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PIPELINE | VOLUME 20 | ISSUE 4

PL

SATELLITE IOT
FOR MISSION-CRITICAL APPLICATIONS

THE COURSE TO

6G

NEXT GEN
WIRELESS LAN

DELIVERING

5G

MOBILE CHARGING
2024 WI-FI TRENDS
WIRELESS SUSTAINABILITY

DELIVERING
IN-BUILDING
CONNECTIVITY

100%
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WIRELESS

DEMAND & DRIVERS
FOR
5G DENSIFICATION

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The Impact of Transformation



A Dynamic Panel Discussion
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**Deutsche Telekom Plans To
Free Smartphones From Apps**

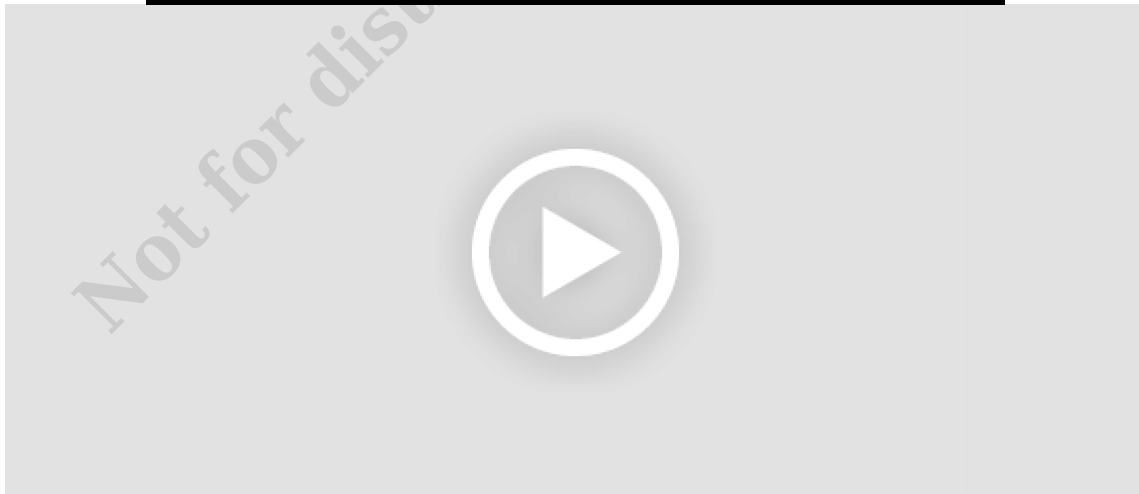
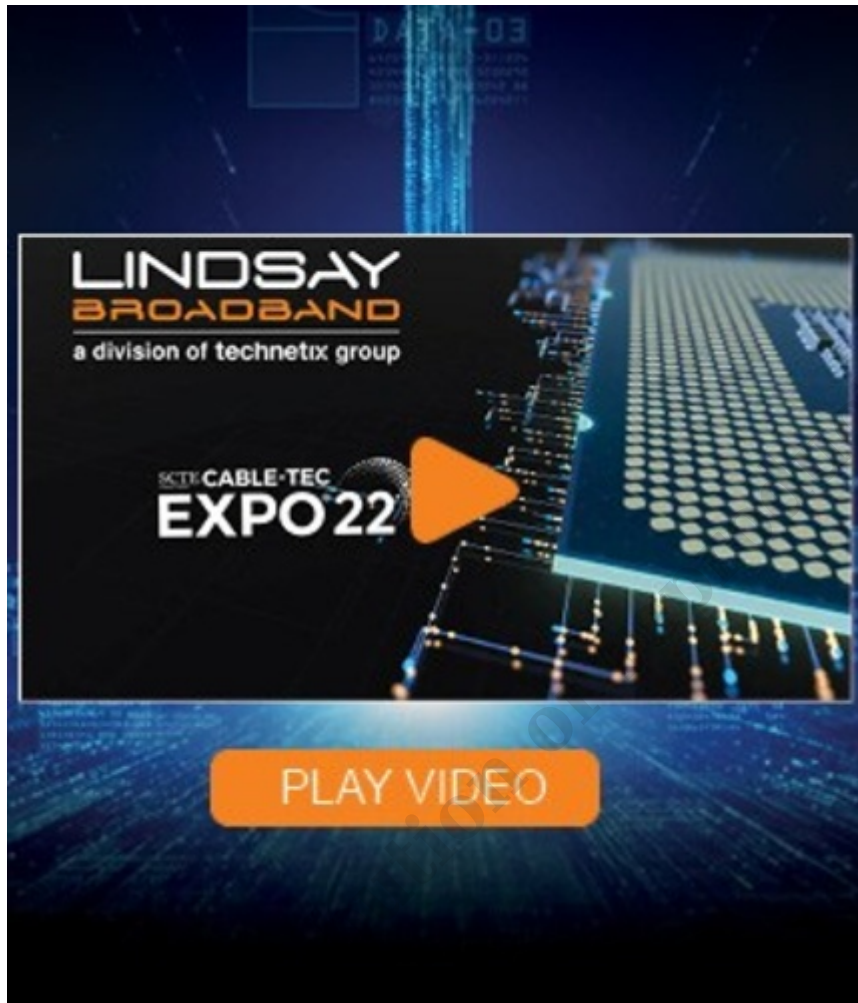
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**Nokia To Modernize Mobile
Network in Armenia**

