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PIPELINE / VOLUME 20 / ISSUE 6

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PRECISION LIQUID COOLING
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Orange and Nokia to Accelerate 5G in Europe

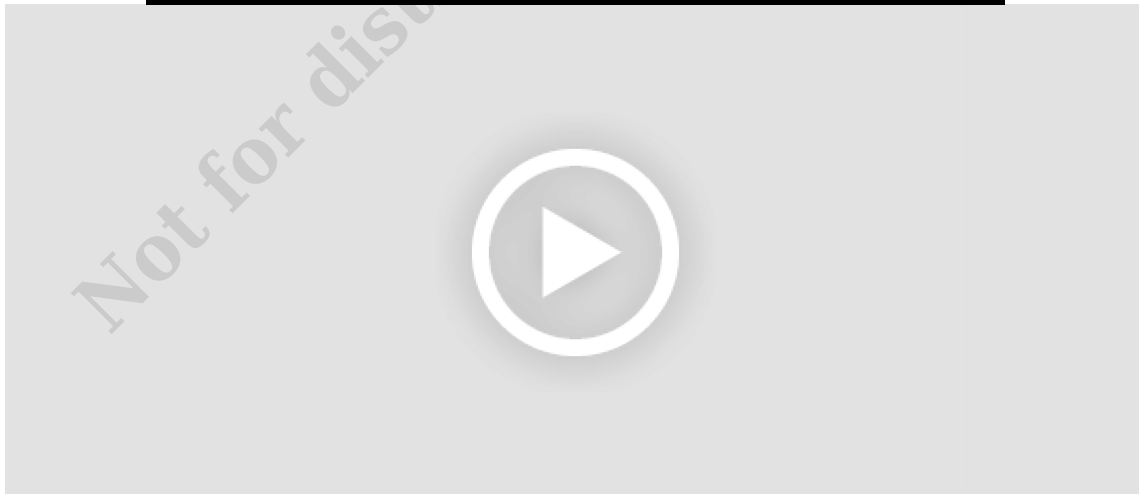
