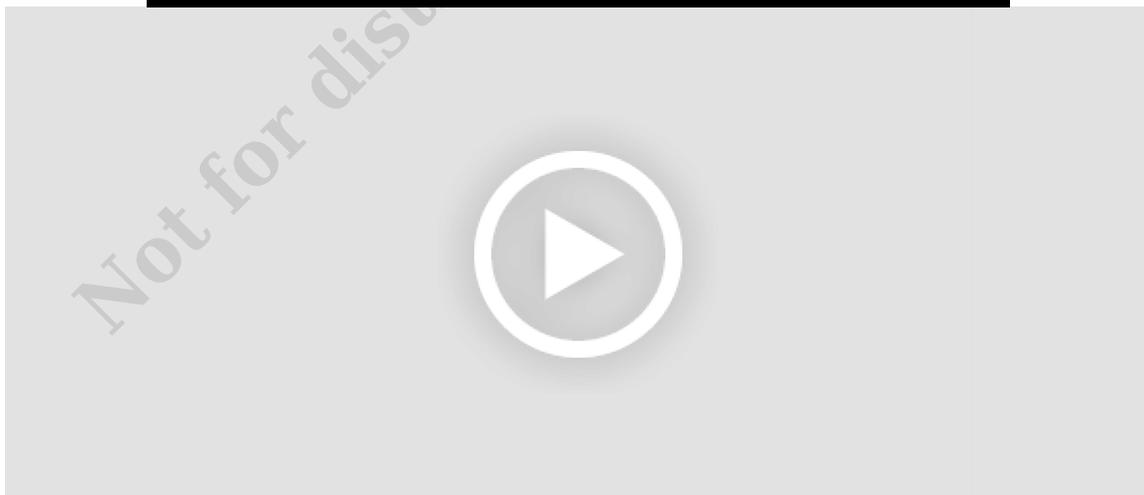
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Official Network Equipment Partner for the LA28 Olympic Games

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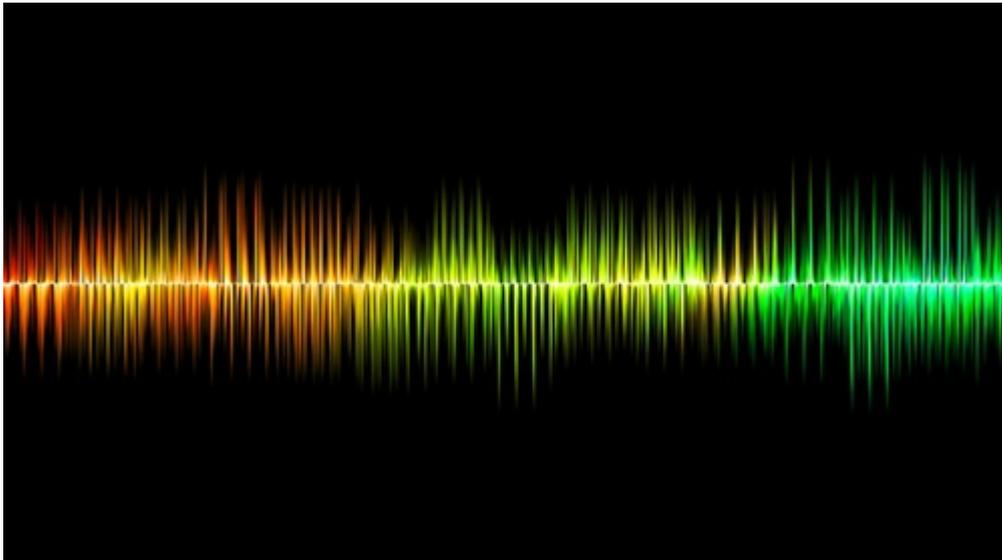
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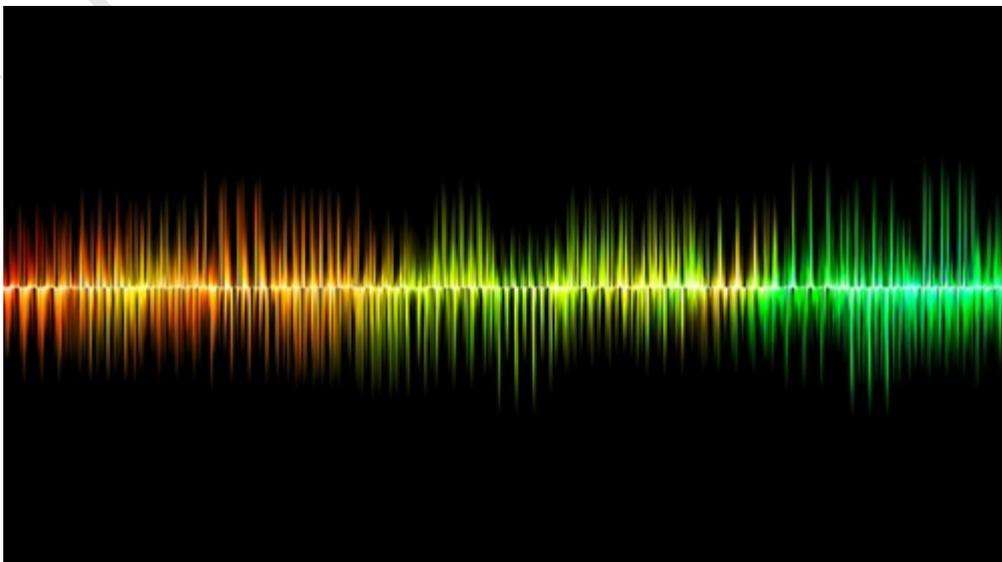
End-to-End Solutions for Broadband Networks