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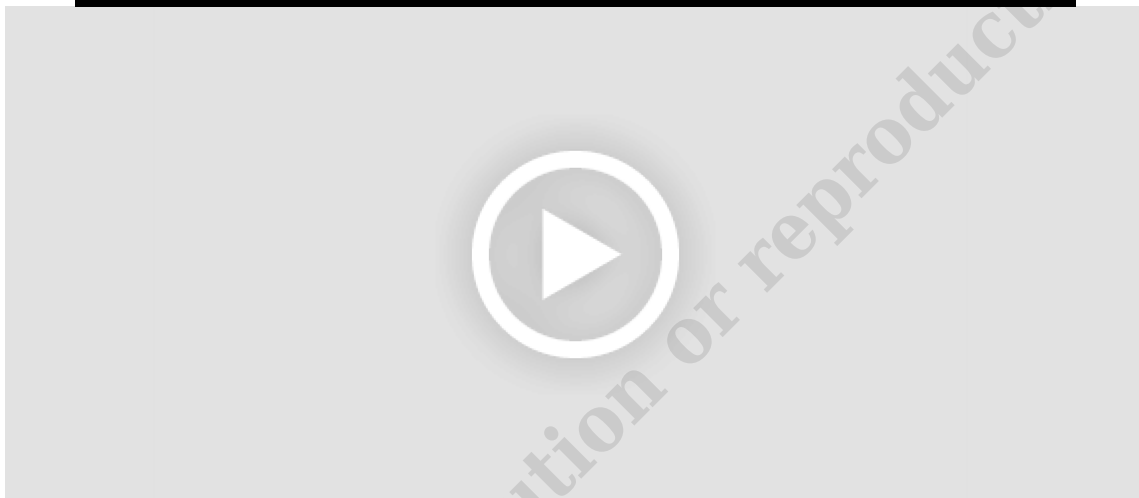
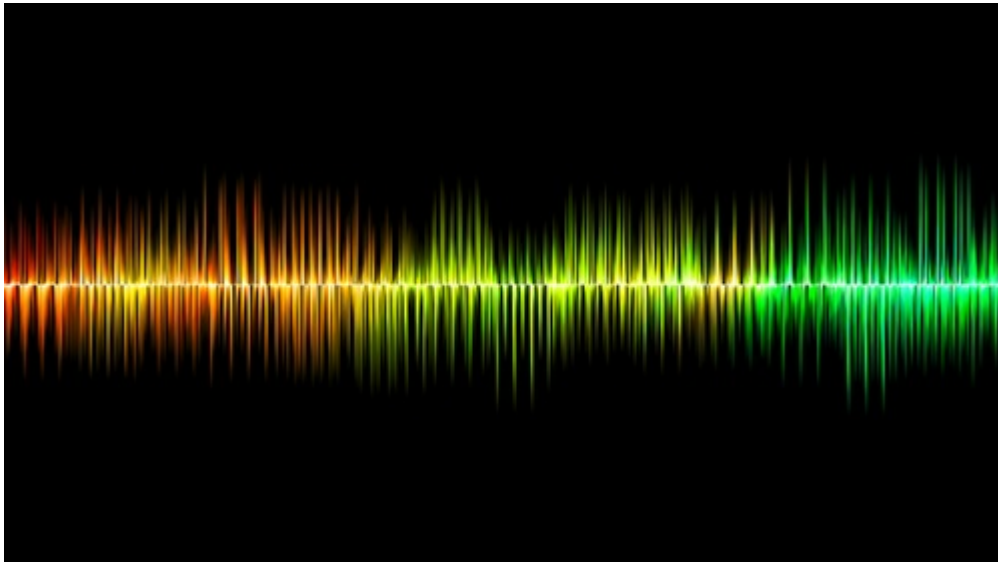
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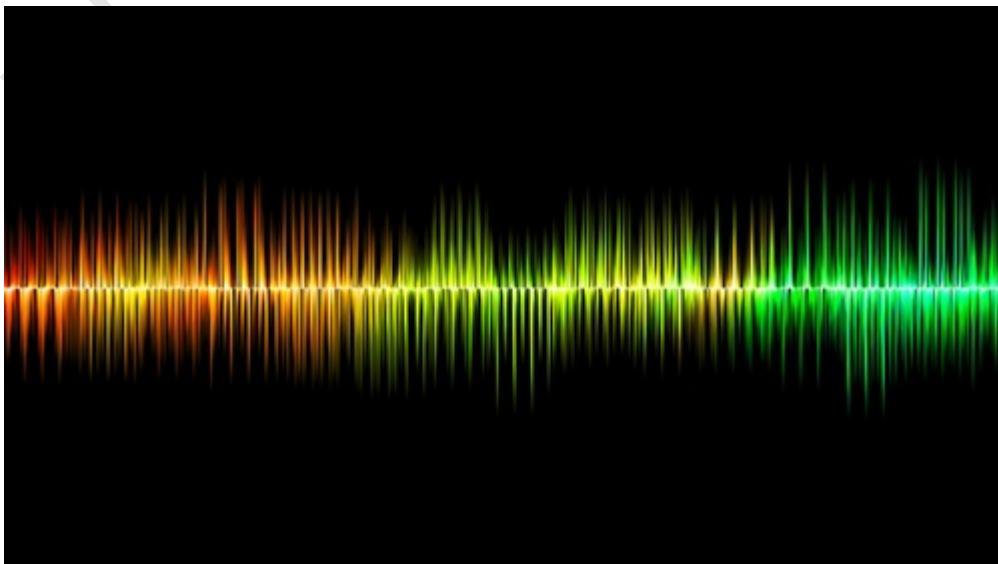
End-to-End Solutions for Broadband Networks

