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PIPELINE / VOLUME 22 / ISSUE 4

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Accelerating
AUTONOMOUS NETWORKS
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O-RAN & DAS
Transforming
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6G
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TRENDS

RF COVERAGE
FOR NEXT-GEN IoT

PERVASIVE MOBILE
CONNECTIVITY

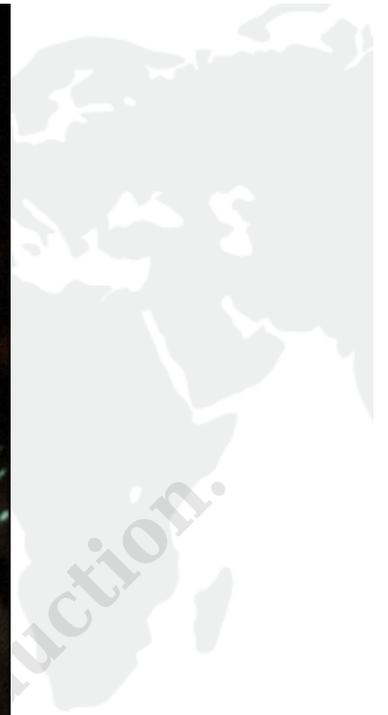
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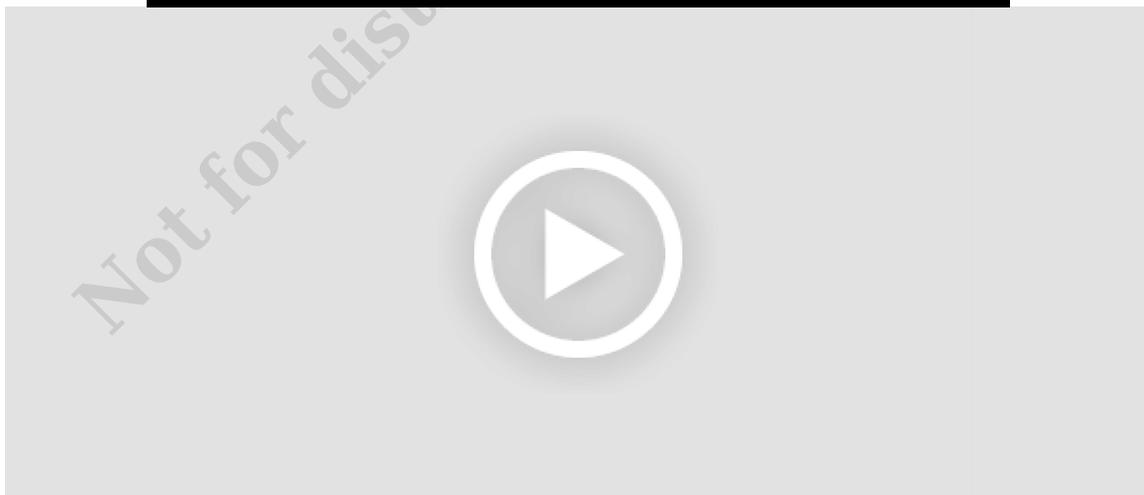
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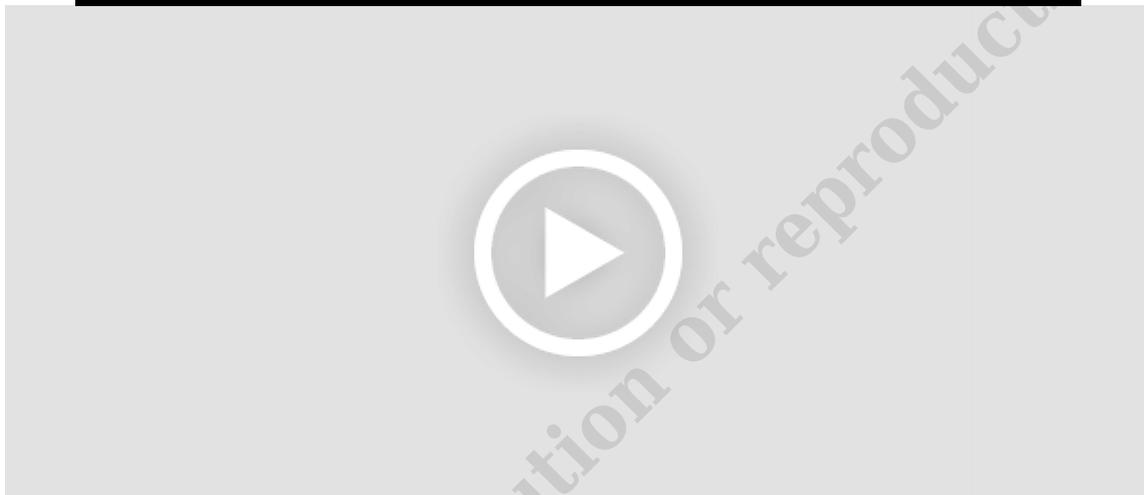
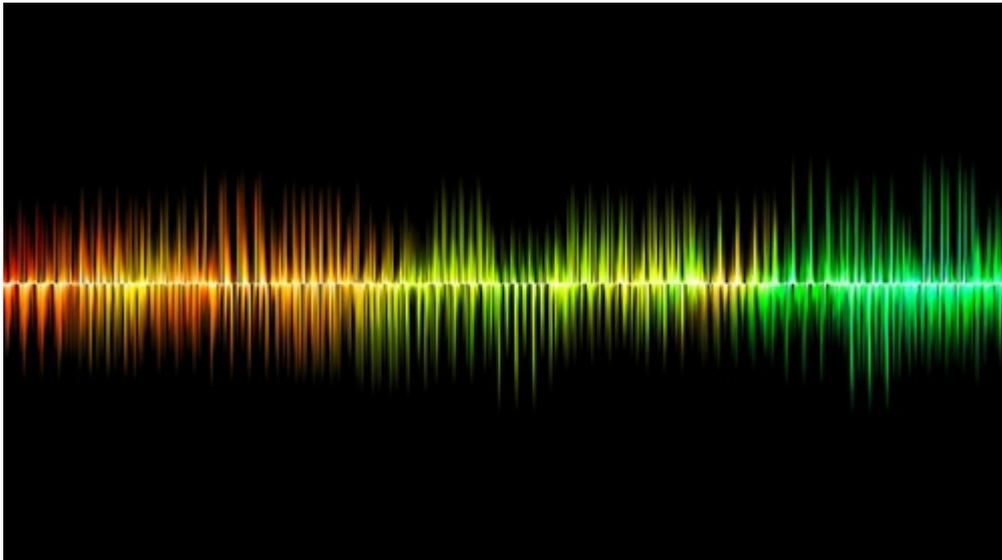
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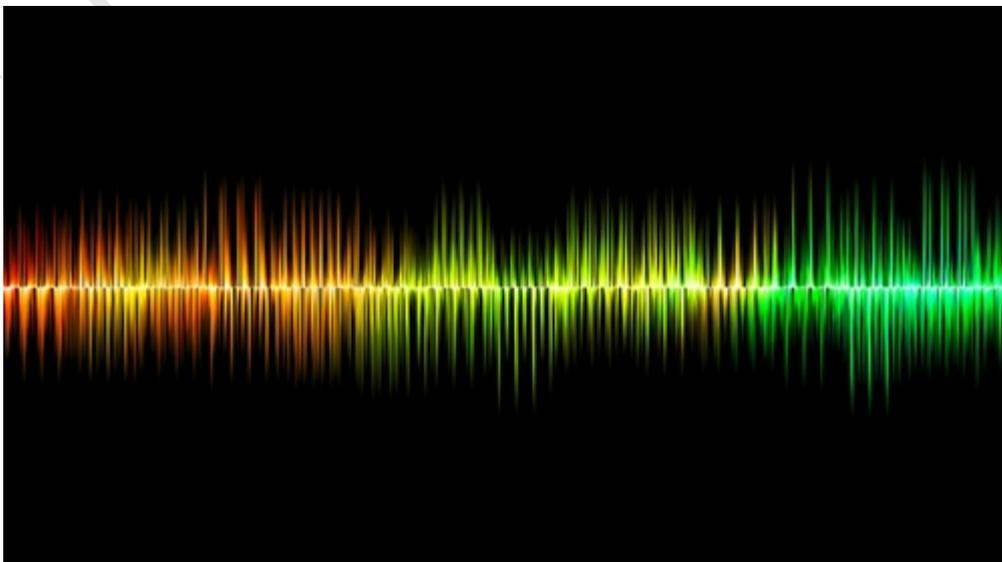
End-to-End Solutions for Broadband Networks

