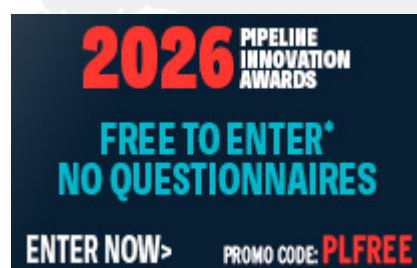


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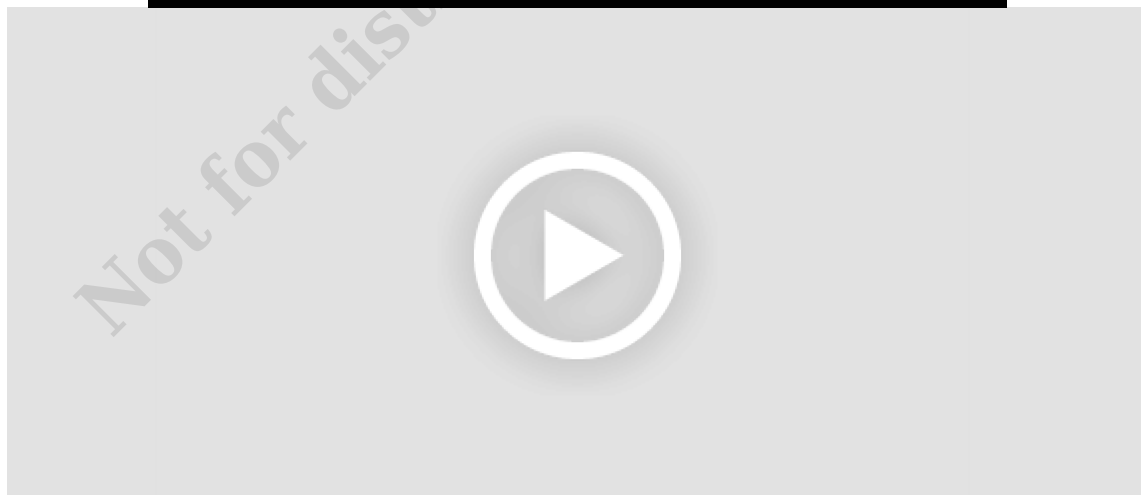
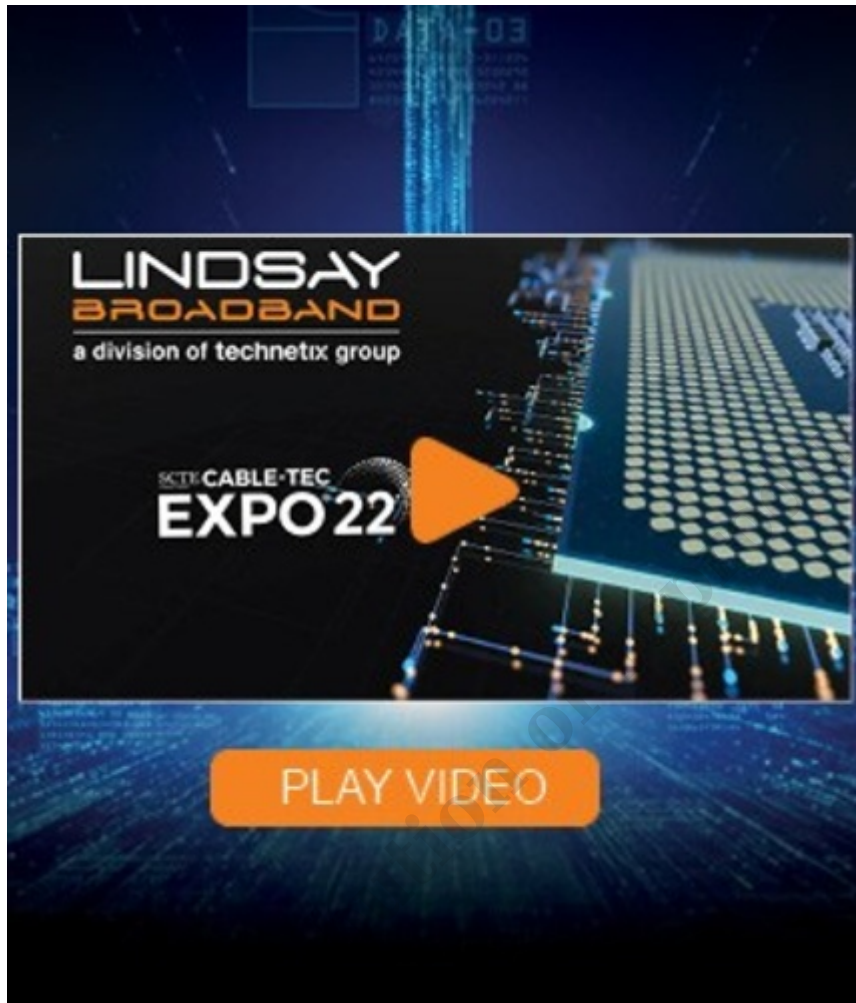
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SAP Empowers Developers to Drive AI Revolution

