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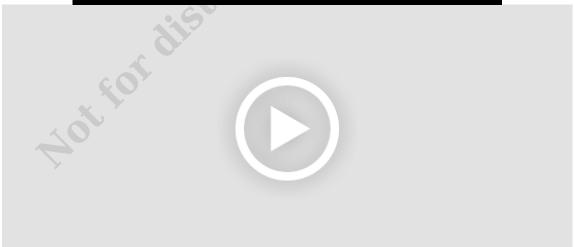
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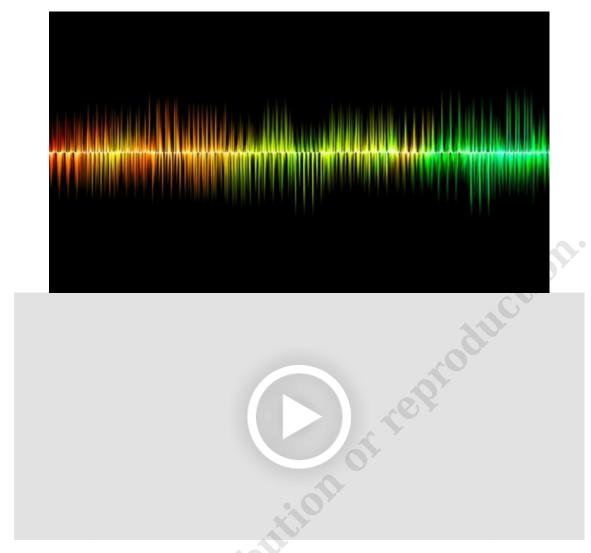
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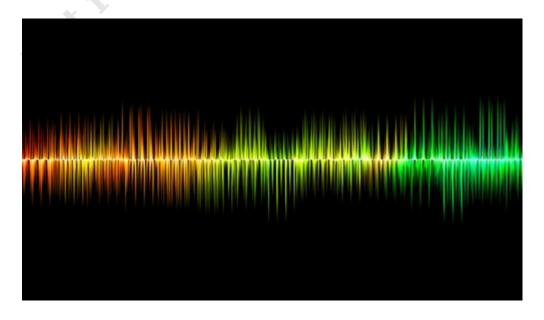
End-to-End Solutions for Broadband Networks

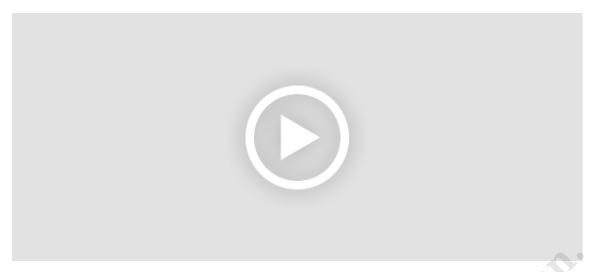
In case you missed Lindsay Broadband - a division of Technetix group at the SCTE Cable-Tec Expo, this video highlights the must-have, end-to-end solutions for your network.



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.





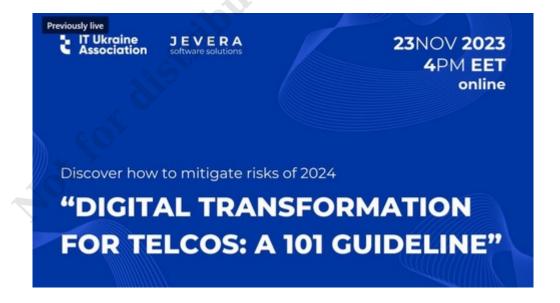
Podcast: The Evolution to 6G

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 Accussion Featuring
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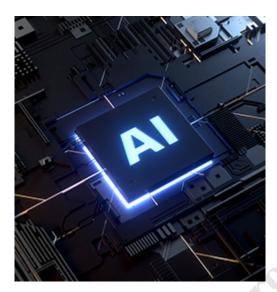
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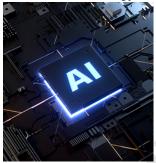
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TruOps Common Lange

simplify financial compliance, streamline asset management

challenges

Maintain accurate view of fixed

Track assets in multiple

Fixed Asset Register compliance.

