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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%
ENTERPRISE
WIRELESS

DEMAND & DRIVERS
FOR
5G DENSIFICATION

PERVASIVE
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The Impact of Transformation



A Dynamic Panel Discussion
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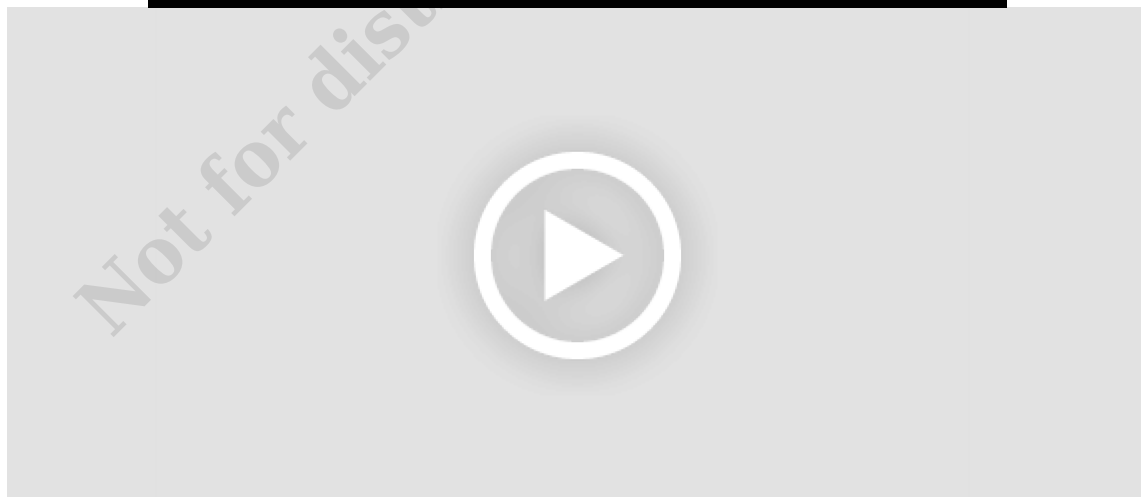
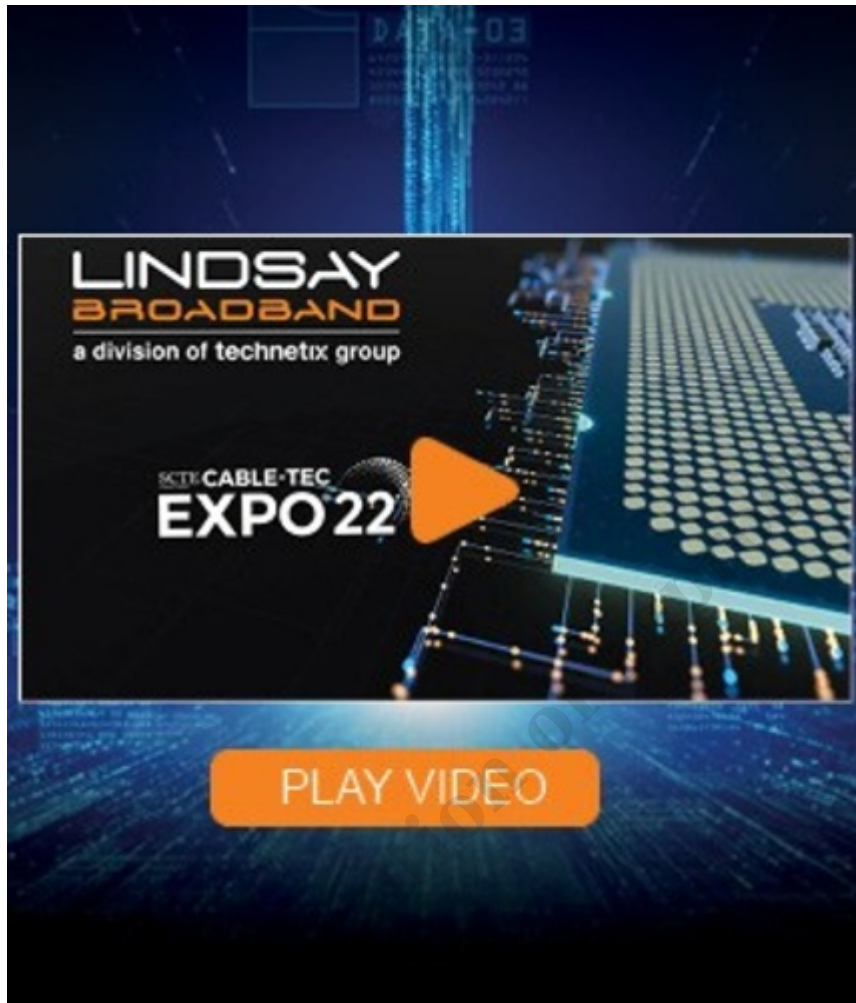
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**Nokia and NTT Demonstrate
