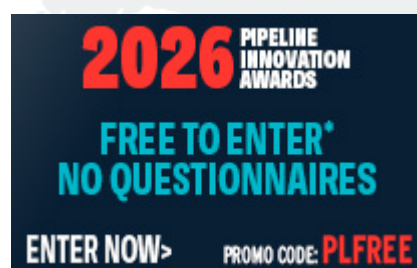


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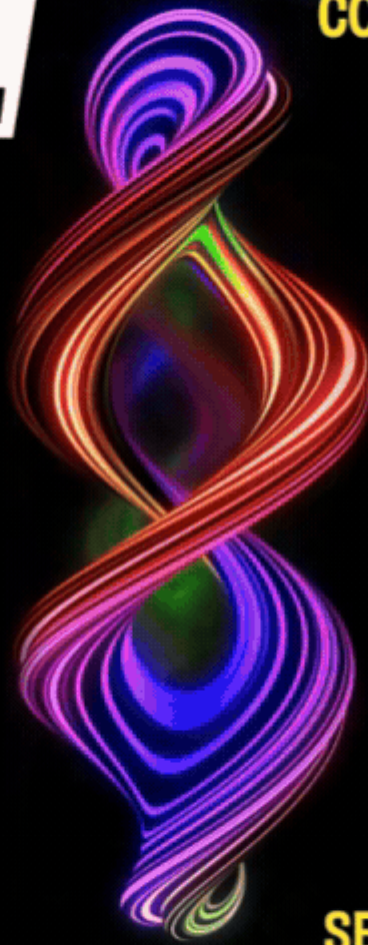
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