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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The Impact of Transformation

*A Dynamic Panel Discussion Featuring
The Industry's Top Thought Leaders*



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The Network Transformation Imperative

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Customer-driven Networks



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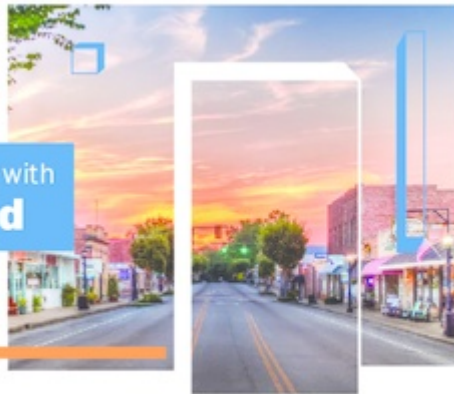
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Building the Future with Broadband



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.

ENGINEERING SERVICES	BUSINESS SOFTWARE	BUSINESS CONSULTING
Network Planning & Design Broadband Viability and Feasibility Studies Outside Plant Engineering (Architecture, Field Notes, Design, Permitting) GIS/CAD Services Project/Construction Management Loan & Grant Assistance	Customer Management Billing Service Activation Sales & Marketing Order Capture Facilities Management Dashboards Case Management Financials	Regulatory Marketing Product Management Customer Service Billing CyberSecurity NOC Monitoring Invoice Fulfillment Systems Rollout

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Empowering Law Enforcement with Actionable Intelligence

SS8 Networks provides the fastest and simplest way to collect, monitor, analyze, and visualize lawful intelligence data. For more than 20 years, we have optimized our solutions for Law Enforcement Agency (LEA) analysts and enabled them to turn complex data sets into actionable intelligence in real-time.

We help LEAs expedite their success despite the growing number of connected devices, methods of communication, and end-to-end encryption. We empower LEAs with simplified data management, real-time visualizations, and workflow-driven solutions purpose-built for analysts.