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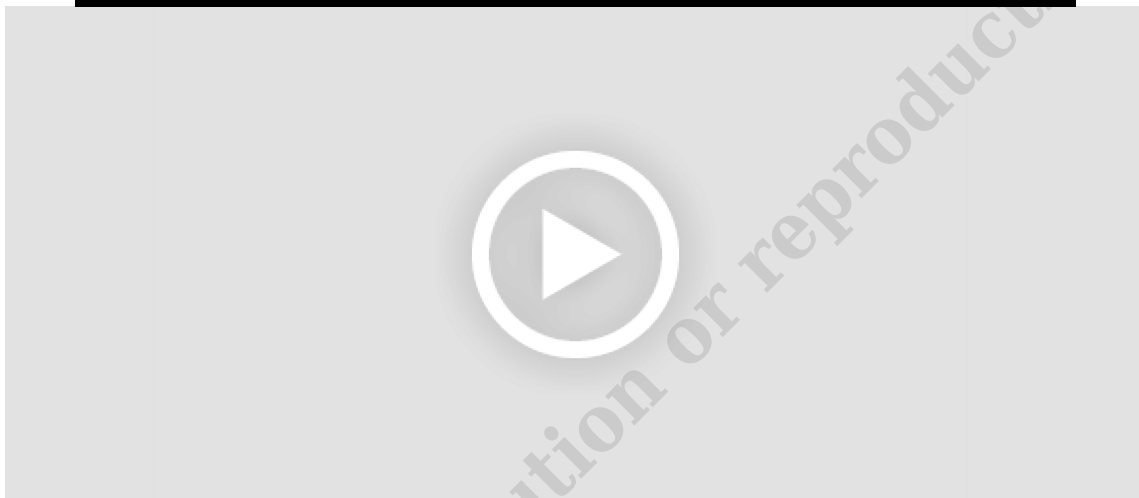
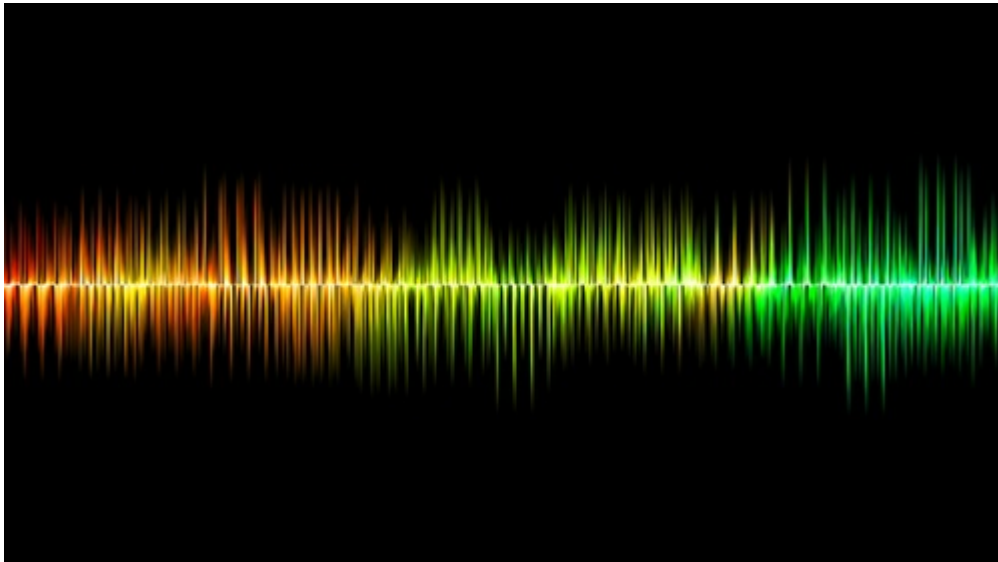
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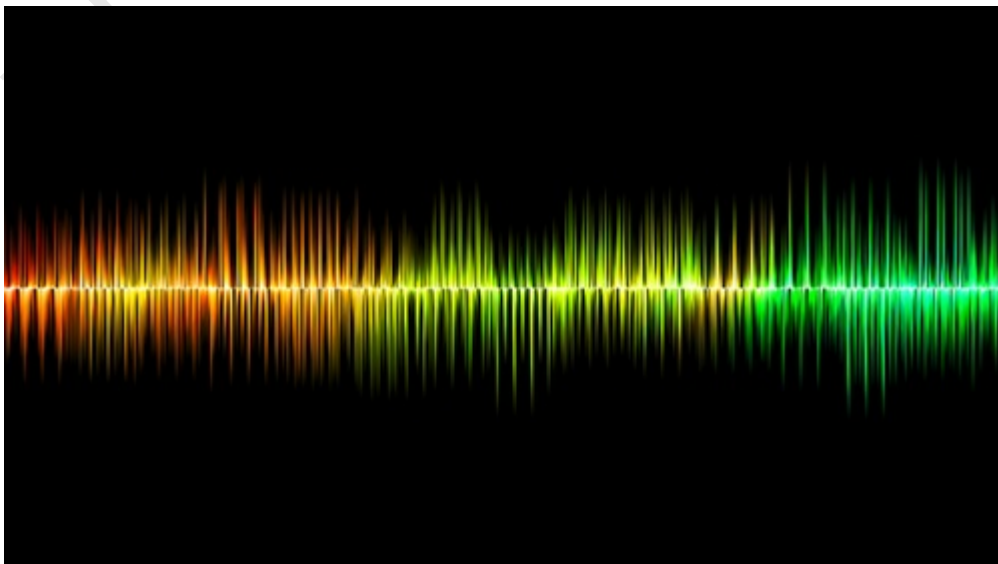
End-to-End Solutions for Broadband Networks