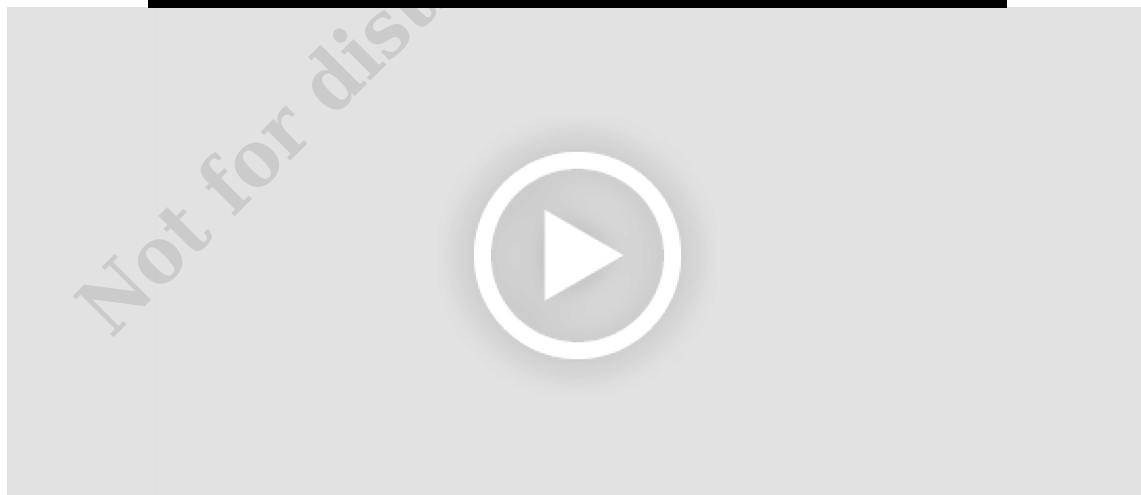
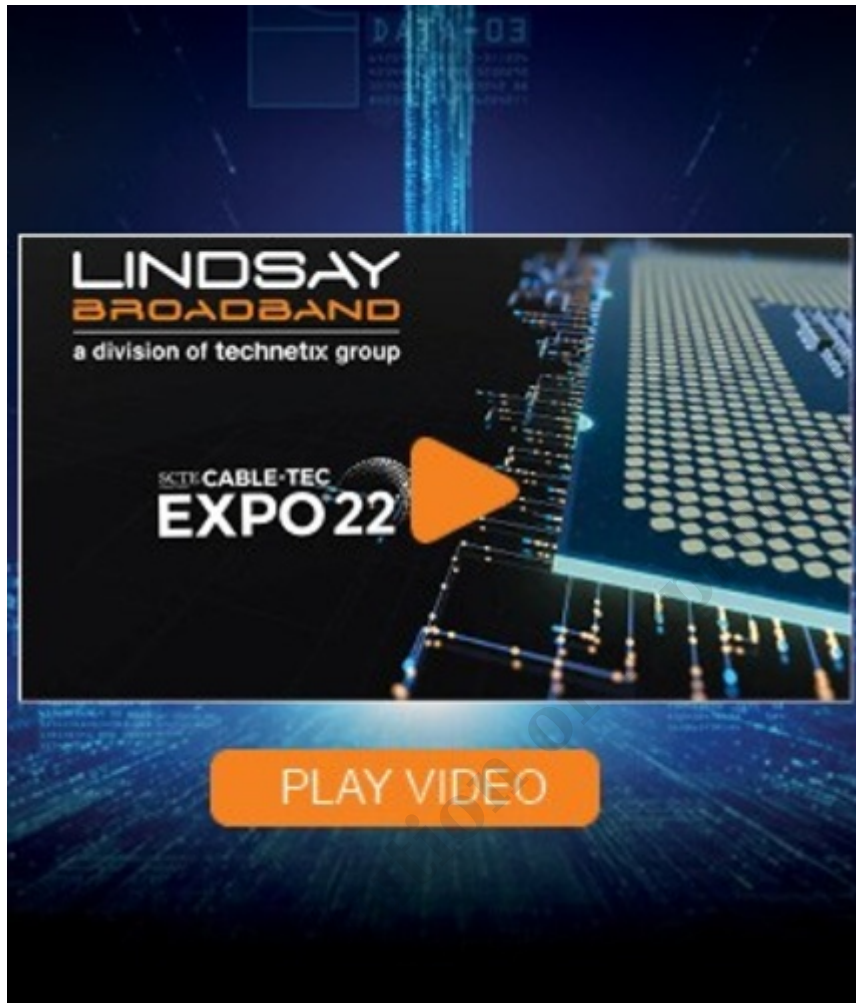
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