USE CASES

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- Security Operations

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We are the top provider in the US and UK for Mediation and Monitoring platforms.

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Proven network equipment interoperability with over 150 vendor interfaces to expedite deployment.

Intellego XT

SS8's Intellego XT platform provides superior data management, fusion and analysis solutions to help Law Enforcement and Intelligence Agencies combat crime.

IT'S TIME TO LOVE YOUR BILLING PROVIDER AGAIN.

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WITCOM deploys open multi-vendor solution to power smart city initiative

Secure open platform powers edge cloud for IoT, video and next-gen services

WITCOM provides business customers, government institutions, and ITC service providers in Wiesbaden with professional telecommunication services and secure data center services. Now WITCOM is deploying an open uCPE platform as an edge cloud to host smart city services, including IoT, traffic control, surveillance, and wholesale services.

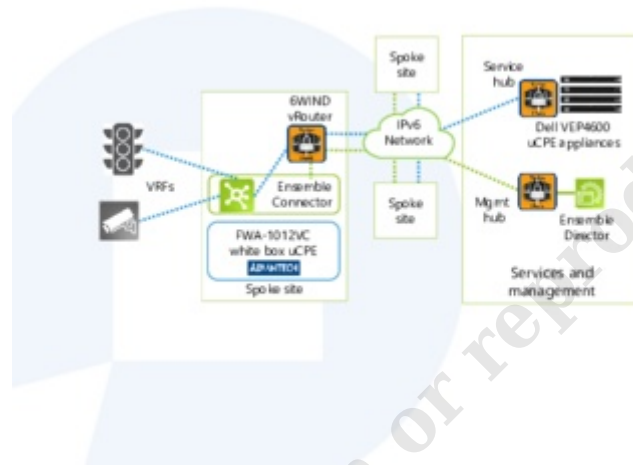
With network functions virtualization (NFV) and universal CPE (uCPE), smart city operators like WITCOM can rapidly and efficiently deploy next-generation services. And once the uCPE servers and software are deployed, the operator can use it as a platform for innovation. New services can be added dynamically, without changing the deployed hardware, drastically increasing the rate of innovation.

Decisco, an ITC service provider in continental Europe, assembled a solution using best-of-breed suppliers to power this innovative deployment. Working together, the suppliers teamed up to meet WITCOM's stringent requirements for performance, cost, ease of deployment and security.

The solution is deployed on a central hub site as well as wholespoke sites (as shown below).

Security is an essential element of the solution, and is provided by the 6WIND Turbo IPsec vRouter. The vRouter is deployed in virtual machines (VMs) at each of the spokes, and at the hub as an aggregator.

The spoke sites are located in outdoor cabinets featuring the widely adopted FWA-1012VC white box uCPE from Adavtech. This optimized and versatile appliance integrates the Intel Atom™ C1000 processor (8 cores), and 2x 1GbE SFP and 6x 1GbE RJ45 interfaces, providing sufficient compute headroom and flexible connectivity to meet edge site requirements.



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**DATA DRIVEN. RESULTS ORIENTED.
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Rural America needs access to broadband. But closing the digital divide can be complicated—and with so many service providers facing increased competition, mounting costs, supply chain issues and eroding revenues, you need more than a quick fix.

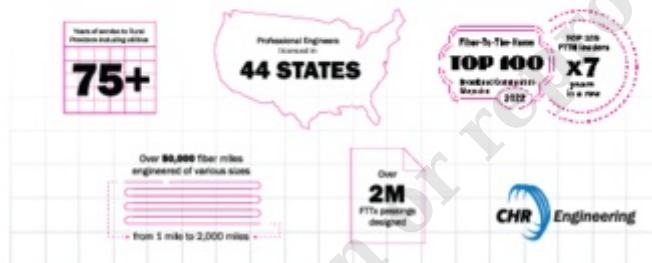
CHR Solutions has the technology and the expertise to help you make informed decisions that enable you to get the job done efficiently, on budget and on time. From feasibility studies to network design to construction, we partner with you every step of the way to optimize your operation and increase your speed to market.

“

CHR helped to train and guide us through the fiber-to-the-home design, engineering and permitting processes. They have become my go to liaison with city, county and state permitting authorities. If you want to work with people that are willing to help and get your foot in the door in your state right-of-ways, I highly recommend CHR (they even do wireless & tower engineering too!)

-Jason Pond, CEO, Grizzly Broadband, LLC

Our Experience. Your Advantage.