solution

conectiv TruOps Common

results

Realize ~ 10 percent saving on procurement costs

Simplify tracking and reporting to meet financial compliance requirements

knowing what you have, what you need and what you don't

For mobile service provide such a first in rigidal accurate view of the fixed accert acrossion ertire network has always presented a challenge. For group operators, that challenge is multiplied tracking the value of its join disease is multiple networks across different tempones, managed, maintained and upgrate dejectally with equipment sourced from multiple verticors is near impossible upon the fixed of the verticors is near impossible upon the fixed of the verticors.

Whether his leases one service provider or a group operator a naccurate fined asset register allows a service provider to more proactively manage and register per process a variety of business, aperational and financial metrics. For example, others proved understanding of the capabilities of the assets on the register not only allows for more stormed puschasing decisions, it also allows both the operations and finance teams to be more proactive. On top of that, in a group situation tenables information accoss networks to be correcticated to deliver economies of scale for the procurement for an operation of the consumer of team.

"Common Language helps service providers meet compliance requirements, it helps measure the return on its capital expenditure on network equipment and it supports operational efficiency in network management and maintenance. No other single solution can help service providers meet their Regulatory, Capex and Opex targets quite like Common Language."

the driving factors

From a business perspective, being able to demonstrate that the Group leeps an accurate Fixed Asset Register is essential from a compliance perspective. For many service providers, the audit process usually involves inspections taking samples from the Fixed Asset Register and then checking the actual locations where the equipment was reported to be held to determine the accuracy of the invertion.

Only if all the assets sampled, in all the locations, delivered an exact match, could the auditors say that the company's assets were properly safeguaded. The unpalitable truth is that, for many service providers, the mismatch between the data on the registry and the equipment in the field is isonificant.

What's mose, it is vital that the same granularity of detail in held by both the operations and the finance team and that exactly the same descriptions are used across the business. Without that commonality, accurate records cannot be maintained.

In addition, given the frequency with which the schmology evolves and the constant explaining and upgrading of parts, today's Fixed Asset Register needs to be both dynamic and easily maintained. This will ensure that as assets are added and removed, any changes in functionality are accurately tracked to a granular level. Without that dynamica man discussive, the segister may be behind eality and the auditor's sampled assets may have already been replaced.



DIGITAL BUSINESS PLATFORM

Digital transformation, which is the key for higher agility, efficiency, cost reduction and improved customer experience, is inevitable for CSPs to survive in the new digital economy. However, large-scale digital transformation projects are expensive and risky and may take jues to complete. Meanwhile, agile competents are ending your readest share. Speed to digital assistors.

Itiga's Al expertise and platform capabilities are used to differentiate the BSS platform was better customer focus

in the state of th

Modular, Tiexible, cost effective and scalable digital solutions

Etiya Digital Business Platforms are 5G ready, agile, end to end, and fully virtualized digital solutions

Management (CRM), Customer Service Management (CSM), Configure, Price, Quote (CPQ), Product Customer Relationship and Charging and API gateways. They support both E2C and 828 outcomer segment.

Since the platforms use a modular, API-driven architecture, they are flexible. CSPs can select to launch a full-stack new BSS platforms, to replace their legacy platform, or modernize it step-by-step, by choosing which platform components they want first and add new solutions, as needed, later.

Etiya real-time, automated digital platforms use microservices to speed time-to-market for new products and enable easy experimentation with new business models and service concepts.

How does it work?

Etya Digital Business Platforms contain three main layers Experience, Engagement, and Enablement, Data analytics, Al, and business intelligence functions are used to add intelligence to these layers and enable personalization, process automation; and efficiency.