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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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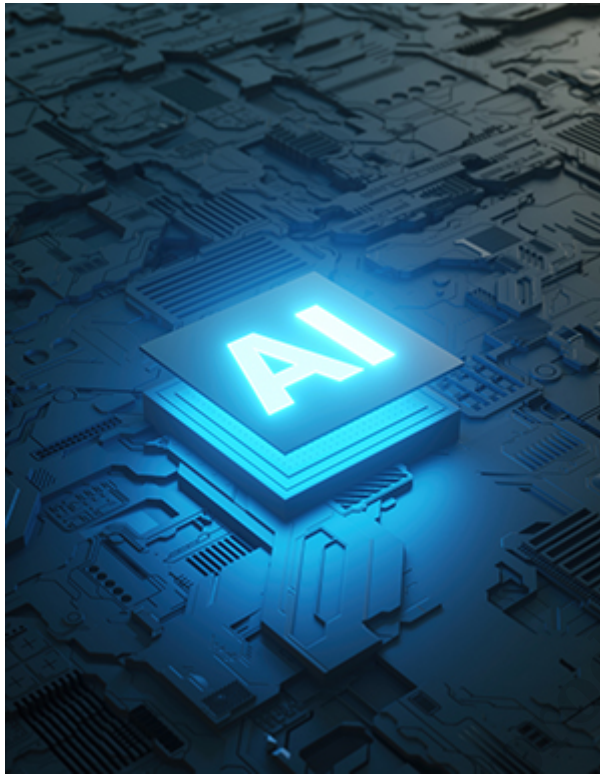
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3 WAYS YOU WILL OVERPAY FOR YOUR MOBILE WORKFORCE MANAGEMENT SOLUTION AND 3 STRATEGIES TO AVOID IT



SS8[®]

COLLECT. MONITOR. ANALYZE. VISUALIZE.

Actionable Intelligence for a Safe,
Secure and Connected World

SS8 Networks provides the fastest and simplest way to collect, monitor, analyze, and visualize lawful interception data. For more than 20 years, we have been evolving and innovating to match the changing needs of Communications Service Providers (CSPs) and Law Enforcement Agencies (LEAs), while delivering comprehensive solutions that are easy to use and optimized for the best results.

Our solutions make analyzing, enriching and managing complex data sets simple, helping LEAs stop organized crime, catch criminals, and prevent terror attacks. For CSPs, we provide a trusted foundation for meeting regulatory requirements efficiently and effectively.

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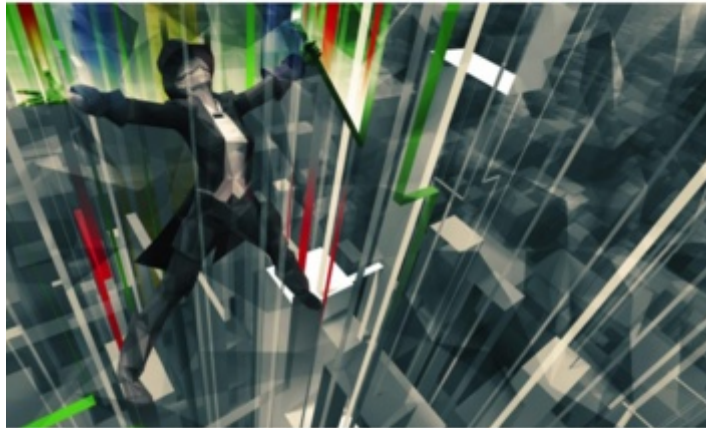
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Patrick Surry, #30, Customer Analytics • Pitney Bowes Software





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.