Managed BSS for Accelerated Business Growth

Managed Telecoms solutions that enhance the customer experience and power growth for established Network Operators, and unleash the potential of new markets for Greenfield Virtual Network Enablers

The Challenges for Market Growth

Communication Service Providers (CSPs) in today's Telecoms industry are keenly aware of the need to innovate and grow market share while controlling cost to serve and improving margins.

Managed BSS solutions

Business Customer Management
-M, V, B, C, S, P, R, K, V, C, M

VNE
-V, N, E, O, P, E, R, A, T, O, R, S, V, N, E, O

MDS Managed Service Solutions

Opportunities for Established Operators

For established Mobile Network Operators faced with declining revenues, opportunities exist to (a) drive acquisition/retention activities through improved customer experience, and (b) maximize the value of the business customer base through enhanced corporate service offerings.

(a) Customer Experience – improving the experience of existing customers, often with a range of service offerings distributed across many source billing systems, requires the adoption of a 'Single View' approach to customer management and reporting:

- Single View of Customer
- Single View of Products
- Single Point of Contact
- Single Bill and Reporting.

This is especially relevant for multinational corporations that operate across regional boundaries

in multiple languages and currencies that have little or no centralised telecoms account management and cost analysis.

The typical approach to achieving a single view of the customer is through billing transformation, which can be a costly and complex initiative.

(b) Enhanced Corporate Service Offerings – Convergence, whether in the form of Unified Communications or Fixed-Mobile Convergence, is an expectation driven by the market. This presents CSPs with a whole new set of challenges that reach far beyond IT systems. The convergence of mobile, fixed-line and IP services crosses the entire customer lifecycle, including:

- Order Capture – for multiple services with different requirements and lead times
- Order Management – that includes hardware, software and network provisioning
- Rating & Billing – for recurring charges, usage charges, one-time charges, credits and adjustments across multiple integrated services
- Care & Manage – unified account management, e-bill presentation and online analysis.

New Channels to Market for Greenfield Operators

For Greenfield Virtual Network Enablers (VNEs) the recent resurgence of interest in the VNE business model, and the fact that convergent services are fast becoming a necessity rather than a nice-to-have, presents an opportunity for a broader range of service providers to grow revenues in the B2B market, including:

Managed BSS for Accelerated Business Growth



Whitepapers

TOP TEN PREDICTIONS FOR THE TELECOMMUNICATIONS
INDUSTRY IN 2011**For B/OSS, Managing the Manager is #1, says Progress Software**

Progress Software Corporation (NASDAQ: PRGS), a leading software provider that enables companies to be operationally responsive, predicts that telecommunications service providers will increasingly be able to detect technology problems that might affect customers, solving them before the customers even know they exist.

Sanjay Kumar, Industry Vice President for Communications and Media at Progress Software, said, "The telecommunications field is very competitive, and service providers have to do what they can to differentiate their offerings. Solving problems before they happen goes a long way toward managing the customer experience." The firm also predicts that mobile service providers will have to build stronger relationships with customers, mainly by providing unique offerings to grab and hold their attention.

Progress Software's Telecommunications predictions for 2011:

1. **For B/OSS, managing the manager is key.** Traditional business and operational support systems (B/OSS) will require systems to manage the systems. Most service providers have invested so much in their B/OSS infrastructure assets that they cannot be easily replaced and need an adapted layer to respond to real-time business demands and reenergize the existing B/OSS infrastructure's value.
2. **You will predict problems before they come to light.** Telco service providers will be able to predict when there is a potential issue that will affect customers—and correct it before it happens. The pre-emptive correction of problems before the customer knows they exist will become a key factor in differentiating service providers and improving the customer's level of service.
3. **Loyalty program.** Mobile service providers facing mounting competitive forces will have to build stronger relationships with their customers. They will need to provide customers with unique, interactive experiences to build stronger loyalty by tapping into customer call patterns and locations, correlating with customer preferences and providing value-added services to customize each customer's experience in a unique way.
4. **Partly cloudy.** As communication service providers head for the cloud, they will struggle with data interoperability between cloud and non-cloud environments. Operators will need advanced data transformation and adaptive technologies to take full advantage of cloud-based applications.
5. **Mind the gap.** Operators will be increasingly trapped in the gap between customer expectations for flexibility and speed, and the limitations in existing B/OSS infrastructure. This will drive demand for new business user toolsets to overlay B/OSS, enabling service providers to respond and deploy new solutions faster.