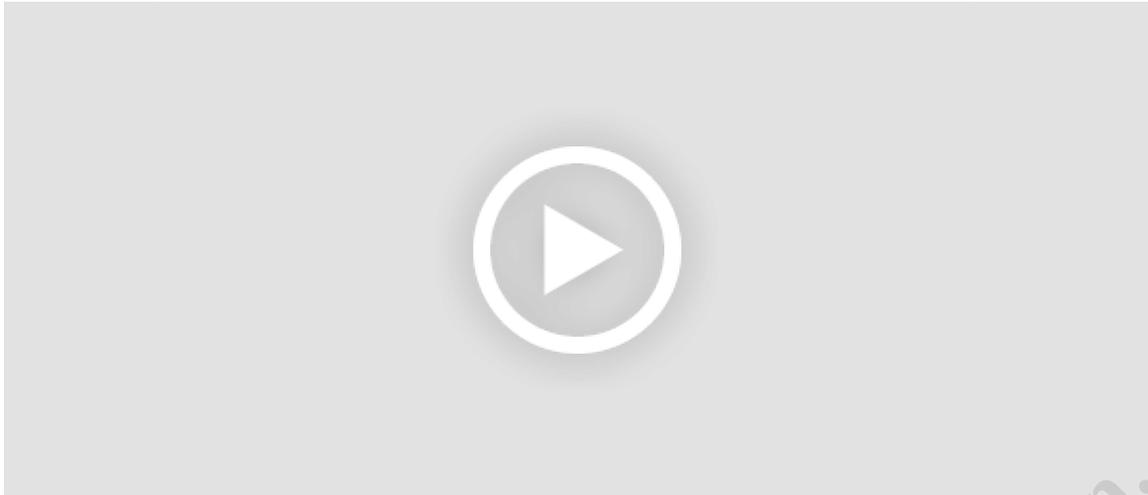
In case you missed Lindsay Broadband - a division of Technetix group at the SCTE Cable-Tec Expo, this video highlights the must-have, end-to-end solutions for your network.