Digital Experience	Online self-care, E-commerce, Mobile App. Content Management	Open APN
Digital Engagement	CRM, CPQ, Offer Management, Rewards & Loyalty, Community Management, CSM, Recommendation Engine, Order Management	
Digital Enablement	Product Catalog Management, Charging & Rating Management, Billing Management, Partner Management, Policy Management	



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Mobile Video Policy Control

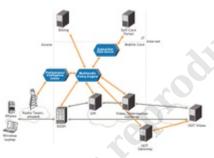
- Generate new revenue with mobile video services
- to spedific customer segments
- Align revenue and network costs using dynamic policy controls

Business Requirement
There is no question that video is both popular and consumes more network resources
than almost any other application. A look at oursent data points tells the story You'lube
has become the second largest search engine. Nobile video is predicted to grow 46 fold
from 2009 to 2014 and consume of percent of all mobile bandwidth by 2014. Clearly,
finding ways to mitigate the impact of mobile video on the network in a way that still
meets consumers' demands is critical to the success of mobile operators.

Challenges
Previous network solutions for handling data services primarily centered on static service provisioning in which operators take a "one-stee-fit-sall" approach. Insoverer, with the advent of data-nich services like mobile redee, that approach has a number of shortcomings. In fixed networks, peoparabical service demand can be accurately predicted and the networks built out accordingly. However, mobile networks, by returns, enable movement, which makes it more difficult to predict geographical service demand and network build out. Moreover, operators are increasingly investigating and deploying triend principal plants, which offer end users a variety of service levels and options that go far beyond the "one-size-fits-all" static provisioning approach.



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Mobile Video Architecture



ction.

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 as the center of the retail universe. The retail business is all about procuring, marketing and selling products, with business success dearly linked to product success. Retail aucross is the retire heavily dependent on factory supply—the product design, build, warehousing, and distribution states associated with making the products the retailer wants to sell.

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

There a few important differences for a CSF, given the fact that CSF products are mainly service offerings that they other supply themselves. Services are not lined up in boxes on shelves, Services are not shipped from distant factories whenever stock are not shipped from distant factories whenever stock are not shipped from distant factories. They must be designed, manufactured and packaged.

The underlying service delivery capability must be in place before the services can be delivered, but as the factory for the resulter's product must be operational before a retailer can expect to have their product to self. And like any other products, services are adulent to self, and like any other products, services are adulent to supply influsions—their delivery is constrained by network and gustams capacity and capability, and by the ability of the organization so minunge the delivery and support of those services.

the delivery and support of those services. With this dutil role as Wholesaler and Resaller, CSPs have all the same requirements as a substitutive company for the renafictativity, management and apply off products, on a dignated yeas as at the orders flow in from the customers and on a longer term basis as products are created, delivered, and eventually resided. But while beginner in order any CSP company understands the primary importance of products, so or may CSPs company understands the primary importance of products too may CSPs company understands the primary importance of products in a figurement of air during the primary products across the claim in a figurement of air during could be supported by the products their an essential for groundsale performance.

SPIRIT COMMUNICATIONS

Switches to EMC Watch4net and reduces OPEX by 60%

**



ESSENTI ALS

Challenges

- Customer contracts required robust SLA monitoring anistics
- The legacy system (InfoVata) grew too expensive and difficult to explorate
- IntoVista was slow to deliver upgrades
- InfoVista's upgrade costs were comparable to purchasing an entire solution

Solution

- Watch-inet was deployed in just a few days.
- Watch-linet is running in a virtualized environment
- Dedicated Oracle, Solaris resources are no longe required, resulting in cost savings

T improvements

- 60% reduction in cost-per-managed device.
- 40% savings on collectors and additional modules
 Replaced Java JRE with last AJAX/Web 2.0 front end
- Troubleshooting is simpler, faster due to

Business Benefits

- Increased revenue from premium portal offerings
- Improved data retention (from 7 days to 7 months of "5-minute" data)
- Improved SLA metrics and more accurate billing from more granular bandwidth utilization reports
- Enhanced service offering with ad-hoc reporting and automated report delivery

CUSTOMER PROFILE

ABOUT SPIRIT COMMUNICATIONS

Headquartered in Galumbia, SG, Spirit Gammunications prevides carrière class telecommunications services to businesses and government agencies throughout the acutheastern U.S. over its private Rose-based MPLS network. Spirit offers a wide variety of solutions including Vall P, SIP trunking, local and long-distance colling, wholesale long distancer SST AIN, on-designal valled conferencing audiovated interest services. Spirit Communications prides tast lip providing solutions that are reliable, Sexible and nesponsive to customers' business meets.