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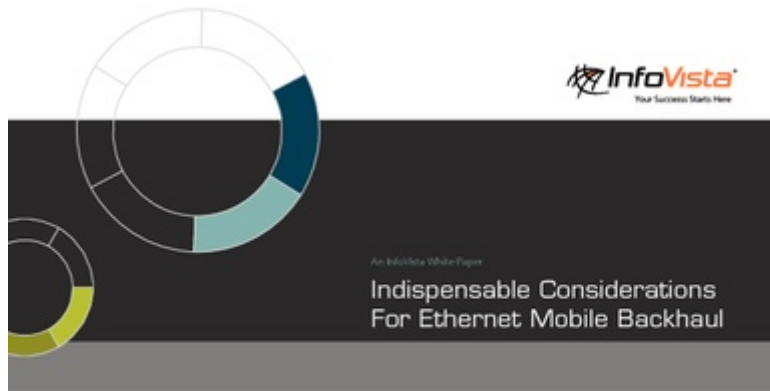
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Reports

Prepared for Progress Actional
February 2009

**The Total Economic Impact™ Of
Progress Actional Management For
Interconnected Applications**

Implemented by a communication and media service
provider

Project Directors: Paul Devine and Sebastian Seihorst

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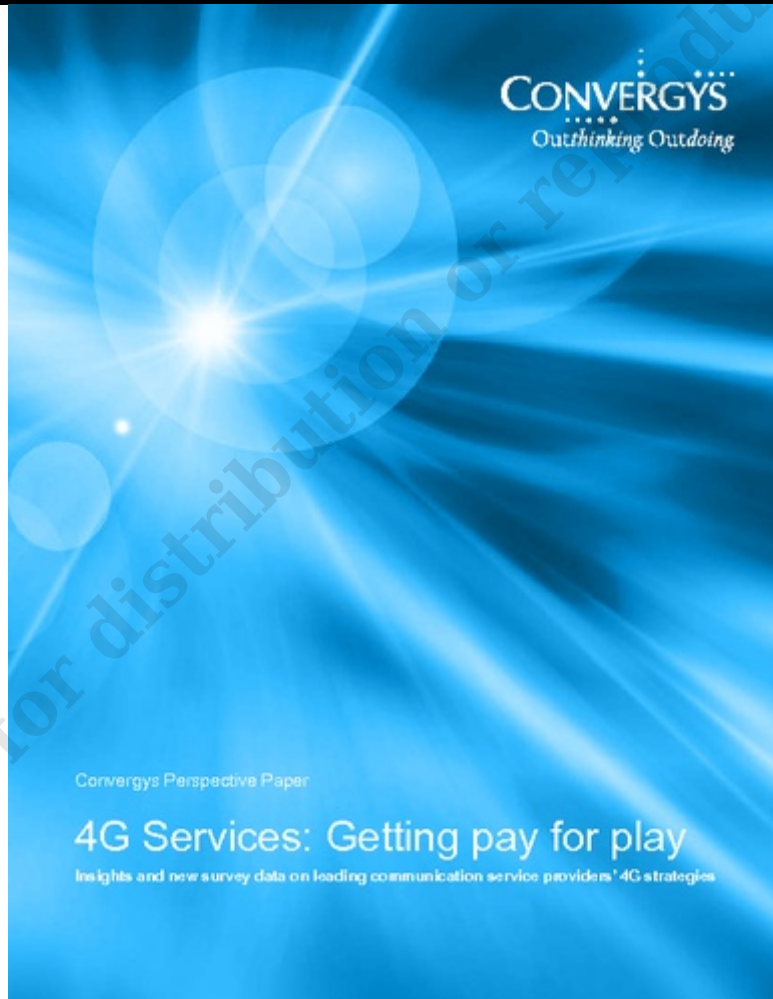
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The Balancing Act of Mobile Workforce Management

FULFILLING MULTI-SERVICE OBJECTIVES
WITH PRIORITY-BASED OPTIMIZATION

A ViryaNet White Paper









Omnia360™ Product Bulletin

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- Centralized Customer Management
- Dynamic Product Catalog
- Powerful Business Analytics
- Market-Leading CRM

MODULES

- Account Management
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- Product Catalog
- Case Management
- Order Capture & Management
- Financials
- Service Activation
- Dashboards
- Facilities Management
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- Capital Credits



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- **Simplify Business Systems** with a complete, pre-integrated back office solution
- **Elevate Customer Experience** with consistent customer interactions

A dynamic, pre-integrated billing and CRM solution that brings together your entire business ecosystem.