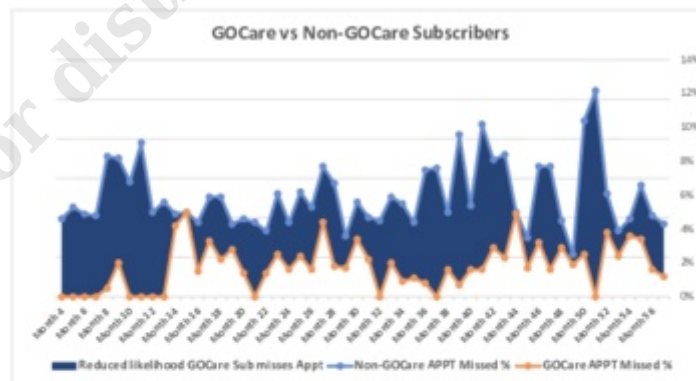
Progress Software's Telecommunications predictions for 2011:

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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Missed Appointment Analysis



When possible, it makes sense to compare the behavior of a customer opted in to GOCare vs customers that are NOT opted in to GOCare. Prior to the GOCare deployment, this operator averaged roughly 8% - 8% of subscriber appointments as "no access". AFTER the GOCare deployment, GOCare subscribers were routinely below 2% of subscriber appointments as "no access" or 70% fewer missed appointments for GOCare subscribers. As the opt-in rate increased, GOCare was successful in dramatically reducing the overall missed appointment rate. At an estimated \$150 cost per truck roll, the savings in missed appointments more than covered the cost of the GOCare offering.

Potential OpEx Impact:

Missed Appointment Analysis: Calculate an estimated 8% missed appointment KPI monthly, multiplied by an assumed \$150/truck roll. A 70% reduction in missed appointments represents an EBITDA improvement of significant revenue annually.

In addition to the savings of OpEx, assuming the "no access" improvement applies equally to new installs, the improved completion ratio will **accelerate revenues** at improved margins.

Whitepapers



**DON'T LET
YOUR NETWORK...
END UP
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Secure Access and Single Sign-on

Keep your distributed network ship-shape by ensuring that globally dispersed access points don't represent security leaks. Our Secure Access and Single Sign-on Solution gives you a crow's-nest view of who is accessing network elements, and the potential impact.

Know your crew
Securing large, multi-vendor multi-technology networks can be a daunting task. With thousands of personnel accessing thousands of network elements, the problem is clear. But a consistent set of security procedures can help—as long as you know they are being followed. Still, how can you manage security in an environment where different element management systems all handle user accounts and auditing differently? Secure Access and Single Sign-on from Nakina Systems solves these complex issues by assigning security privileges by user in a central location and tracking activity in easy-to-access reports.

Watching the horizon
When something goes wrong, the ability to quickly audit who accessed network elements, if they made any changes, and from what network entry point they accessed them, can make the difference in meeting service level agreements. Nakina Systems' Secure Access solution allows security administrators to implement a single user interface to consolidate and manage all access to network elements and element management systems in the network. A broad range of security policies can be created and enforced networkwide, and administrators can audit activity at anytime.

Set sail safely
Nakina's multi-vendor security management solution offers the ability to:

- Centralize security policy administration via a single tool that integrates into existing corporate identity management systems
- Substantially reduce the effort and cost to administer security credentials for thousands of users across large networks
- Standardize the implementation of security policies across multi-vendor environments
- Enforce robust and consistent security policies with automated network-wide security measures like password aging and minimum alpha-numeric password requirements
- Customize security privileges at the individual user level and define and assign privileges to user or group of users based on job responsibilities

Key Functions
The Nakina Secure Access and Single Sign-on solution addresses four key problem areas:

Network Element Security

- This feature enables the security administrator to automate and centrally manage user password management across all network elements and element management systems.

User Security Proxy

- This allows users a single point with which to log on to applications and a list of authorized applications or elements, significantly simplifying and improving the end-user experience.

User Privileges

- This enables the security administrator to assign user access privileges by network element or element management system.

Auditing

- This enables the Security Administrator to centrally log, review the activity of and terminate select individual user sessions.