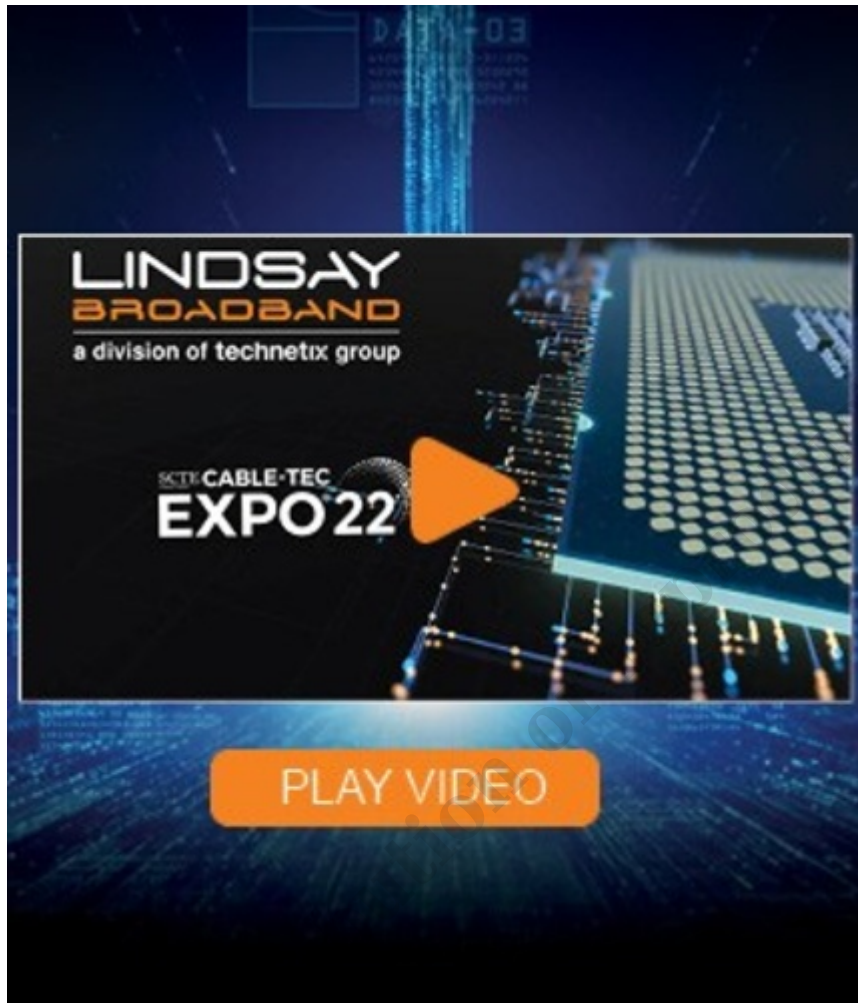
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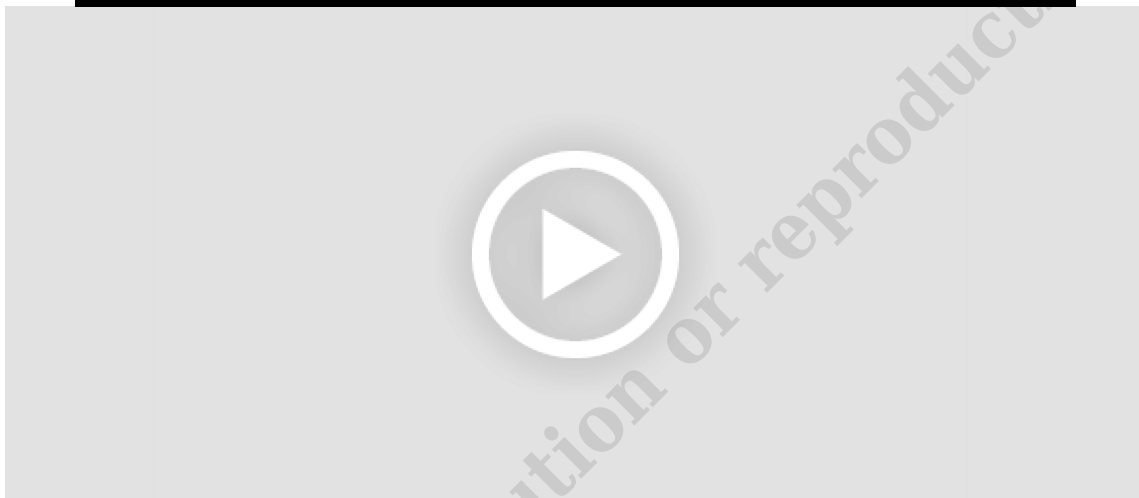
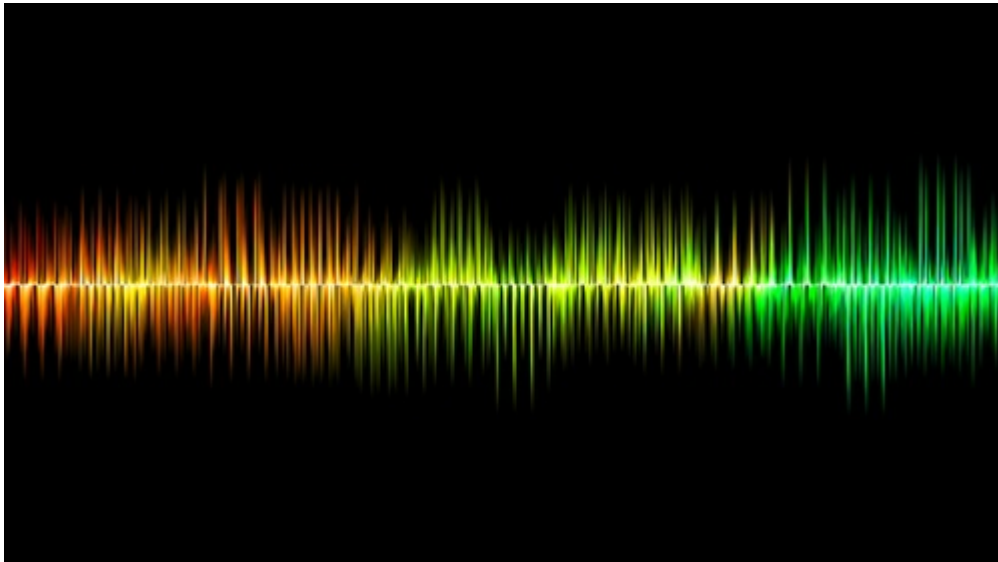
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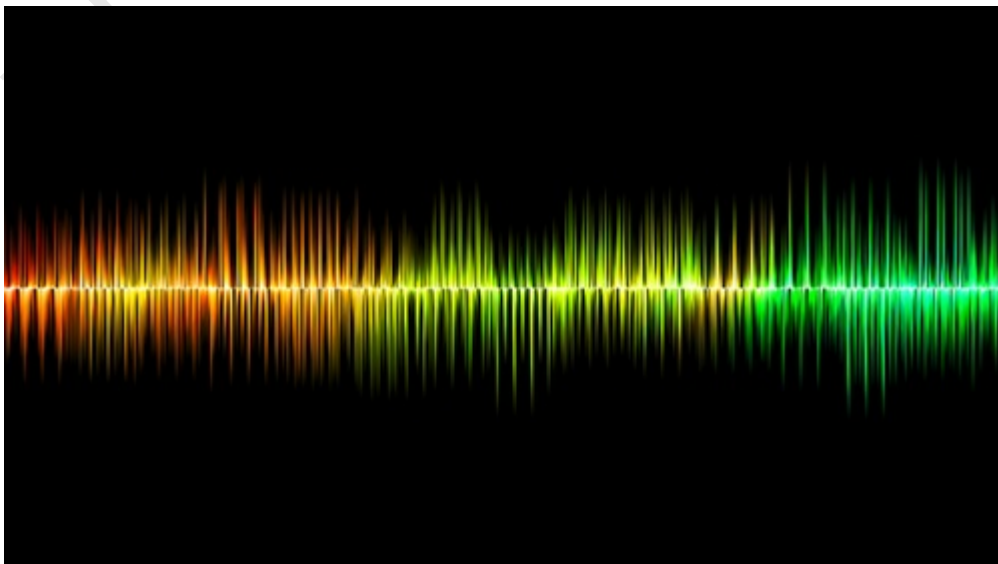
End-to-End Solutions for Broadband Networks