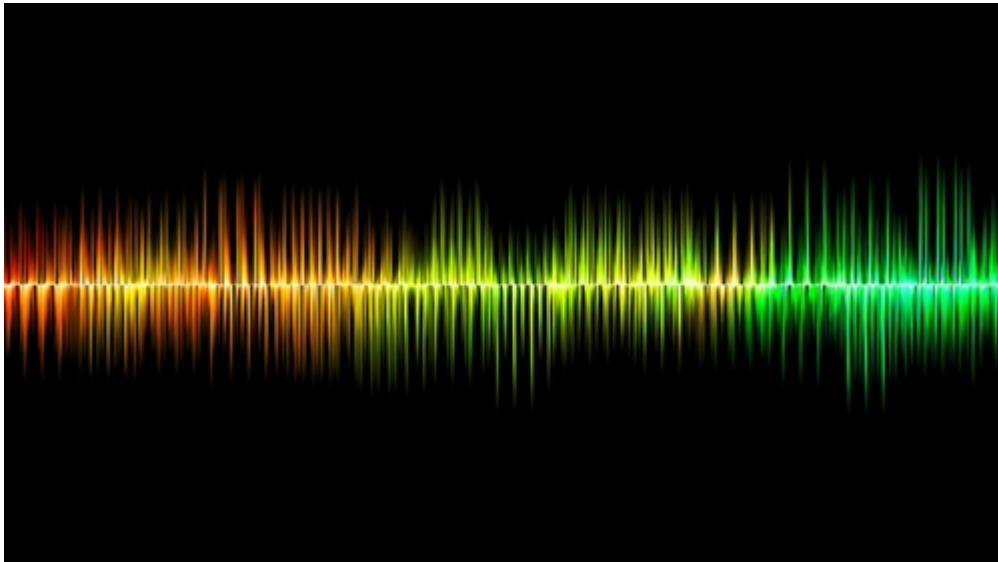
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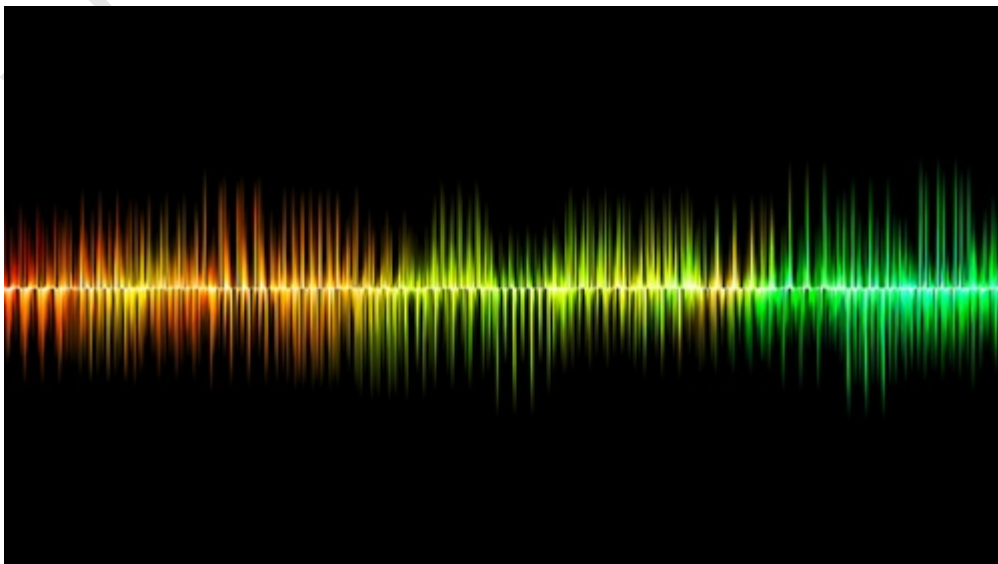
End-to-End Solutions for Broadband Networks