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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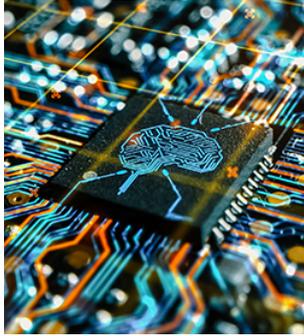


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Building the Future with Broadband

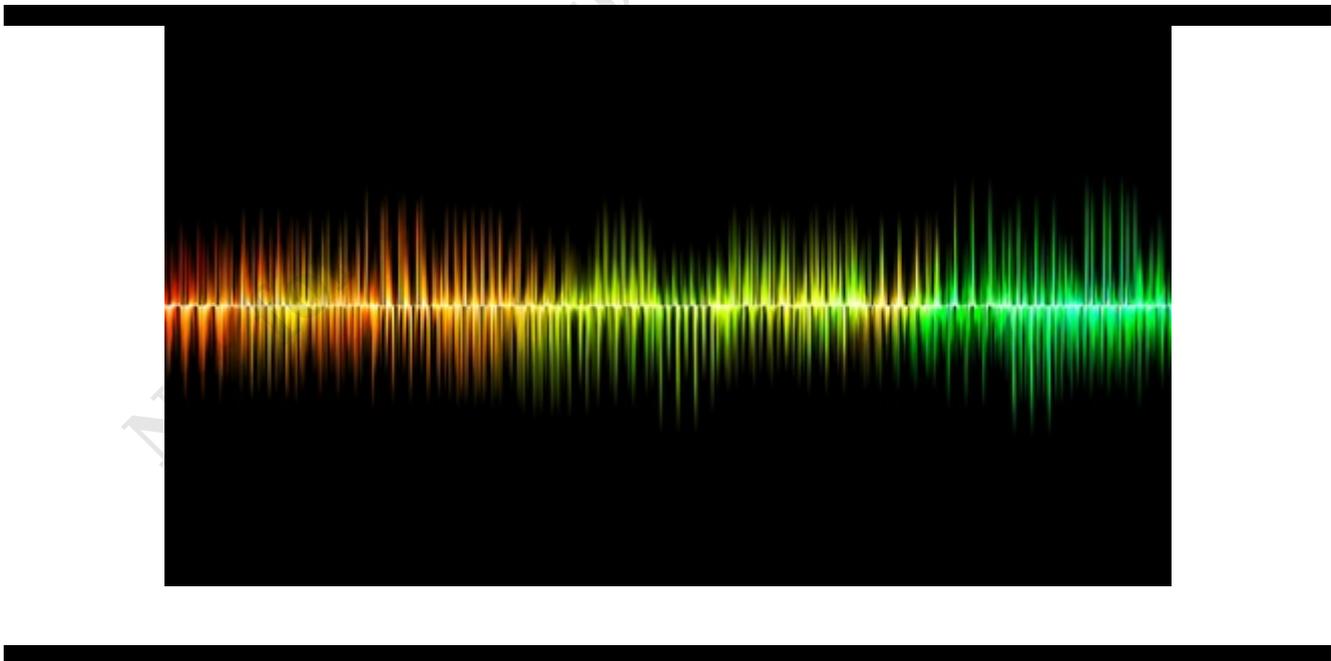


Creating Communities

Communications service providers play a vital role in building rural America. Connecting unserved or under served communities through broadband technology improves their way of life and closes the digital divide by providing economic opportunities otherwise not possible.

CHR Solutions is a proven industry leader with over 75 years of experience and will help you invest in broadband. Our complete solution gives you the tools necessary to make strategic business decisions for building, marketing, and monetizing your network.

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**YOU
HAVE THE
VISION
to grow your
infrastructure,
WE
HAVE THE
RESOURCES
to bring it
to life**



Looming deadlines, limited resources and a fiercely competitive market make it difficult to complete your wireless network. By outsourcing your **ENGINEERING, FURNISH AND INSTALLATION (EF&I)** we'll ensure the job is done right and on time.

CHR's experienced engineering and technical teams combined with our multi-vendor relationships and decades of regulatory experience ensure a successful integration of your wireless system - everything from site acquisition to optimization.