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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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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Agile Architecture for Digital Innovation

*A Dynamic Panel Discussion Featuring
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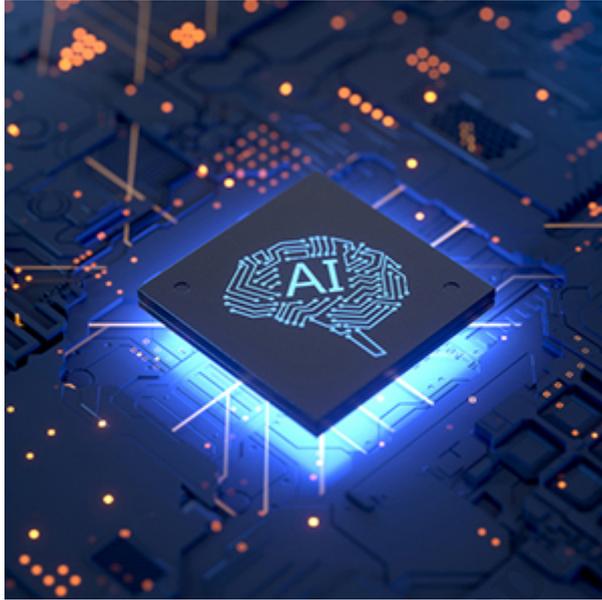
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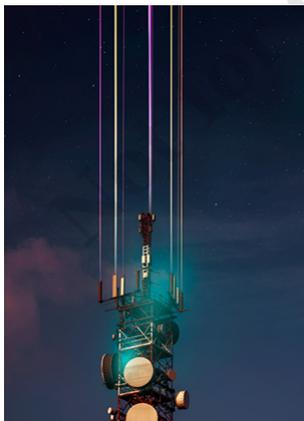
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Don't let your network... END UP HERE.

Network Integrity Controller

Set sail with total visibility of your network – and the journey ahead. Our Network Integrity Controller automates software audits of network devices in multi-technology, multi-vendor environments.

Check your gear regularly

As service providers build out new networks that provide new services—such as VoIP, video, and other high-bandwidth offerings—an accurate picture of the network can mean the difference between rolling out new services on-time, or losing a market opportunity to a competitor. In today's service market, network managers are facing a conundrum: more traffic, more services, and more complexity have to be delivered with fewer people, fewer errors, and fewer outages.

Network integrity is the key to making sure that your gear will get you where you want to go. In spite of quantum leaps in network architecture and technology, maintaining configuration integrity has remained a manual, time-consuming, and error-prone craft. Design standards for device configuration to support VDI, a new wireless data app, or an LTE network service may be painstakingly developed in the lab, but actual implementation in the field drifts rapidly through error, repair, replacement, and provisioning processes.

Use accurate maps

The only way to achieve consistency in network integrity improvement is, in spite of the opposing forces of network expansion and operations resource contention, is to automate the quality feedback loop of network audit, discrepancy check, and gold standard maintenance. Nakina's Network Integrity Controller is designed to show exactly which equipment is present, ensure that the firmware, patches and operating systems that run the equipment are correct and up-to-date, and that all software parameters are set as intended.

Set sail with confidence

Most network outages are like navigation errors—they are the result of human error. The Network Integrity Controller minimizes the risk of outages by reducing inadvertent errors through sophisticated online auditing and parameter checking. It can scale to support the auditing of thousands of network elements and network-attached servers. Because it is automated, and works in any environment—LTE, Ethernet, Fibre, MPLS or others—with equipment from a wide range of vendors, the Network Integrity Controller streamlines tedious spreadsheet maintenance with automated table and report creation. With the data generated by the Nakina Systems solution, you can bring services to market faster, reduce outages as these services scale, and realize significant cost savings.