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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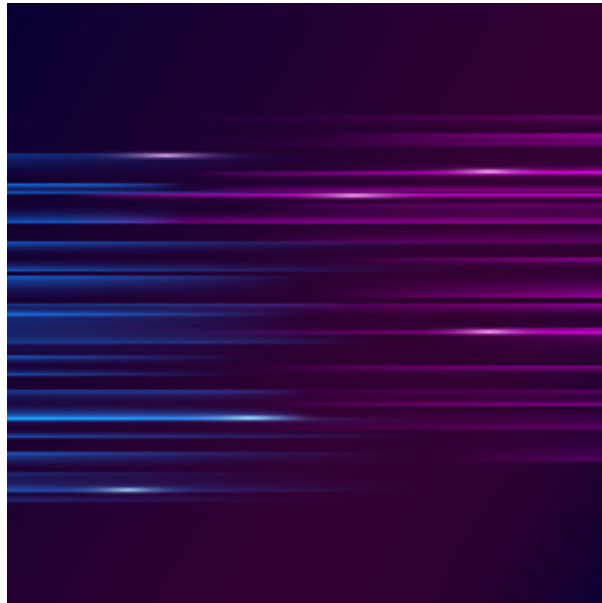
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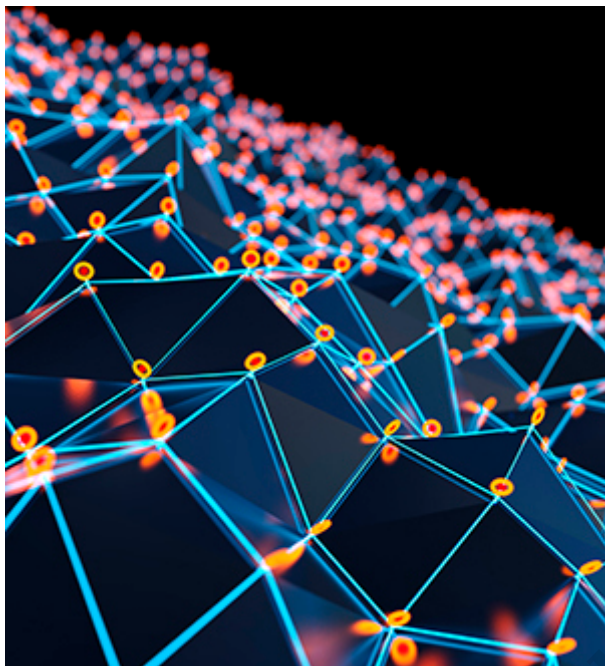
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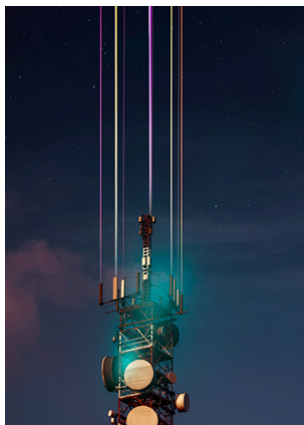
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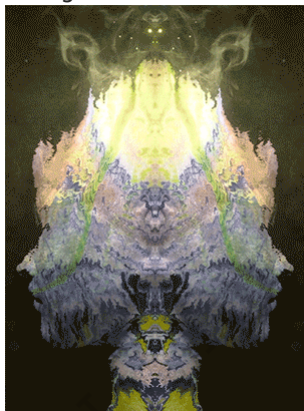
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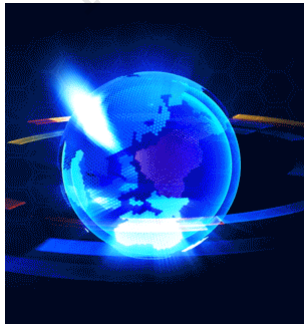
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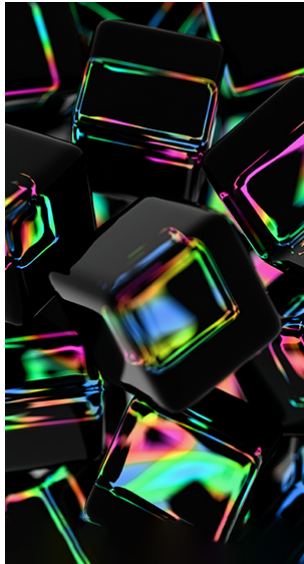
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Introducing our New State-of-the-Art Geographic Platform