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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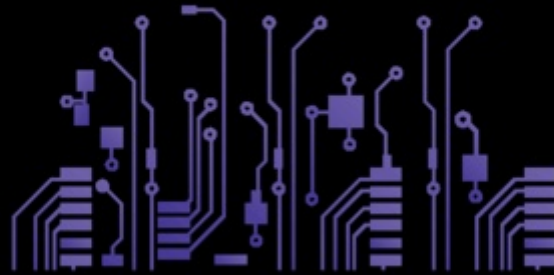


Telcos and Web3 Adoption

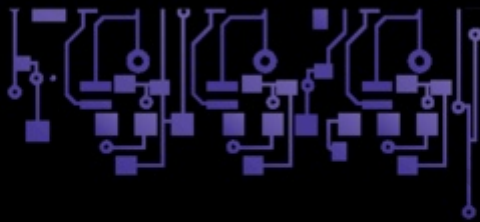


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**GSM v. CDMA:
Technical Comparison of
M2M Technologies**



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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.

eliminate the
guesswork with
GIS/CAD
services



Accurate and up-to-date mapping is crucial to nearly every element of your business. Everything from network maintenance, emergency response, budget forecasting, and company valuation require these records to keep your company on course.

Relying on single point dependencies and perishable paper records create vulnerabilities for your customer, community and company. CHR's GIS/CAD Services take the guess work out of geospatial management and ensure your business is on the right path.

MANAGED GIS/CAD SERVICES

- Data extraction and normalization from paper to CAD
- Database and coordinate creation (lat/long, roads, hydrology, landmarks, row)
- Data exports to OneCall-Geisec & Google Earth
- Data imports (FEMA, soils, DFW, FCC)
- Graphical object assignment (Routes, pads, C&G)
- Aerial Imagery and GPS
- Ongoing system updates and support of geospatial data
- Report, query and analytic capabilities
- Data files hosted on CHR servers
- Facilities management systems integration
- Advisory support and recommendation of network improvements



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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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Policy Control and Mobile Broadband's
Long-term Leap

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Managing the Customer Experience Migrates to Mediation

Next generation communications networks are rapidly proliferating, creating an urgent need for mediation systems that address OSS-related Use Cases. At the same time, the need for CSP's to understand their subscriber's experience is increasing, regardless of the technology or network their services are delivered over. At the intersection of these two trends, mediation is being transformed into a bedrock for managing customer satisfaction and reducing churn.





WHY OPERATIONAL MANAGEMENT IN VIRTUALIZED DATA CENTERS IS CRITICAL TO DELIVERING SERVICE ASSURANCE

Most large enterprises' business processes require IT to function smoothly and efficiently, making a robust and predictable IT environment vital.

As underlying IT infrastructure evolves, management capabilities also must keep pace so performance and availability remain at or above promised service levels. Mitigating growing IT complexity and reducing business risk requires a management system that can provide end-to-end management and visibility for IT operations; assure accuracy and reliable remediation for configuration updates and changes; proactively deal with availability and performance problems before they impact users and service levels; and rapidly identify problem root causes and deploy the right resources to quickly restore normal operations.

This EMC Perspective highlights why IT needs to provide service assurance; the management obstacles to achieving this; what's needed in an infrastructure management solution for enabling service assurance; how EMC's Solution for Service Assurance delivers the management capabilities required to meet these needs; as well as results and value being achieved by EMC customers.

EMC PERSPECTIVE

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Whitepapers



WHITE PAPER
FAST ANALYTICS OVER SLOW DATA



Brochures



Brochures



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.

OUR SOLUTIONS

- Complete mediation and interception
- Law enforcement monitoring center
- 56** 50 regulatory compliance
- End-to-end Lawful Intelligence system
- Comprehensive data analytics

ACTIVE IN **35** COUNTRIES → COVERING **1BN** SUBSCRIBERS

70% MARKET SHARE **US&UK**
We are the top provider in the US and UK for Mediation and Monitoring platforms.

8 OF 14 WORLD'S LARGEST
We work with 8 of the world's 14 largest communication service providers.

150 VENDOR INTERFACES
Provide network equipment interoperability with over 150 vendor interfaces to expedite deployment.

Brochures

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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/PIVR, 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.



White Paper

Orchestrating the Evolution to Cable IP Video

Written by:

Alan Breznick, Senior Analyst, Heavy Reading



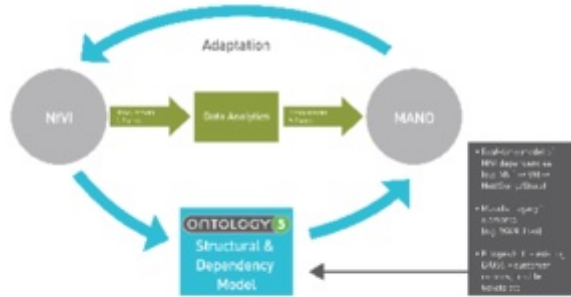
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As NFV moves from labs and trials into production, the need to assure the services it delivers has become urgent, but legacy tools struggle to deliver because they are unable to absorb the new reality of automated, high-speed orchestration.