- Network architecture and design
- Multi-vendor management and procurement advantages
- Logistics and support (Rack and Stack)
- Implementation and training
- Regulatory and finance
- FTTH, IP and IPTV specialties
- 4G wireless core and site acquisition/turn up



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e-billing and Analytics Solution

Increase billing transparency and control, enhance customer experience and loyalty, reduce support costs, and deliver faster ROI.

Customer Experience Competitive Advantage

Faced with the challenge of how to increase profitability, Communication Service Providers (CSPs) are increasingly focusing on customer experience as a way to differentiate from the competition, maximize revenues and reduce costs. Business customers represents a significant source of revenue for many CSPs and, as such, it's vital to provide high levels of customer service to attract and retain these key customers and maximize their lifetime value. The e-enablement of customer experience is an important factor in improving customer experience while improving efficiency and driving down costs.

In the continuing search for new revenues, CSPs have expanded the range of services they provide to their business customers to include mobile voice and data, fixed-line voice, IP data services — with a corresponding increase in billing complexity and, in some cases, a decrease in customer satisfaction due to the siloed presentation of billing information for each service type. As a consequence, CSPs are looking for ways to evolve their customer experience to new levels of interactivity with a single view of services through the provision of unified communication channels. To achieve this goal, CSPs have to be able to abstract the customer experience layer from the underlying billing and CRM infrastructure, which often means dealing with multiple complex legacy source data systems that can hinder the development and delivery of e-enabled customer experience.

Customer Needs

In maturing markets, business customers are increasingly basing their purchasing decisions on service quality and support rather than on price alone. Hard-working managers are demanding access to

systems and tools that enable them to become more productive, simplify their tasks, take control of their organizational spend, and allow them to effectively manage their relationship with the CSP. Specifically, these customers want to have convenient and secure access to their consolidated service and usage information in a single online location; with the ability to view summary spend information across their organization, view out of the box and custom reports and, drill-down to analyze the detail of service usage.

MDS e-billing and Analytics Solution

MDS e-billing and analytics solution provides businesses of all sizes, from global corporate enterprises to SMBs and sole traders, with secure online access to their consolidated accounts and electronic billing information. They permit customers to view trends, analyze details of spend and take control of their communication services. The MDS e-billing and analytics solution empowers customers to make informed business decisions, enhances the loyalty and lifetime value of these important customers, provides additional value to attract new customers and retain existing ones, and reduces operational and support costs.

Utilizing a powerful analytics engine, MDS e-billing and analytics solution simplifies the task of integration with legacy billing and CRM systems, delivering rapid go-to-market, low-risk integration, accelerated time-to-value and lower total cost of ownership.

E-Billing and Analytics Solution



Case Studies



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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Whitepapers

CSG Point of View: Making the Most of Policy Management



"It is now generally agreed ... that the market focus for policy control and its related technologies has shifted from basic traffic management to enabling the implementation of real-time discounting, upselling, cross-selling and a range of mobile broadband services as yet unimagined. Fundamental to the realization of this bright new and hopefully profitable future is the requirement for close integration between OLC (On-Line Charging) and the PCRF." Informa Telecoms & Media

Profitability as well as Control

The exponential growth of mobile data traffic has been well-documented. According to Cisco, mobile data traffic in 2010 was three times the size as that of the entire global internet in 2000. As a result, Communications Service Providers (CSPs) have understandably been scrambling to control the amount of traffic on their networks before the networks get swamped and customers get more than disgruntled.

On its inception, many pundits lauded policy management as the solution to cure all network woes. CSPs could throttle back heavy users, avoid congestion and keep customers happy.

But this approach has limitations, since the heaviest users are potentially the heaviest spenders. Policy management practices restrict their usage without exploring other, more profitable mechanisms for traffic shaping. Mechanisms that can earn the CSP revenue as well as offering the CSP – and importantly the customer – control over their own destiny.

'Policy 2.0' has emerged as an improved model for CSPs – add some charging to policy management to enable operators to extract revenue from the high-end users, not just restrict their access/ bandwidth/ usage.