Munitoring efficiently the wide choice of bandwidth and quality of service along with the service level agreements (SLA) is essential to the success of their extension.

BUSINESS CHALLENGE

Spirit operates a mixed network comprising equipment from Arat el-Lucent, Claco, Adva, Adraan, Clena, Brocade and more over soores of serviers and serveral thousand network devices. Proactive performance monitoring is strategio to Spirit success in delivering a competitive offering that finistries a variety of options for grasulatiny of bandwidth and quality of service (CloS). Spirit provisions service level agreements (SLAs) that allow oustomers to select end-to-end performance metrics based on CIR, Itame-loss, delay and jitter. Spirit's oustomer contracts absolut dry require robust SLA monitoring solution.

In 2006, Spirit implemented infoVlata's performance management solution. The product met the initial requirements, but as time went on, the soft wave became more countersome to upgrade and maintain; additionally. Spirit needed supgrades to support the Alcud for Lisconis 1625 BMA and these were slov in coming. Spirit decided to investigate a variety of alternatives, including using open source tools to build their own solution as well as purchasing commercially available; products.

EVALUATION AND SELECTION

Spirit embarked on a search for solutions capable of providing performance reporting for Alcottelf-Locent equipment. Spirit determined that the cost of IntelVatia upgrades equaled the cost of purchasing an entirely new solution. Next, the IT seam carefully

EMC²





Media(n)™ – a seamless IPTV interface that synchronizes all the elements of your IPTV ecosystem in order to streamline back office operations and drive revenue.



Whitepapers



White Paper

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

Sponsored by: iconectiv Karl Whitelock January 2021

EXECUTIVE SUMMARY

iconectiv TruCps 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 positions for over 40 years.

Complexity from new technology evolution (e.g., network virtualization, private networks, hosted networks, 50, multi-access edge computing [MEC], and the Internet of Thirgs [67]) requires assets to be aligned with business and technical objectives to keep costs within expectations, address end-to-end (EE2) is envice objectives, support parties reaccountability, maximize interactive efficies (exp, and show business management responsibility. On the basis of its successful brig-standing customer implementations and evolutionary approach to the network management processes, Common Language is expected to play a major losi 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 retwork 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 provides face is how to manage the physical and virtual assets that define the services they provide. Understanding the physical and bigical placement of assets is a strategic to several internal operations functions including network planning, inventory, service orchestration, carbidg, activation, network assurance, service-level agreements (SLAs), policy, ming, and charging. The multilevel construct of the underlay and oversity connectivity inflastratural and the SZE pather-acted services to customers of all types trings additional layers of asset tracking complexity that must be addressed by each of these business and operations management domains.

January 202 1, IDC #US47230621

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MATRIXX CONVERGENT CHARGING

As communications business models evolve and As communications business modes evolve and mature, marketing organizations are constantly creating new services, payment models are evolving, and devices are becoming increasingly sophisticated. Customer segments are becoming more defined and granular, and what once was white a prepaid or a postpaid relationship has grown into a multi-faceted array of payment options. These mix and match payment methods also provide options to charge physical goods to a mobile account or access personal funds as a customer would at a bank.

Devices and access methods are also multiplying making the picture yet more complex for service providers. Their subscribers have a choice of Smartphones, set top boxes, tablets, PCs, laptope, garning consoles, and mp3 players to access services via cable, DSL, FTTH, 3G, Wi-Fi, Wi-Max and new LTE networks. However, competition is fierce and network access charges are becoming commoditized.