Key Functions

Nakina Systems' Network Integrity Controller automates the most tedious and error-prone part of your job—maintaining network integrity. With an accurate picture of the network, you can feel more confident about the state of the network and your ability to deliver new services on-time and on-budget.

Data Import

- Store gold standard data in a common baseline data repository
- Import data or manage the life cycle of the gold standard input

Data Collection

- Extract real-time settings from networks

Audit

- Compare planning tool reports or templates to live network views using a specified tolerance criteria
- Display and report discrepancies
- Provide notification of any service-affecting change

Parameter Baselineing

- Create hierarchical templates of parameters based on groupings
- Compare and commit settings across a network

NE Resource Audit

- Select by NE or group of NEs
- Customise and filter output

Reconcile and Configure

- Apply/override network view with planning tool data
- Configure specific parameters or specific elements
- Re-audit to confirm changes

WWW.NAKINASYSTEMS.COM



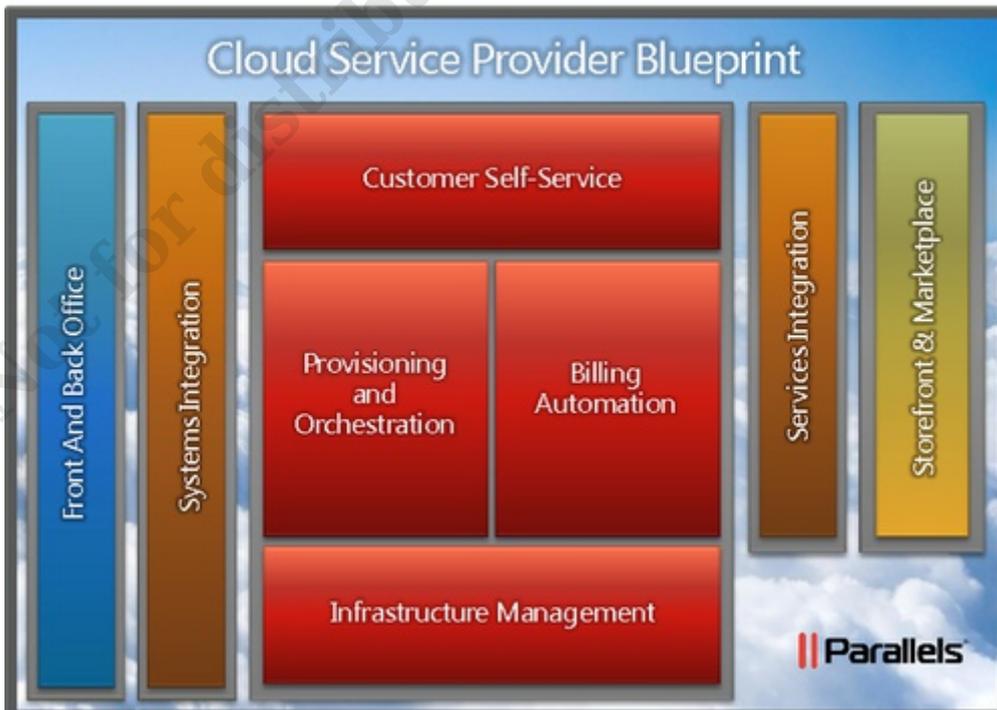
The Sky's the Limit: Ten Reasons Why Now is the Time for Cloud

A Whitepaper

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Cloud Service Provider Blueprint





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Your Success Starts Here

Improving Wholesale Bottom Line by Deploying a Premium Reporting Portfolio

Network and Service Quality Visualization Supports Service Offering Differentiation

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WiFi solutions

For more than 75 years, CHR has designed, built, managed and maintained networks that matter— including one of the first five LTE networks in the nation and fully integrated WiFi networks for the Department of Defense.

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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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.