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Whitepapers



Subscriber Policy Management Trends

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CUSTOMER SUCCESS STORY: SINGTEL OPTUS



Expert Billing for the Top-End of Town

SingTel Optus (Optus) needed to differentiate itself from its competitors and create a valuable service to attract and retain high-value customers. The company wanted to optimise its service to large corporate and government entities and therefore needed a billing and transaction management system to support that market segment.

STRATEGY

As the largest competitor to Australia's incumbent, Optus has taken a very strategic approach to winning high value customers.

Optus introduced superior customer-focused service to the market, along with premium product and service bundles. The corporate and government market in particular was requesting a better method to manage their communications portfolios.

To support this business decision, Optus selected Singleview as the strategic billing and transaction management system for their corporate and government customers. They chose Singleview because of its flexibility and functionality, which supports the concept of a "market of one".

RESULTS

Optus has reduced overall cost of ownership and improved operational efficiencies with lower bill processing cycle times and seamless internal operations, not to mention reduced spend on accessing data and increased time on servicing its corporate and government customers.

OPTUS – AN OVERVIEW

Optus, now owned by telecommunications giant Singtel, commenced operation in 1992 and is one of the largest communications service providers in Australia. It has more than six million customers today and provides a broad range of communications services including mobile, national and long distance services, local telephony, international telephony, business network services, internet and satellite services and subscription television.

ORGANIZATIONAL STRUCTURES REFLECTED WITH EASE

Singleview's hierarchies provide powerful aggregation features, which allow for the management of complex corporate and government accounts. The ability of Singleview to imitate these organizational structures is achieved via its superior and multifaceted hierarchies. Each account is treated individually, allowing billing, reporting and invoicing to be tailored to meet the client's individual business model. These hierarchies can sometimes be 8-9 levels deep with thousands of nodes.

BILLS AND REPORTS AS A SELLING TOOL

Optus is able to use the options provided by Singleview as a key differentiator for high value corporate clients. With Singleview, Optus customers have total control when they want it and how they want it.

There are two key benefits for Optus customers:

- One single bill for all products and service.
- Advanced multiple reporting functionality.



A Revolution in Evolution

Policy Control and Mobile Broadband's
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Sigma Systems and TiVo

Orchestrating New and Enhanced Entertainment Experiences

As consumer demands for a more personalized video entertainment experience continue to skyrocket, service providers are seeking new ways to remain competitive and seamlessly deliver over-the-top (OTT) content to subscribers. Today, Sigma Systems and TiVo have developed an integration partnership to help service providers achieve this goal by embracing and provisioning the TiVo video platform as a part of their bundled service offerings.

One Managed View of Video Access Entitlements

Critical to the success of offering a service like TiVo to customers is the ability to seamlessly enable them to access and view subscribed content from the TiVo device. Sigma Systems provides the service orchestration for the necessary authorizations, entitlements and provisioning of the TiVo service for subscribers through a single OSS solution – an essential element to delivering both on-network and 3rd party content and entertainment services. Subscribers receive the content they want, while service providers maintain customer satisfaction.

Provision and Manage Premium Video Service Products & 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 IP video platforms, like TiVo, on a single integrated OSS service management platform. This co-existent service fulfillment environment manages the provisioning and activation of all video services, helping service providers to launch new premium video services and bundled packages that drive new revenue and reduce customer churn. In addition to viewing premium video and entertainment services offered by TiVo, service providers can also integrate with and deliver existing video products on the TiVo set-top box.

Effectively Manage the Entire Video Delivery Chain

Sigma Systems is the only OSS vendor today that has created a TiVo solution adaptor. With this unique solution adaptor, we have extended our video service fulfillment expertise beyond linear TV by enabling the support, integration, and provisioning of the TiVo service. Our single, integrated OSS solution seamlessly provides order management, provisioning and entitlement management across all technologies and systems. This single integrated solution manages the entire image of the TiVo service delivery value chain for the subscriber, network, device and content from the cloud.



White Paper
Telco Triple-Play Service Fulfillment

Prepared by
Alan Breznick
Senior Analyst, *Heavy Reading*



www.heavyreading.com

On behalf of



www.sigma-systems.com

December 2010

White Paper

Orchestrating the Evolution to Cable IP Video

Written by:

Alan Breznick, Senior Analyst, Heavy Reading



Business Process Outsourcing services



CHR provides a full suite of Business Process Outsourcing (BPO) services to enable Communication Service Providers (CSPs) to meet the escalating competition, reduce operating and capital costs, and address the increased complexities of converging technologies that make it challenging to run their business. CHR's BPO Services, on average, can reduce your operating costs ten percent (10%) to forty percent (40%). Your business could avoid hundreds of thousands, and in some cases millions of dollars of capital expenditures while improving your operational effectiveness at a fixed and predictable price.