Communications service providers are challenged with rising above these complex operational and service delivery environments to focus on the customer. Regardless of device, access method or

payment option, customers should be presented with compelling, integrated service bundles that are insultive and customizable to fit their personal needs. Convergent charging a policatione play a key role in delivering a differentiated and consistent customer experience as they provide the central link between services, payment methods,

MATRIXX Convergent Charging provides a highly flexible, hyper-efficient application that runs on low cost, commoditized hardware and which easily integrate with existing billing systems. It helps the marketing department and the business implement initiatives to strengthen the brand and increase customer value while providing dramatic scale and driving cost out of operations

Increase Customer Value MATRIXX Convergent Charging enables service providers to better monetize their portfolio of services and content and increase customer lifetime value. It provides a flexible and configurable set of pricing, charging and balance management features so that service providers can quickly and cost-effectively implement a convergent charging layer without disrupting existing IT and network assets.

Functional Highlights

- Bundle products and services together regardless
- Quickly deploy new pricing models, promotions
- Manage balances and payment relationships
- Develop and implement loyalty programs and preferred pricing
- Track and enforce usage quotas, allowances and credit limits
- Bundle services together to provide cross-product discounts
- PRoll out the same offers across prepaid and postpaid subscribers
- Share balances across devices, such as sharing a data allowance across a laptop, tablet and Smartphone
- Create prepaid/postpaid hybrid offerings

MATRIOX Software 779 E. Evelyn Ave | Suite E. | Mountain View, CA 94041 | matrixocore.com

Presentations







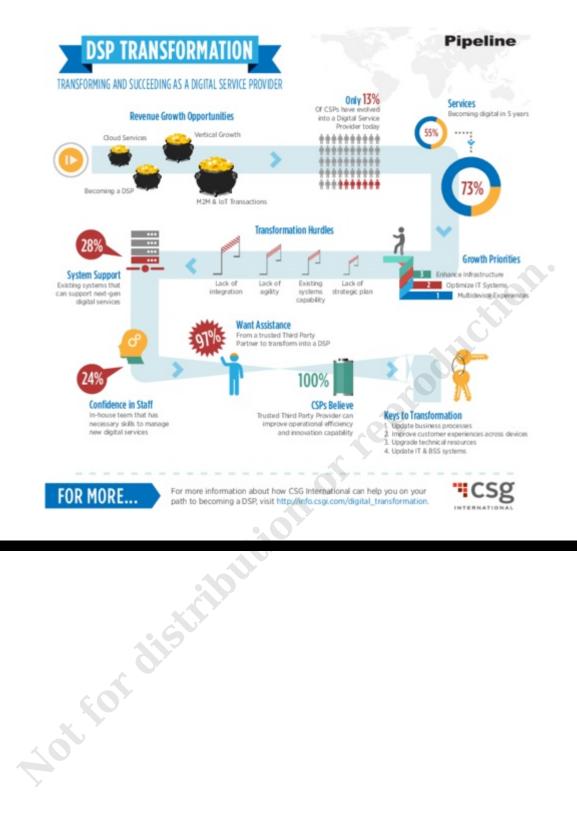
WiFi solutions

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For more than 75 years, CHR has designed, built, managed and more that networks that matter—including one of the first five LTEne twoks in the nation and fully integrated WNFF networks for the Department of Defence.

Whether your goal is to implement a WIFI network that guarantees outstanding coverage for broadband internet access on you're seeking new revenue streams by becoming a VoiP or Wineless Internet Service Provider, our experience enables the entire ecceptam.

CHR's WEFI Selutions include fee bleend-to-endor a to-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 expect of your Wiff project.





AOI BILL





Omnia360 Product Bulletin

- Marlet Leading CRM

MODULES

- · Account Management • Billing
- · Product Catalog
- · Case Management Order Capture & Mana

- · Sales & Marketing



- Opportunities with a unified
- · Simplify Business Systems

AOU SIGNIFICATION OF THE PARTY OF THE PARTY

A dynamic, pre-integrated billing and CRM solution that brings together your entire business ecosystem.

Omnia360 transcends traditional billing platforms with a complete 'out of the-box, pre-integrated customer relationship management and stilling solution. Available as a fully-hosted cloud-based solution or onsite license subscription, our nest-generation solution empowers communications service provides (CSPs) with a client center model for service differentiation and regid deployment of new services, especially within the Enterprise space.