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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*A Dynamic Panel Discussion Featuring
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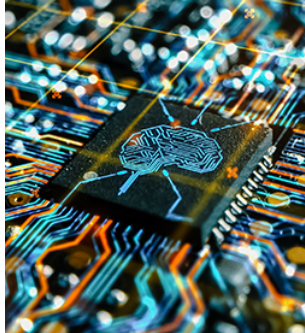
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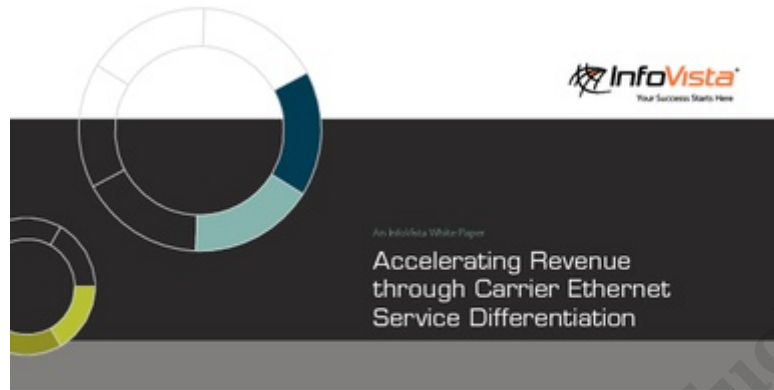
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Prepared by
Alan Breznick
Senior Analyst, *Heavy Reading*