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.

THE TELCO MARKET DEMANDS
Service Control

DigitalRoute
 Every bit counts.

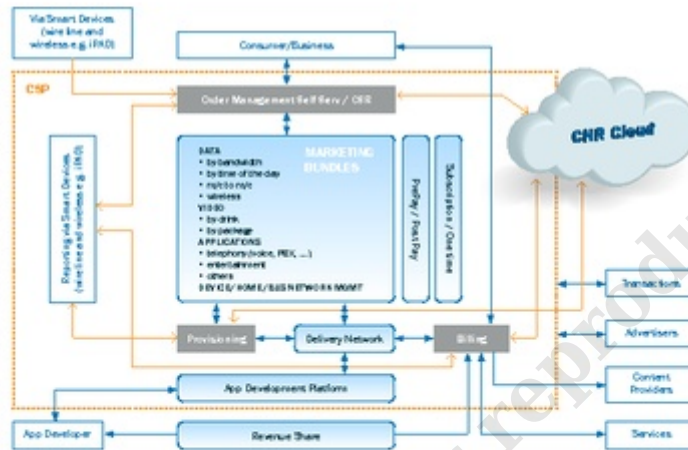
cloud services

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 shortest 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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Customer: Mohave Wireless, LLC
Web Site: mohavewireless.com
Customer Size: 15,000 subscribers
Country/Region: United States
Industry: Telecommunications
Partner: Info Directions, Inc.

Customer Profile:
 Mohave Wireless is a rural cellular communications company that provides voice and data service over a CDMA network in Mohave County of northwestern Arizona.

Business Situation:
 Mohave Wireless needed to eliminate manual processes related to orders, fulfillment and collections and gain greater visibility into their billing processes.

Solution:
 The CostGuard OSS/ISS software solution from Info Directions manages billing, workflow, customer care, traction, collection, order management and selling activities to produce efficiencies throughout the back office.

- Benefits:**
- Captured over \$400,000 in lost revenue
 - Eliminated manual billing processes
 - Reduced retail transaction times by 25 percent
 - Enabled retail advantage in the ability to offer new products

For more information about Info Directions products and services, please visit www.infodirections.com

Communications Provider Retrieves over \$400,000 in Revenue, Cuts Transaction Time by 25 Percent

background

Mohave Wireless is a rural cellular communications company that provides voice and data service over a CDMA network in Mohave County of northwestern Arizona—a market that includes Kingman, Bullhead City and Lake Havasu City. Providing local cellular service since 1992, Mohave Wireless is committed to delivering enhanced phone service including robust voice and call quality, while providing the latest mobile products and services to its subscriber base.

With approximately 15,000 subscribers and nine retail locations, Mohave Wireless was experiencing enormous growth as the predominant service provider for the county. The company was suffering under the weight of an inefficient back office system that required manual processes related to orders, fulfillment and collections.

Mohave Wireless was previously operating on a billing system that was not user-friendly or intuitive. Employees were frustrated with the amount of time it took them to enter a simple order and were spending extra time gathering customer information on paper to later key into the system. The previous solution was difficult to navigate and allowed an archaic “green screen” interface that resulted in inconsistent data that had to be corrected manually. With this system, bill runs were always processing on a specific day and did not allow the company the flexibility of managing their own billings leads. Mohave Wireless was searching for a way to eliminate repetitive processes and create an infrastructure for proactive monitoring and management of orders, with maximum efficiency and speed while reducing the time and cost that personnel had to spend on such processing.