One of the ultimate goals of Broadband providers is to bring fast, reliable service to their customers, who are often located in rural parts of the country. Connecting unserved or under-served communities through broadband technology improves their way of life and closes the digital divide. But doing so can be costly and time-consuming.

What if there were a way to make it all easier by streamlining each phase of your network implementation, improving decisions by using real-time data and therefore optimizing your current and future operations?

CHR Solutions is a proven industry leader with over 75 years of experience and we have found a way to expedite your builds, decrease labor costs, forecast in real-time, and increase monetization to speed up broadband access to rural America.

Geospatial Data is Not New-- But the Way We Use It Sure Is.

By using Geospatial data in a unique way, we provide our clients with a platform that utilizes real-time information to improve efficiencies, take the guesswork out of decisions, and ultimately increase speed to market. The platform features a customizable dashboard that enables all aspects of your business to format and display the data in a way that optimizes its use in their specific operations.

CHR's Geographic Platform

- Improves efficiencies
- Takes the guesswork out of decisions
- Increases speed to market

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Know your network: Now.

Ontology Real Time Inventory for NFV

September 2015



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 pre-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 enforcement like password aging and minimum alphanumeric password requirements
- Customize security privileges at the individual user level 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 borrow unique account credentials 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.

WWW.NAKINASYSTEMS.COM



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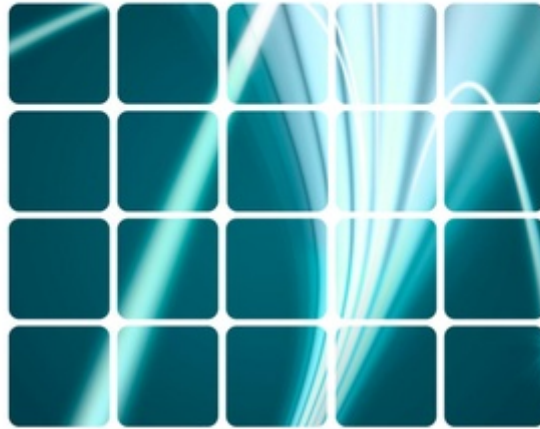
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Lower Total Cost of Mediation

WHITEPAPER, BY ROBERT MORRISON

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Making it work and making a profit are the two greatest challenges **IPTV** service providers face. From building your network to billing for service, CHR is with you every step of the way.

■ **IMPROVE INTEGRATION**

Whether you're integrating legacy and new-gen systems or middleware and BSS, the variables of IPTV implementations are vast. With more than 60 years serving communications service providers in every capacity of their business, CHR has the expertise and resources to simplify your IPTV experience. Our holistic approach and experienced team work with you to weave together the many elements necessary to make IPTV work.

■ **PROMOTE PROFITABILITY**

As competition escalates and regulatory support declines, the battle for profit becomes even more crucial. Discover new ways to increase profits margins and drive new revenue by leveraging CHR's cross-facility philosophy and comprehensive service offerings. CHR's Integrated Services and In-Room Wiring team will help you spend less time in market—more quickly making return on your investment and improving customer retention with professionally prewired home networks. Create an unparalleled customer experience with Mediatek™—reducing churn and raising ASPU.

Reports

Customers expect organizations to be aware of their distinct preferences and to interact with them on an individual basis rather than as part of customer segments or groups. Providing each person with individualized messaging, offers, and products ensures a personalized customer experience.

Toward Superior Customer Experience: Building Blocks for Personalization

November 2022

Written by: Eren Eser, Associate Research Director, Services, IDC Türkiye

Introduction

Customers have always wanted a hassle-free experience in their interactions with brands. In the meantime, customer expectations for smooth and enjoyable experiences are constantly changing and evolving due to the ever-accelerating pace of digital technology and advances in the market. In parallel with its growing importance among customers, customer experience (CX) has become a strategic concern for businesses. According to IDC's Future Enterprise Resiliency and Spending Survey, enhancing customer experience was enterprises' top business goal globally for a five-month period (September 2021–January 2022, inclusive).

Customer experience now has significantly less friction thanks to developments in customer experience technologies across advertising, marketing, commerce, sales, customer service, and more. However, focusing purely on technological advancement without considering the human connection in CX projects hinders organizations in creating and sustaining emotional connections with customers.

Differentiating by efficiency or product is doomed to failure. The return on investment for efficiency improvements will eventually be close to zero at some time in the near future. The capacity to differentiate at the product level has been hampered by technology because every new product feature or function can easily be copied by rivals and introduced to the market. Customers now consider brand experience their key criterion for choosing which items to buy and use, since they perceive less differentiation at the product level, with products essentially identical in terms of desired features.

AT A GLANCE

KEY STATS

According to IDC research:

- Improving customer experience is a top business priority for most enterprises.
- Personalization improves engagement rates by 35–40% versus non-personalized communication.