While this development goes some way towards delivering on the potential that policy management has to offer, it does not go far enough. True integration of policy management with sophisticated online charging provides the opportunity not only to manage

bandwidth and even gain revenue, but to deliver truly innovative solutions to service providers, to offer compelling value to customers and a competitive advantage in the market.



Policy Management Develops

Initially, faced with the dramatic growth in data on their networks, CSPs turned to policy management to fix particular, urgent problems. They needed to protect their network – and quickly.

Subsequently, CSPs have taken a more holistic approach to policy, implementing more scalable solutions that address multiple issues across the business.

Today, there is increasing recognition that charging needs to be utilized alongside policy in order to grow revenue. When combined with policy, charging can be used, for example, to offer top-ups to customers who are about to exceed their download cap, providing the

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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 100Gbit/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 giving 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 DCSSG as well as OpenRAN. Both are essential to supporting the move to next-generation radio architectures.

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

Videos





TRANSFORM YOUR SERVICE ORGANIZATION
INTO A PERFORMANCE-DRIVEN LEADER



Ten Key Factors for Selecting a Network
Performance Management Solution

 SevOne

White Paper

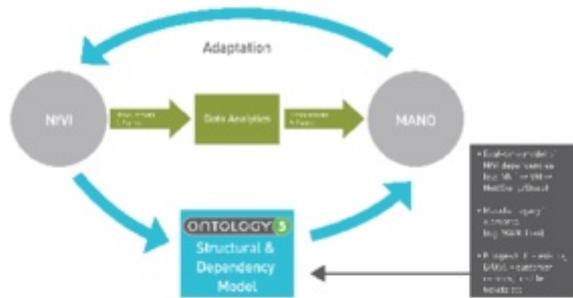
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As NFV moves from labs and trials into production, the need to assure the services it delivers has become urgent, but legacy tools struggle to deliver because they are unable to absorb the new reality of automated, high-speed orchestration.

Ontology 3 builds a real-time service topology across legacy, physical, logical and virtual service components and uses it to power next-generation service inventory and assurance functions for NFV, hybrid and multi-domain services.

This complete view of service elements, at all layers in the infrastructure in complex and high-automation environments, is indispensable to operationalising NFV enabling functions such as:

- Service assurance and service impact analysis in both next-generation and hybrid environments
- Fault investigation
- Coordination of multiple orchestration components
- Close integration with the OSS/BSS - required for functions such as order and trouble ticket management.



Building coherent and complete views of "legacy" infrastructure and services is a hard problem because of the variety and quality of the source data required to do so: it is spread out over many systems and is generated by processes with many manual steps that introduce noise. This is a problem that Ontology 3's Intelligent 360 for Network Operators has already solved.

The high-automation in virtualised environments will mean that data is of much higher quality - within each of those environments - but it will nevertheless come from a range of sources - VMs, orchestration, data centre management and, of course, the OSS - and it will be much higher velocity data. OSS and network data will start to look like "big data": high velocity, high volume and high variety. Ontology 3's real-time features are ready to address this.

Cost-effectively combining these two worlds is what Ontology 3 does, so you can continue to **know your network now.**

ONTOLOGY™

Search, don't integrate.



internet solutions
A DIVISION OF DIMENSION DATA

INTERNET SOLUTIONS VISUALISES CUSTOMERS'
SERVICE TOPOLOGY WITH ONTOLOGY 360°
CUSTOMER & SERVICE VIEW



CASE STUDY
OCTOBER 2013

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Mediation for the Changing Business Environment