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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Know Your Customers, Keep Your Customers: Five Key Benefits of Using Automated Surveys to Gauge Customer Satisfaction

CSG International | September 2011

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Brochures

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Acumen CPQ™ Overview

Configurable CPQ built for the Digital Communications Service Provider.

Acumen CPQ is a powerful Product Catalogue and Configure, Price, Quote tool for Service Providers of all sizes – enabling an interface for both the Sales and Engineering teams, and the Enterprise Customer. It is an intuitive and easy-to-use shopping-cart style quotation tool that is rules and role driven for both sales teams and end-customers. It is fully configurable with a powerful admin section and comes with 30+ out of the box features.

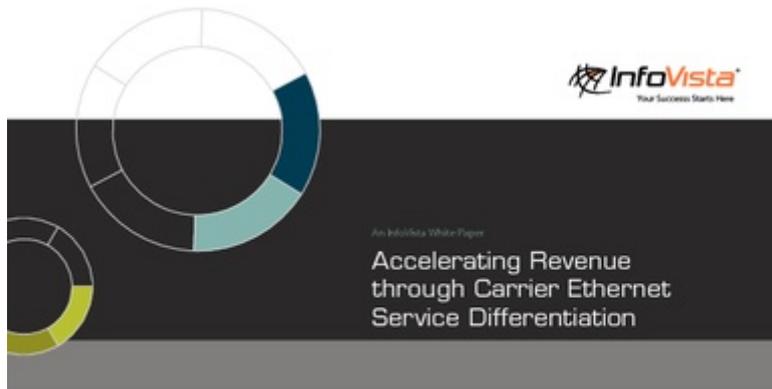


Acumen CPQ™ | Core Capabilities & Features

Super Admin Capabilities	Core Features
<ul style="list-style-type: none"> • Products • Price Query • Reports • Product Configuration • Manage Roles and Workflow • Configure Generic SOF Parameters • Configure Supplier • Customer Association • Local Loop Margin/ Tax • Currency Conversion • Notes Configuration • Manage Widgets • Useful Information 	<ul style="list-style-type: none"> • Guided, shopping-cart style sales UI. • Configurable product catalog supporting wide range of telecom products. • Configurable products and rules to support non-standard pricing. • Meaningful role specific dashboards and reports. • Roles and permissions-based access to features. • Multi-currency support and currency conversion. • Accurate and customizable pricing. • Customer specific rate cards. • Configurable discounts that can be customized for individual user roles. • Quick quote generation. • Quotation version management. • User friendly UI with the ability to create quick copies/ clones of line items and quotes. • Extensive audit logs. • Get prices for multiple bandwidths and contract terms in a single click. • Quick quote comparison for option analysis - create multiple copies of quotes with minor differences. • Google maps based local loop pricing UI. • Country and vendor specific tax and margins for local loop pricing. • Third party vendor management. • Support of last mile pricing within the product database as well integration capability with third party providers. • Capability to host millions of local loop building lists and prices within the product database. • Real time margin analysis. • Automated and configurable pricing approval workflows. • Benchmarking data for competitive pricing. • Ability to present bundled prices in customer quotation. • Parent-child relationships in related products. • Sales funnel and quotation data reports, price query reports. • Third party supplier management module.



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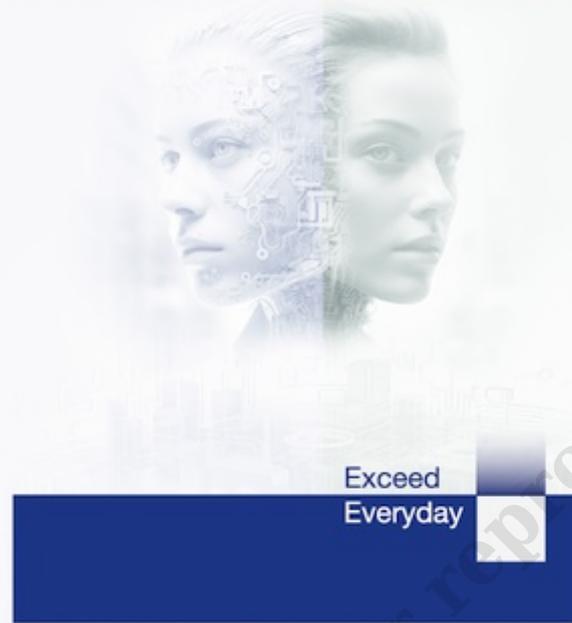
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CASE STUDY: MULTI-CHANNEL CUSTOMER INTERACTIONS