www.heavyreading.com

On behalf of



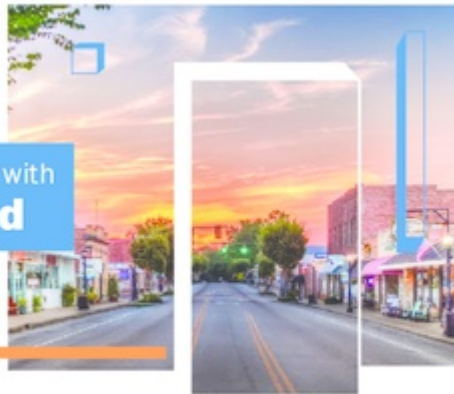
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Building the Future with Broadband



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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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

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, S, B, C, P, W, R, X, Y, Z, 10

VNE
-M, S, B, C, P, W, R, X, Y, Z, 10

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:

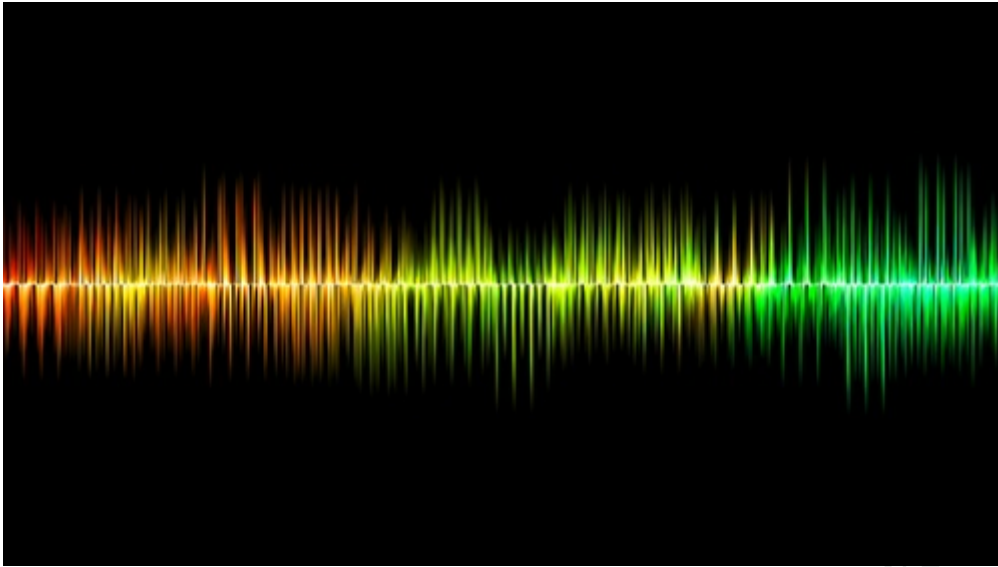
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DELIVERING BROADBAND WHERE MOST WON'T

THE SURF INTERNET STORY

SURF Internet



Microsoft .NET Framework 3.0
Customer Solution Case Study



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

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

- Software and Services**
- Products
 - Microsoft Office 2003, 2007
 - Microsoft Office Vista 2003, 2007
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 - Microsoft .NET Framework

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

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

By Mike, Chief Operating Officer, GreatCall Inc.

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

Business Needs

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

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



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Customer Centricity in the Telecommunications Industry

Transformation from Product-Centric to Customer-Centric
and Creating Competitive Advantage Along the Way

WHITE PAPER

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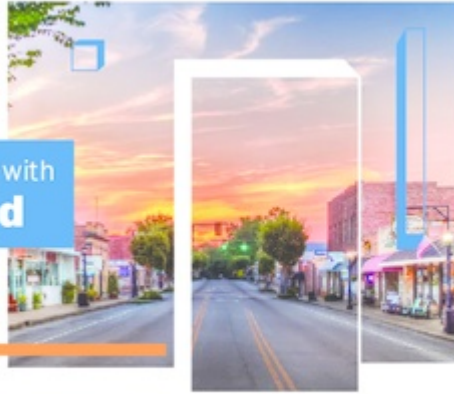
Kayla McShane • Vice President, North America
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Whitepapers

White Paper

Common Language Drives Customer Value for All Network Technology: 5G/MEC and Virtualized Networking Included

Sponsored by: icorectiv

Karl Whitebeck
January 2021

EXECUTIVE SUMMARY

icorectiv TruOps Common Language was established to facilitate the service design and asset tracking needs of the operations and business management processes for prevailing and emerging network connectivity architectures. Common Language has been used by communications service providers for over 40 years.