Leveraging Microsoft Dynamics® CRM. Omnia360 best of breed software platform delivers a comprehensive, turn-lies backoffice solution for CSPs to monetze new untapped revenue opportunities.

Centralized Customer Management

Powerful Business Analytics

It is critical for management to be able to monitor bus less performance. O mais 300 maintains a regise scorecast that covers sales, marketing, and customer service. This de to the minute information provides in line charts with drill down intelligence to visually never be data, identify trends, and uncover new insights.

Market-Leading CRM

Combine the fearlist Market Services.

Market-Leading CRM

Combine the familiar Microsoft® Office fluent user interface with powerful CRA software to maximize marketing effectiveness, win more sakes, and enrich ousselnest enrice interactions. Leveraging the power of Microsoft by namically CRM, marketing and sake photos posits are equipped with feacile segment retache books, ampfield cames gift management capabilities, lead to cash visibility, real-time sales forecasts, and much, much made. Quotomer service specialists are emplowed with book that simply sace from growness, streamine escalations improve knowledge sharing, and enable more effective appoints for the committee of the latter than the sales for the committee of the committ

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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 VOR, video, and other high-bandwidth offerings—an accurate picture of the network can mean the difference between rolling-out new services ce-time, or losing a market opportunity to a competitor. In today's environment, network managem are facing a conured sum; more traffic, more services. and more complexity have to be delivered with fewer people, fewer erroe, and fewer curlages.

Network integrity is the key to making sure that yourgear will get you where you want to go. In point of quartum leaps in network and blocking and technology, maintaining configuration integrity has remained a market, time-consuming, and error-prone cost. Design standards for device configuration to support VDIF, a newwise less data app, or an Ette met backhaul service may be painstakingly developed in the lab, but actual implementation in the field drifts spidly through error repair, replacement and provisioning

Use accurate maps

Act for distrib

The only way to achieve comitte at network integrity improvement, in spite of the oppositions of network expansion and operations verse st, in spite of the opposing

resource contraction, is to automate the qual 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 ensures that the firmware, patches and operating systems that run the equipmentare correct and up to-date, and that all software parameters are set as:

Set sail with confidence

Most network ourtages are like navigation errors—they are the result of human error The Network Integrity Controller on inimises the risk of Network integrity/Controller in inimize the risk outage by reducing indevente errors through sophisticated online auditing and gerameter checking. Econocide to support the auditing of thousands of pearantees in its addeds of thousands of network elements and networkattached servee. Because it is automated, and world in any environment— LTL Bithernet Fiber, MG, or others— with equipment from a wide range of vendors, the Network Integrity Controller the data gene wied by the Nakina Systems solution, you can bring services to market faste (reduce outages as these services cale, and realize significant contravings

Key Punctions

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

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

Data Collection

• Struct real-time settings from networks

- Compare planning tool reports or templates to live network view, using specified solerance criteria
- · Display and report discrepancies
- Provide sotification of any service affecting change

- Paracheter Baselining

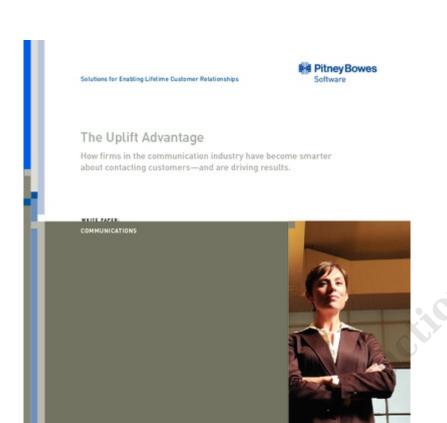
 Costs his a chical to replates of parameters based on groupings
- Compare and commit settings across a network

- ME Deserve Audit
 Select by NE or group of NEs
- · Customize and 6 he routput

- Recordile and Configure

 Applytosende network view with planning tool data
- Configure specific parameters on specific elements
- · Re-audit to confirm changes

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