Client: Leading Retail Entertainment Provider (The Company)

CHALLENGE

The Company was looking for a single vendor to deliver a comprehensive solution that combined agent-led customer care, multi-channel inbound and outbound customer interaction management, 1st and 3rd party collections, in-store data lookup (Reverse Phone Append), and consolidated customer reporting while simultaneously reducing overall customer care costs. The initiative was to consolidate services being handled by two vendors and connect one of the Company's selected in-house operations.

CROSS-CHANNEL SOLUTIONS PROVIDED

- Inbound Store and Customer Care
- 1st and 3rd Party Notifications and Automated Collections
- Past-due Postcard Reminders
- Interactive Self-help IVR
- Secure Payment IVR
- Customer Satisfaction Surveys

SOLUTION

CSG deployed inbound and outbound self-service customer care and collections solutions that utilized two of its direct customer interaction on delivery channels: Interactive Voice Response (IVR) and direct mail (postcard notifications). By utilizing these proactive customer interaction delivery channels, CSG was able to supplement current agent activity with a automated self-service interactions, which helped the Company control costs and increase agent productivity and customer convenience.

- Speech-enabled inbound IVR solution for in-store and online customers, which supports self-inquiry and self-resolution
- Integrates with the Company's historical database for customer identification
- Dynamic customer routing to the appropriate associate based on skill set to facilitate first call resolution
- Designed an enhanced pre-collection strategy that leveraged outbound interactive voice messaging and Postcard Reminders for past-due videos and games
- Secure Payment IVR (CSG is a PCI-DSS Level 1 Service Provider) for customer self-resolution of past-due accounts
- In-store account lookups based on home telephone number (Reverse Phone Append)
- Customer Satisfaction Surveys allow the Company to improve the customer experience based on customer feedback
- 1st and 3rd party Automated Collections (outbound & inbound) for self-care within the automated call (Secure Payment IVR)
- Delivers reporting to separate corporate and franchisee store collections
- Integrates with the Company's collection associates to augment automated systems
- Past-due Direct Mail Postcard Reminders deliver a hard-copy written format reminder that an item is past-due and gives the customer self-service options to purchase the past-due item immediately by calling into CSG's self-service Secure Payment IVR