Complexity from new technology evolution (e.g., network virtualization, private networks, hosted networks, 5G, multi-access edge computing [MEC], and the Internet of Things [IoT]) requires assets to be aligned with business and technical objectives to keep costs within expectations, address end-to-end (E2E) service objectives, support partner accountability, maximize interactive efficiency, and show business management responsibility. On the basis of its successful long-standing customer implementations and evolutionary approach to the network management processes, Common Language is expected to play a major role in the evolution and deployment of new facilities-based networks and the virtual aspects upon which these new technologies come to rely.

This paper explains how teams with network and partner-provided asset management responsibilities can achieve business value by maximizing the use of common nomenclature. In addition, the paper describes how a common naming strategy improves the effectiveness of real-time network operations and key business management functions. This paper also explains how Common Language can bring increased awareness when defining, launching, and managing new network-based services.

Introduction

As network technology and business strategies continue to evolve, the greatest challenge asset-based communications service providers face is how to manage the physical and virtual assets that define the services they provide. Understanding the physical and logical placement of assets is strategic to several information operations functions including network planning, inventory, service orchestration, catalog, activation, network assurance, service-level agreements (SLAs), policy, provisioning, and charging. The multilevel construct of the underlay and overlay connectivity infrastructure and the E2E partner-provided services to customers of all types brings additional layers of asset tracking complexity that must be addressed by each of these business and operations management domains.

January 2021, IDC #US47230621

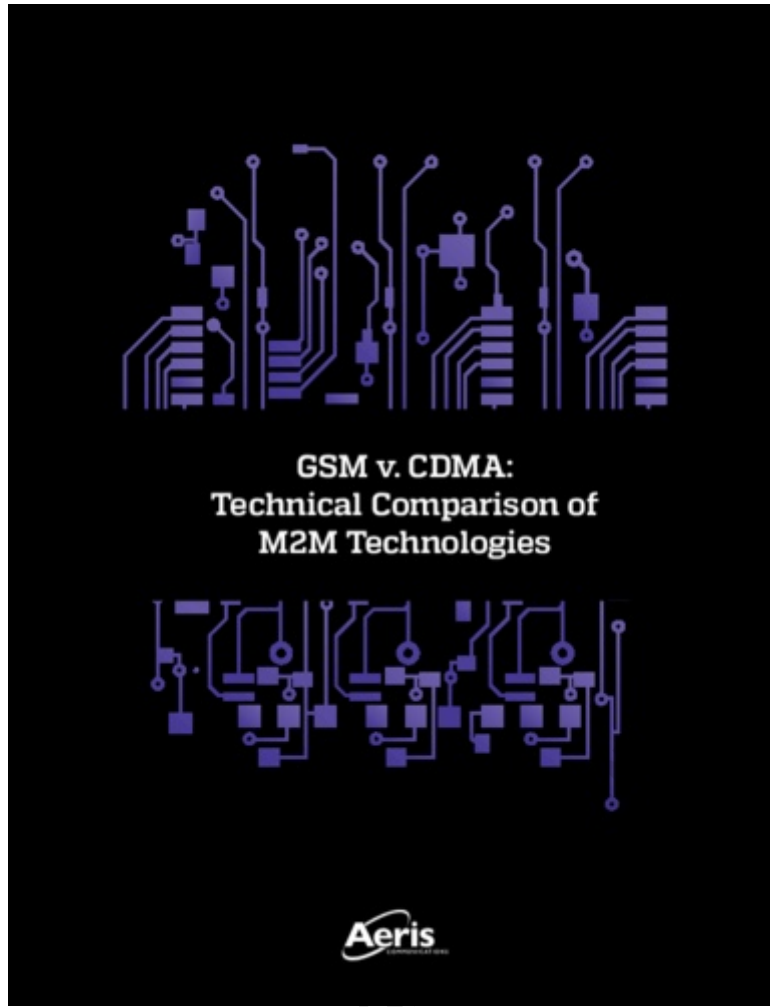
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**CSP ENTERPRISE PRODUCT MANAGEMENT:
 THE SOLUTION TO ORGANIZING THE FACTORY AND THE STORE**