Simultaneously, the company wanted to ensure that it was capturing and correctly estimating usage over-ages that they could not distinguish with their current solution. Leadership understood that it needed an automated system that could effectively manage selling, billing, CRM and retail operations for its growing subscriber base.

solution

The system that Mohave Wireless adopted is the CostGuard OSS/ISS solution from Info Directions. CostGuard manages selling, billing, workflow, customer care, traction, collection, order management and selling activities for telecommunications service providers. Its Web-based solution both manages billing support functions and provides workflow automation features to produce efficiencies throughout the back office.

The two companies jointly evaluated each step in Mohave Wireless’ business processes, from sales and order capture to fulfillment, customer care, and tracking. Info Directions is *open, and professional*, which made for the smoother billing conversion we have ever experienced,” said Jerry Herbert, General Manager for Mohave Wireless.

By providing advice and system insight, Info Directions helped Mohave Wireless improve their business processes and maximize the benefits of their CostGuard solution. With this guidance, Mohave Wireless was able to take advantage of features such as mobile tickets and Guided Assignment to enhance the efficiency of their system. “The new system is easy to train employees using Guided Assignment. This makes it easier to understand new products and services and offer them to customers with confidence,” said Jill Brown, Sr. Financial Analyst for Mohave Wireless. CostGuard’s Guided Assignment feature helps salespeople and customer care representatives suggest additional services or accessories based on a customer’s previous selections.



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 B/OSS system.

BILLING SERVICES

CHR provides turnkey back-office management including systems 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 B/OSS solution. We will apply our best practices and industry expertise to reduce your operating costs and improve your operations.

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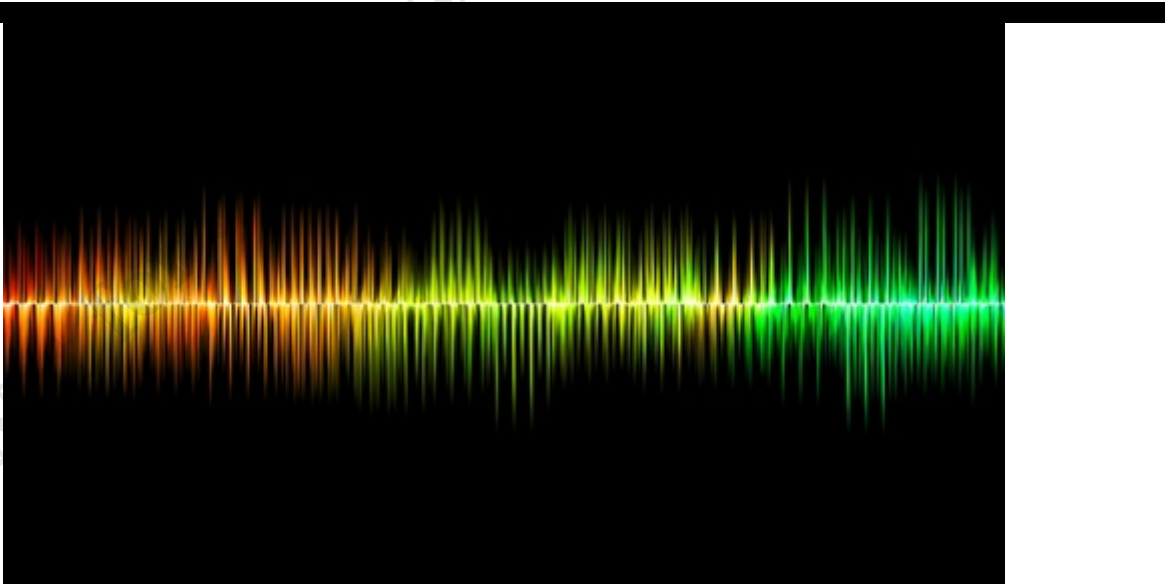
The Balancing Act of Mobile Workforce Management

FULFILLING MULTI-SERVICE OBJECTIVES
WITH PRIORITY-BASED OPTIMIZATION

A ViryaNet White Paper




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