KEY TAKEAWAYS

- Customers now view personalization as the default engagement standard.
- Organizations can differentiate themselves and achieve a long-term competitive edge by offering highly personalized customer experiences.

Case Studies



Brochures

IP Video Services Accelerator

Sigma Systems' IP Video Services Accelerator is a robust solution enabling cable service providers to extend video service offerings to deliver an enhanced and unified entertainment experience.

Without a doubt, the enhanced entertainment experience over IP video networks is emerging as the "next big thing" for service providers as over-the-top (OTT) content, Internet video and 3rd party applications continue to threaten customer loyalty. Gone are the days of just delivering traditional video offerings as cable service providers begin embracing the opportunity to create new business models and deliver an exciting, personalized multi-screen experience to subscribers. But without the proper supporting service fulfillment foundation, the accurate delivery of this experience is a significant challenge for cable service providers.



Simultaneous Linear & IP Video Provisioning & Support

The IP Video Services Accelerator provides a service fulfillment solution that simultaneously provisions and supports both linear and IP video networks to deliver digital TV, PPV, VOD, DVR/PVR, Internet Video, OTT content, and 3rd party applications. This unique integrated OSS service management solution eliminates operational silos and provides seamless order management, provisioning, and entitlement management across all technologies, services, and systems.

Simplify All-IP Video Migration

By supporting a hybrid linear and IP video network that provisions all video services, the IP Video Services Accelerator gives you the ability to simplify and implement a logical migration strategy from legacy to all-IP video. You can manage this migration at the pace of your business and benefit from the flexibility to migrate in stages, by managed service area, network segmentation, and even customer profile. With the IP Video Services Accelerator you can rapidly launch enhanced entertainment services and migrate linear video subscribers to a common OSS back-office solution when your business is ready.



Brochures

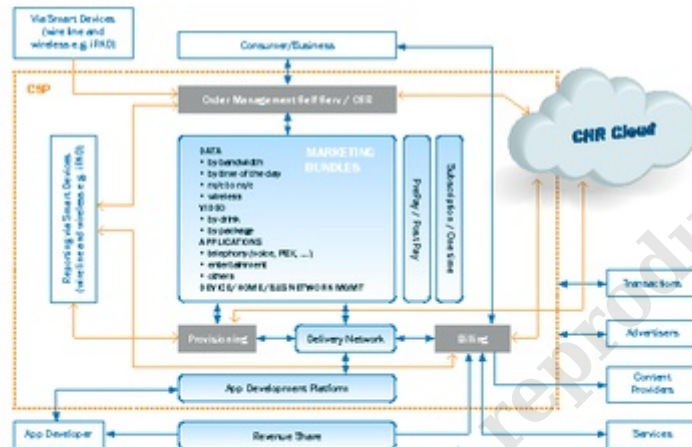
cloud services

Leveraging the power of Cloud Services is crucial to the future of your company. With converging technologies and crippling competitive pressures, CHR's Cloud offers answers in uncertain times. Building your business becomes only a question of how high and how far you want the Cloud to carry you.

GENERATE NEW REVENUE

With CHR Solutions' Cloud Services, the sky is the limit. Drive down operating costs, improve efficiencies and create new revenue streams to elevate your business.

Over the last several years, CHR has constructed a leading edge ecosystem which supports advertising, applications, transactions, services and content. This synergistic environment offers limitless opportunity for creating new revenue without the capital expense.