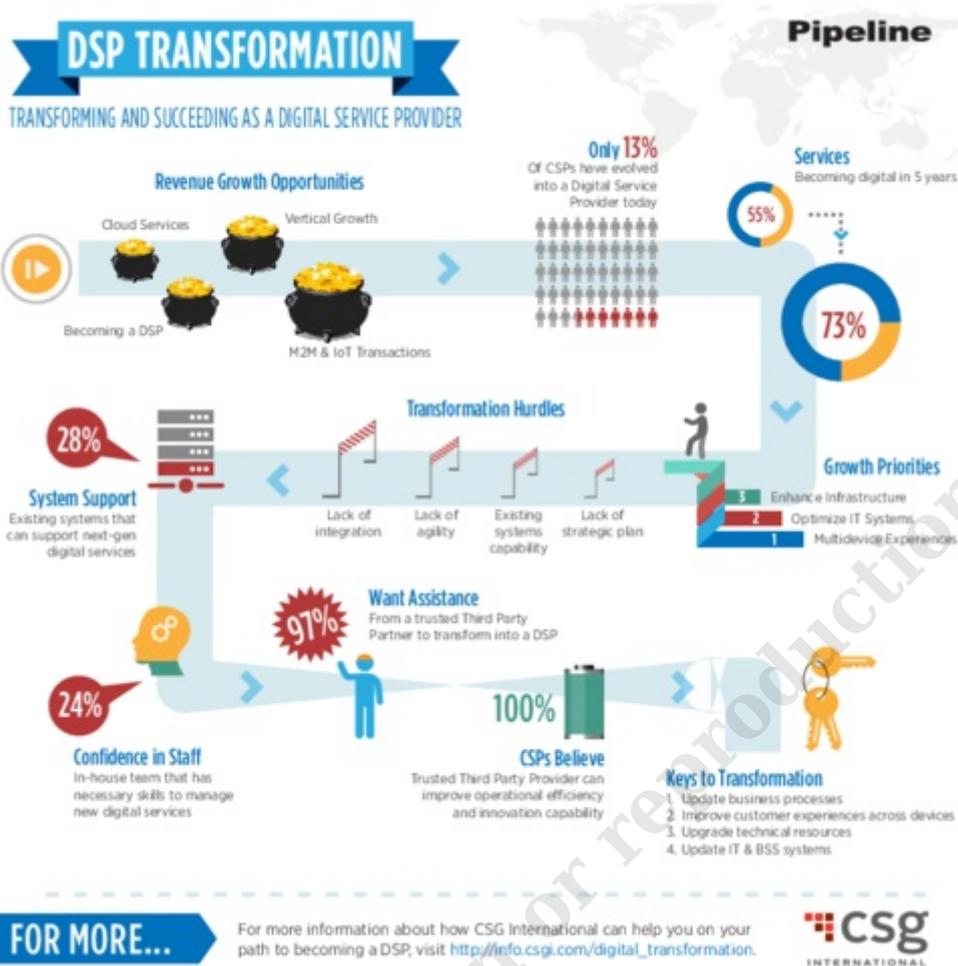
RESULTS

- Implementation of Automated Collection Solutions reduced the Company's annual collection costs by \$1.7 million
- 1st party Automated Collections notifications and self-care options significantly reduced the number of accounts being sent to 3rd party collections — cutting average collections costs per customer by more than 50%
- Solution generated approximately \$2.9 million in additional collections
- Solution decreased the Company's client roll rate by 3% as well as its days sales outstanding (DSO) and delinquency rates

csgi.com

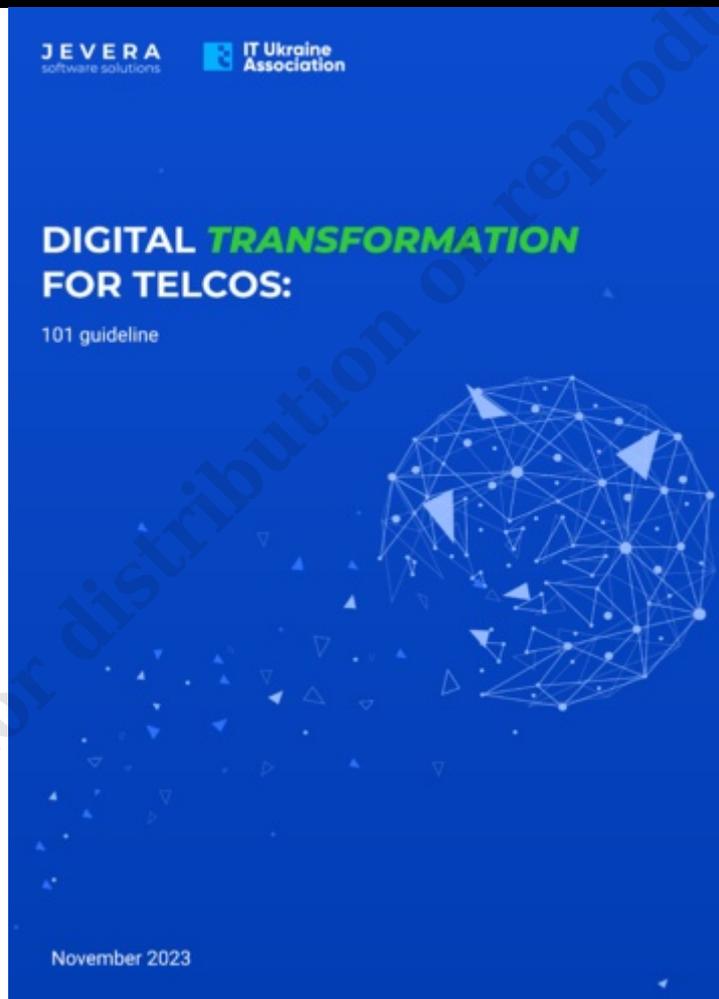
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3 WAYS YOU WILL OVERPAY FOR YOUR MOBILE WORKFORCE MANAGEMENT SOLUTION AND 3 STRATEGIES TO AVOID IT