NOC SERVICES

CHR provides 24x7 Managed NOC Services for CSP core networks and ISP operations. Our NOC is staffed with technical experts armed with the latest technology and world class best practices to assure your network and systems uptime. We can operate as Tier 1 to Tier 4 support, or as a backup or nighttime coverage for your staff.

IT MANAGED SERVICES

CHR provides 24x7 IT Services for your internal IT operations. Our IT Service is staffed with technical experts armed with the latest technology to assure your internal IT network and systems uptime. We can advise and guide you on world class best IT practices and provide a single service desk that can deliver Tier 1 to Tier 4 IT support 24x7 or as a backup or nighttime coverage for your staff. Our services include all end-user support, systems patching, data backup, remote control, spare and virus scanning, systems administration, monitoring and planning.

ISP SERVICES

CHR's 24x7 Managed ISP Services provide world class customer support—leveraging CHR's tech support expertise, real-time network monitoring and convenient customer communications portal, cloud based e-mail, backup services, spam and virus filtering, hosted content management systems and webinars. We provide support options including management and troubleshooting into the end customer's premise based equipment.

GIS/CAD SERVICES

CHR's GIS/CAD Services provides a turnkey solutions for managing all plant and operational CAD records in our cloud based systems. Our technical support, proven process and systems assure business continuity, improve operational efficiencies and reduce reporting errors through real-time geo-referenced intelligence. GIS/CAD services empower the client to make more informed decisions with active and relevant data. CHR's GIS/CAD is scalable and highly customizable—capable of integrating with any GIS system.

BILLING SERVICES

CHR provides turnkey back-office management including system updates, administration, reporting, running billing and all other aspects required to operate your business. CHR can provide this function on our cloud based systems or your on-premise systems—even if it's not our BSS/BSS solution. We will apply our best practices and industry expertise to reduce your operating costs and improve your operations.

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Distributed cell site gateway from ADVA and Edgeworks

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 Edgeworks have combined forces to deliver a disaggregated cell site gateway (DCSS) 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 10Gbit/s to 100Gbit/s and 25Gbit/s 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 paving the way for open, agile, and efficient mobile ecosystems.

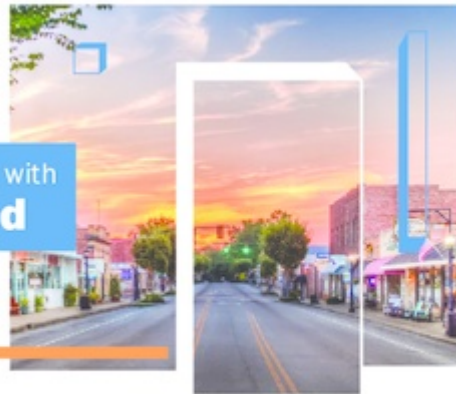
Moving from closed to open

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 DCSS as well as OpenRAN. Both are essential to supporting the move to next-generation radio architectures.

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



Building the Future with Broadband

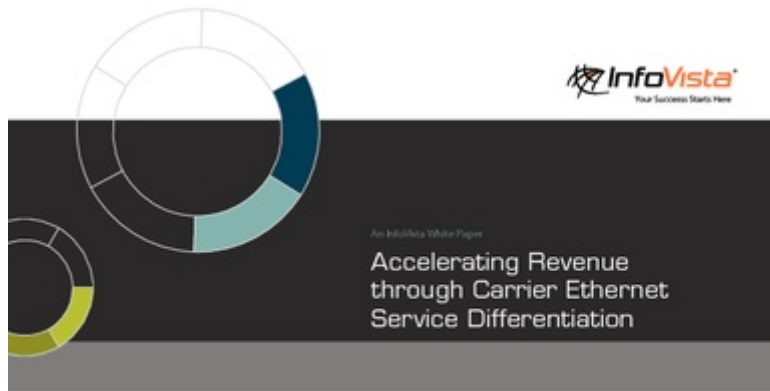


Creating Communities

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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