Mediation as a BSS/OSS Interaction Layer in Anticipation of Telco 2.0

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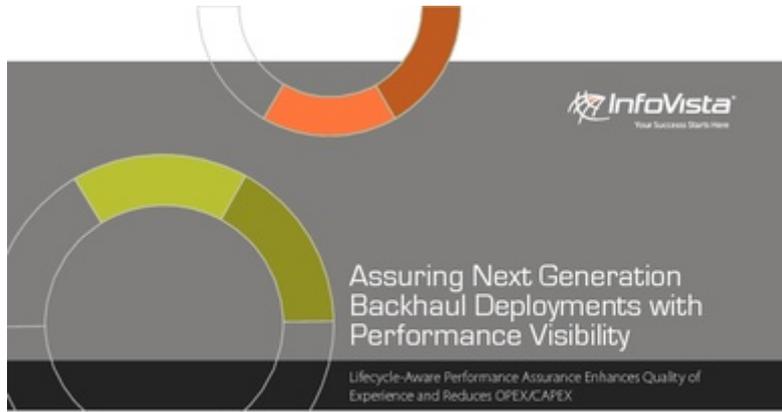
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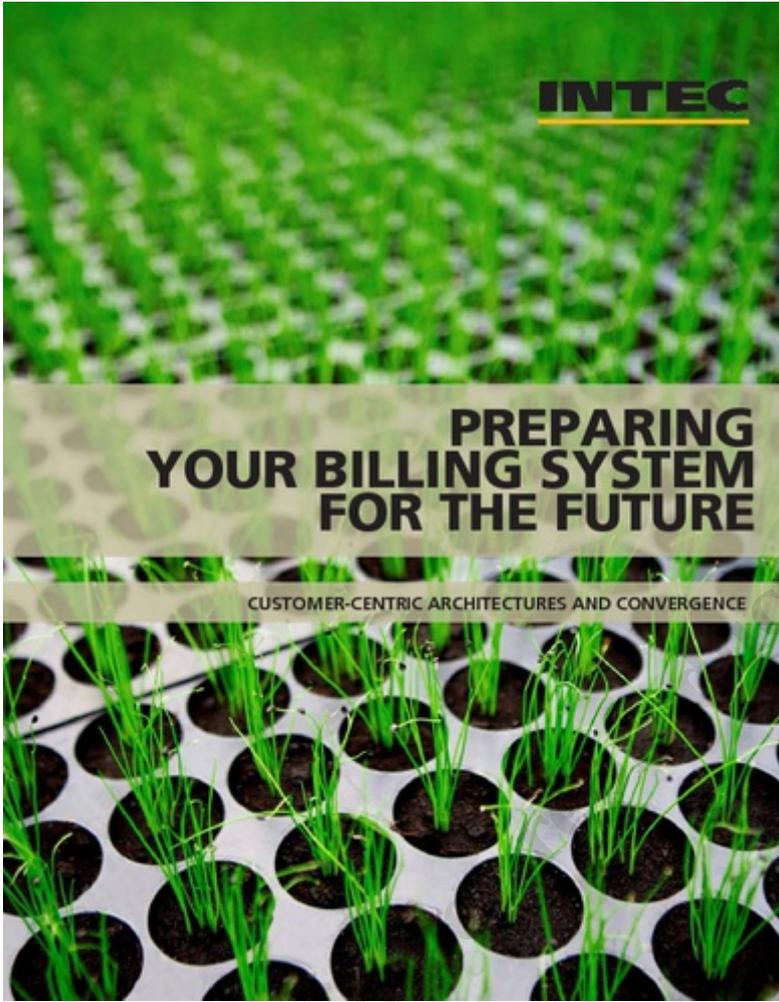


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Assuring Next Generation Backhaul Deployments with Performance Visibility

Lifecycle-Aware Performance Assurance Enhances Quality of Experience and Reduces OPEX/CAPEX

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**PREPARING
YOUR BILLING SYSTEM
FOR THE FUTURE**

CUSTOMER-CENTRIC ARCHITECTURES AND CONVERGENCE



BSS TRANSFORMED: SHAPING UP FOR THE NEXT GENERATION

At present, the requirements for Business Support Systems in the communications industry are changing. Two sets of forces are driving this, particularly where the functions of billing and mediation are concerned. They can be defined as first, forces that impact the commercial landscape in which CSPs operate generally and second, as forces that drive each individual service provider as it responds to its own specific business goals.



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