Case Study: GSM wireless network build

PROJECT

GSM wireless network build

SITUATION

When a converged telecommunications services provider faced the sale of its wireless partner properties to a large, national wireless company, it chose to expand its market penetration by building its own wireless GSM network.

The provider engaged Cycle30 to build out, integrate, and deploy all of the BSS & OSS functions to support the new GSM network and wireless services in three metropolitan areas, over an aggressive nine-month timeline.

CHALLENGE

Critical to the ROI of the buildout was the ability to successfully acquire a number of new wireless subscribers, while retaining 99 percent of existing subscribers from the old MVNO network.

Cycle30 planned and delivered all necessary BSS, OSS and conversion functions to support two separate network and product go-live dates, dictated by a strict schedule from the provider acquiring the partner assets.

In addition, severe winter conditions across the provider's geography forced Cycle30 to compress the timeline in order to complete the conversion before winter.

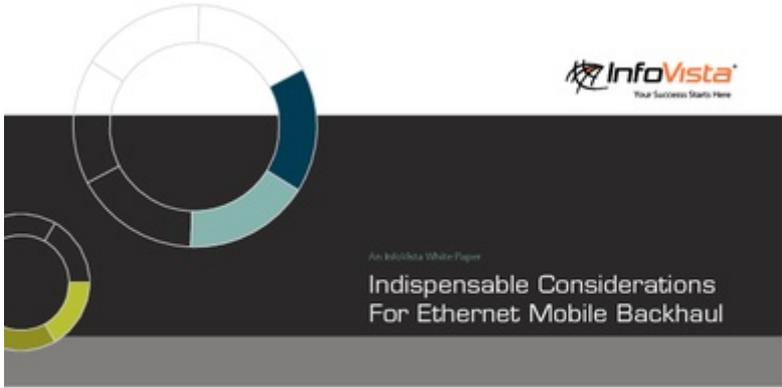
RESULTS

- Cycle30 conducted end-to-end testing of the network and conversion process to ensure a seamless customer experience while finishing the deployment
- Delivered the project on time
- Delivered the project 10 percent under budget
- Cycle30 flexed to the provider's network deployment needs, so that BSS/OSS and conversion activities accelerated progress instead of impeding it
- Provider successfully converted 48,000 subscribers to its new GSM wireless network
- Customer conversion retained 99.2 percent and added 42,000 new subscribers.

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product bulletin

Next Generation Billing and CRM

Omnia360 transcends traditional billing and relationship management with a complete 'out-of-the-box', pre-integrated customer relationship management and billing solution. Available as a fully-hosted cloud-based solution, managed service or on-site license subscription, this 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 comprehensive, turn-key back office solution for CSPs to monetize the largely 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. The solution helps drive operational efficiency by empowering you to create custom fields, enforce business-specific rules, 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 hierarchy capability helps optimize sales accuracy while reducing the time it takes to complete the entire lead-to-cash cycle.

Powerful Business Analytics

It is critical for management to be able to monitor business performance. With Omnia360, management maintains a single scorecard that covers sales, marketing, and customer service. This up-to-the-minute information provides inline charts with drill-down intelligence to visually navigate data, identify trends, and uncover new insights.

Market Leading CRM

Combine the familiar Microsoft® Office fluent 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, much more. Customer service specialists are empowered with tools that simplify case management, streamline escalations, improve knowledge sharing, and enable more effective account management, all while helping to contain service costs.

- **Improve Monetization Opportunities**
with a unified customer view and increased pipeline visibility
- **Simplify Business Systems**
with a complete, pre-integrated back office solution
- **Elevate Customer Experience**
with consistent customer interactions

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