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**Mobility: Transforming their OSS
landscape with Comptel solutions**

January 2015

Dean Ramsay and Justin van der Lande

Ref: RXB98

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Living on the (Network) Edge:

A TELECOMMUNICATION PROVIDER'S GUIDE TO MAKING THE MOVE

The Internet of Things (IoT) is not new. Neither is the rapid rise of connected devices or customers' demands for instantaneous service. These are realities of digitalization. While they have become normalized, they are by no means the final destination on the journey to digital transformation. They are merely the first wave of the transformation process. In their wake, the next round of changes is brewing. These changes will require providers turn their focus to the periphery of their networks and get closer to their customers. This next frontier for providers to conquer? The Edge.

networktransformation.fntsoftware.com



Want to get where you're going without getting stranded? You need to ensure network integrity. Our solutions allow you to know and control what's in the network, where it is, how it's configured, and who can access it.

Know where you're going

The next generation of networks — whether LTE, fiber, or optical — replaces centralized architectures with highly distributed functions. While these new networks are designed to increase flexibility and profits, they do add a new level of complexity to the network. Suddenly, you're maintaining far more hardware and software configurations and are left exposed to the types of errors that can lead to outages and degraded customer experience. Nakina Systems' solutions power integrity in the world's largest networks, and they are provided in partnership with the world's largest and most advanced equipment manufacturers.

Chart your course

Nakina Systems and our integrity platform partners deliver software solutions that ensure your network is always headed where you intend.

Together, we help our customers:

- Accelerate network upgrades and new installs by providing a baseline readout of network elements software configuration before and after the upgrade.
- Reduce the drift between the gold standard network design and the network in operation through online auditing, discrepancy checking, and locking down the network with centralized security management and
- Improve asset utilization and reduce network hardware maintenance expenses by identifying discrepancies in inventory and assets records through automated network discovery.

Nakina Network Integrity Management Solutions empower next generation networks to deliver on their promises.

Our customers roll out services more rapidly, upgrade networks with less effort, and experience fewer outages because they partner with Nakina Systems.

Pick the right navigator

Nakina Systems takes a unique approach to the competing challenges of expanding networks and shrinking resources. By focusing on the issue of network integrity, we have freed millions of dollars from customer networks, helped service providers to deliver new offerings faster, and have helped decrease service outages across our customer base.

We are:

- Responsive to our customers, providing solutions to problems faster, more creatively, and more flexibly.
- Aggressive in our search to add value to our customers' operations.
- Constantly and relentlessly improving our technology, practices, and processes to achieve success for our customers and other stakeholders.

Nakina Systems has developed its framework and applications working with the world's most demanding customers in the world's largest and most complex networks. We understand carrier requirements, testing, scalability, and efficiency.





Case Study

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.





Company Fact Sheet

About Cycle30

Cycle30 provides hosted order-to-cash billing services for telecom, cable and utility operators in North America. Cycle30 is a subsidiary of GCI, Alaska's largest telecommunications and cable provider (NASDAQ: GNCMA).

Over 10 years, the Cycle30 organization helped transform GCI from a multi-product carrier of disparate services to a truly converged operator of bundled telecom services, consolidating nine billing systems, and increasing operational efficiency and competitive agility. The Cycle30 platform also enabled GCI to improve product strategy and successfully merge consolidate multiple providers under a common billing/OSS system.

Proven over years of real-world operator experience with GCI, the Cycle30 organization now operates as a separate company, offering its converged billing platform as a hosted service to small-and-medium-size converged operators everywhere.

Cycle30 Services

Around its core billing engine, Cycle30 has integrated leading commercial software for ordering, provisioning and business support. This makes the Cycle30 hosted platform the only one of its kind in the world, with all the ordering, provisioning, billing and back-office revenue systems a converged provider needs for a complete order-to-cash system.

Management

Jim Dunlap – President
Ariel Baird – Business Operations
Andrew Dunn – Application Architecture
Wendy Gonzalez – Products + Services
Jeth Harbinson – Global Sales
John Hegarty – Service Delivery
Isaac Szymanczyk – Communications + Marketing

Operations

Cycle30 manages all operations from its headquarters in Seattle. The primary data center is located in Aurora, Colorado, with recovery and on-demand data centers in Scottsdale, Arizona and Philadelphia, Pennsylvania.

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