Omnia360 transcends traditional billing platforms with a complete "out-of-the-box," pre-integrated customer relationship management and billing solution. Available as a fully-hosted cloud-based solution or on-site license subscription, our next-generation solution empowers communications service providers (CSPs) with a client-centric model for service differentiation and rapid deployment of new services, especially within the Enterprise space.

Leveraging Microsoft Dynamics® CRM, Omnia360 best-of-breed software platform delivers a complete, turn-key back-office solution for CSPs to monetize new, untapped revenue opportunities.

Centralized Customer Management

Omnia360 provides a holistic view of your customers. Within a single screen, service providers can view all billing, accounts receivable, orders, and service details. Our solution helps drive operational efficiencies by empowering you to enforce business-specific rules, create custom fields, and even integrate third-party applications with simple point-and-click customization.

Dynamic Product Catalog

Omnia360 delivers a dynamic, centralized product catalog enabling the selling and fulfillment of next-generation products and services, such as cloud services, productivity solutions, unified communications, and Voice over IP products — all while enabling traditional voice, video, and data products. This unlimited product flexibility capability helps optimize sales accuracy while reducing the time it takes to complete the entire concept-to-cash cycle.

Powerful Business Analytics

It is critical for management to be able to monitor business performance. Omnia360 maintains a single scorecard that covers sales, marketing, and customer service. Thanks to the minute information provided in line charts, with drill-down intelligence to view service data, identify trends, and uncover new insights.

Market-Leading CRM

Combine the familiar Microsoft® Office 365 user interface with powerful CRM software to maximize marketing effectiveness, win more sales, and enrich customer service interactions. Leveraging the power of Microsoft Dynamics® CRM, marketing and sales professionals are equipped with flexible segmentation tools, simplified campaign management capabilities, lead-to-cash visibility, real-time sales forecasts, and much more. Customer service specialists are empowered with tools that simplify case management, streamline escalators, improve knowledge sharing, and enable more effective resource management, all while helping to contain service costs.

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Sigma Systems and NDS

Orchestrating New and Unified Entertainment Experiences

Upgrading traditional offerings and deploying new hybrid/IP platforms are an increasing focus as service providers look to evolve to offer a truly personalized video entertainment experience to subscribers – anytime, anywhere and on any device. Sigma Systems and NDS have developed an integration partnership to help service providers achieve this goal by provisioning and delivering advanced video and entertainment services that attract subscribers and generate new revenue.

One Managed View of Video Access Entitlements

Critical to the success of leveraging the NDS solution portfolio for advanced TV/video services is the ability to seamlessly enable customers to access and view premium content. Sigma Systems provides the service orchestration for the necessary authorizations, entitlements and provisioning of NDS systems for subscribers through a single OSS solution – managing video conditional access rights, entitlements for premium content, VOD, DVR/PVR and also provisioning IP set-tops and residential gateway devices.

TV Anywhere Authorized to Enable Multiple Devices

Subscribers are increasingly demanding anytime anywhere access to their premium content on multiple devices from their TV, personal computer, and personal tablets such as the Apple® iPad®. Sigma Systems provides comprehensive subscriber entitlements management, which is key in seamlessly delivering the multi-device, multi-room, TV anywhere entertainment experience to subscribers. Service providers benefit from service fulfillment that extends beyond subscriber service plans and profiles with a completely integrated view and management of users, devices, and cloud-application entitlements.

Effectively Migrate Subscribers from Standard to Premium Entertainment Packages

Delivering new entertainment experiences to subscribers doesn't have to involve an immediate and costly video network evolution. Sigma Systems empowers service providers to leverage existing video networks in order to move beyond linear for services such as digital TV, PPV, VOD and DVR/PVR through support for next-generation IPTV IP video platforms, like NDS, on a single integrated OSS service management platform. This co-existent service fulfillment environment manages the provisioning and activation of all enhanced entertainment services, helping service providers to launch new premium video services and bundled packages that drive new revenue and reduce customer churn.



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Network Analytics: Turn Big Data into Big Opportunity

*Seven Steps for Network Operations, Marketing,
Customer Care and IT*



IBM

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