A model for getting organized

In running a retail store, there are some basic principles that everyone understands about products and inventory. For a start, the Sales staff rely on knowing exactly what they have to sell – what is in stock, what options are available and to whom, what the lead times are for special orders, etc.

Purchasing needs the same information to know when to source additional stock to match customer demands and to find suppliers that can deliver.

And Marketing and Product Management need to know which products are doing well, which ones need refreshing or retiring and where to focus their next product campaigns and development ideas.

The common thread across these departments is the need to service the customer with the right products.

To that end, the idea of product is at the center of the retail universe. The retail business is all about procuring, marketing and selling products, with business success clearly linked to product success. Retail success is therefore heavily dependent on factory supply – the product design, build, warehousing, and distribution tasks associated with making the products the retailer wants to sell.

Communication Service Providers (CSPs) certainly share the same challenges of the physical product retailer, especially when it comes to determining and then supplying the products that customers will find attractive and want to buy.

There are a few important differences for a CSP, given the fact that CSP products are mainly service offerings that they often supply themselves. Services are not lined up in boxes on shelves. Services are not shipped from distant factories whenever stocks run low. Sell, services add products. They must be designed, manufactured and packaged.

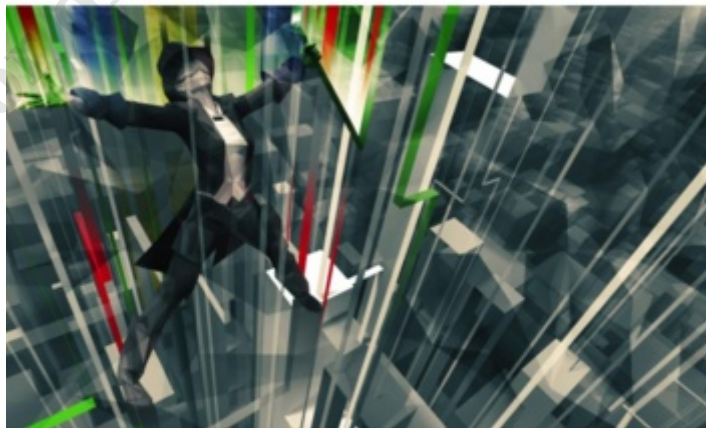
The underlying service delivery capability must be in place before the services can be delivered, just as the factory for the retailer's product must be operational before a retailer can expect to have that product to sell. And like any other products, services are subject to supply limitations – their delivery is constrained by network and systems capacity and capability, and by the ability of the organization to manage the delivery and support of those services.

With this dual role as Wholesaler and Retailer, CSPs have all the same requirements as an automotive company for the manufacturing, management and supply of products, on a day-to-day basis as the orders flow in from the customers and on a longer term basis as products are created, delivered, and eventually retired. But while everyone in most any CSP company understands the primary importance of products, too many CSPs continue to manage products across this chain in a fragmented and uncoordinated way. They simply do not have either the day-to-day or long term visibility of their products that is essential for profitable performance.



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WiFi solutions

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Whether your goal is to implement a WiFi network that guarantees outstanding coverage for broadband Internet access or you're seeking new revenue streams by becoming a VoIP or Wireless Internet Service Provider, our experience enables the entire ecosystem.

CHR's WiFi Solutions include flexible end-to-end or à la carte options that range from concept to construction, to customer management. Our certified engineers and best-of-breed partners stand ready to aid in every aspect of your WiFi project.

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

Verizon Business and Nakina Systems Case Study

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

Service Delivery Challenges

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

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

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

Operations and Integration Challenges

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

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

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

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



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