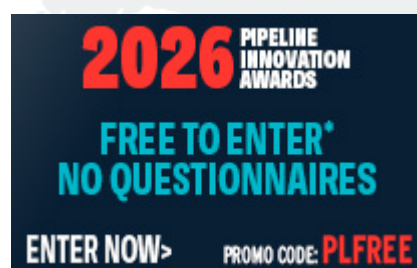


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DEVELOPING THE WORKFORCE
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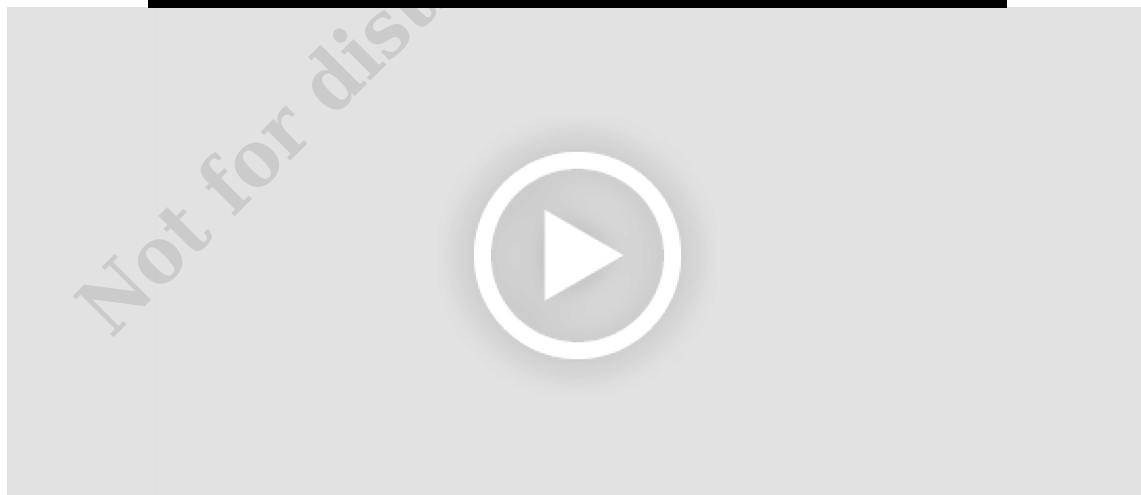
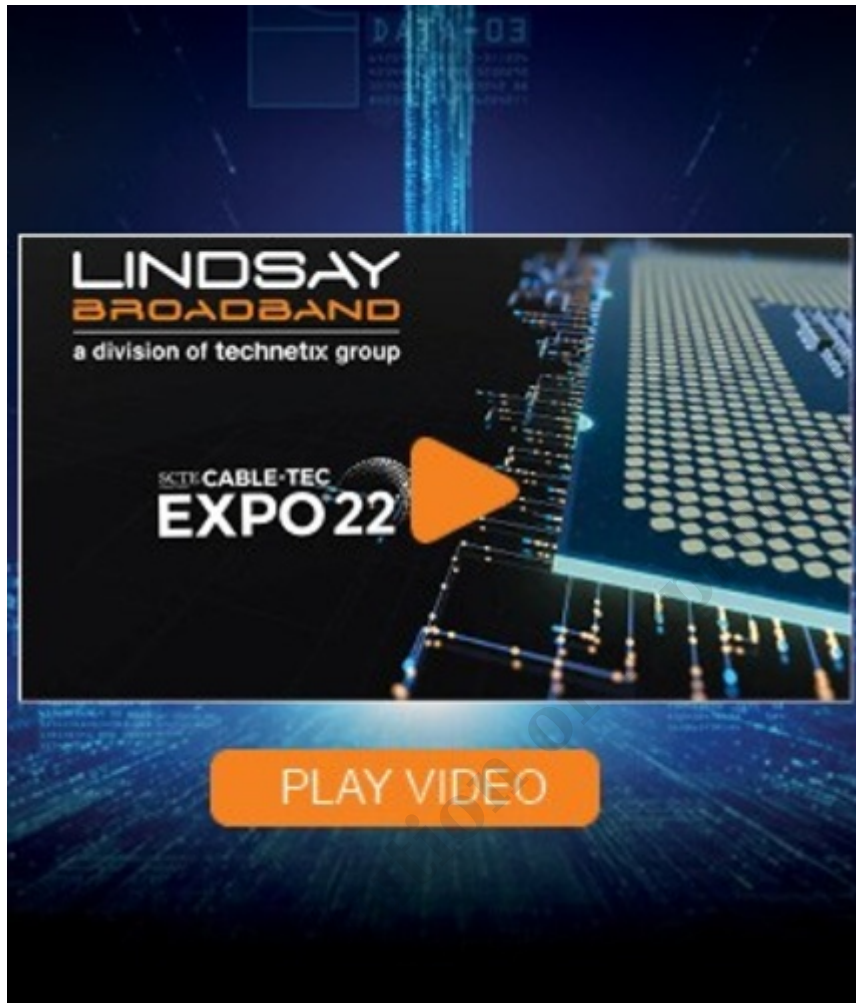
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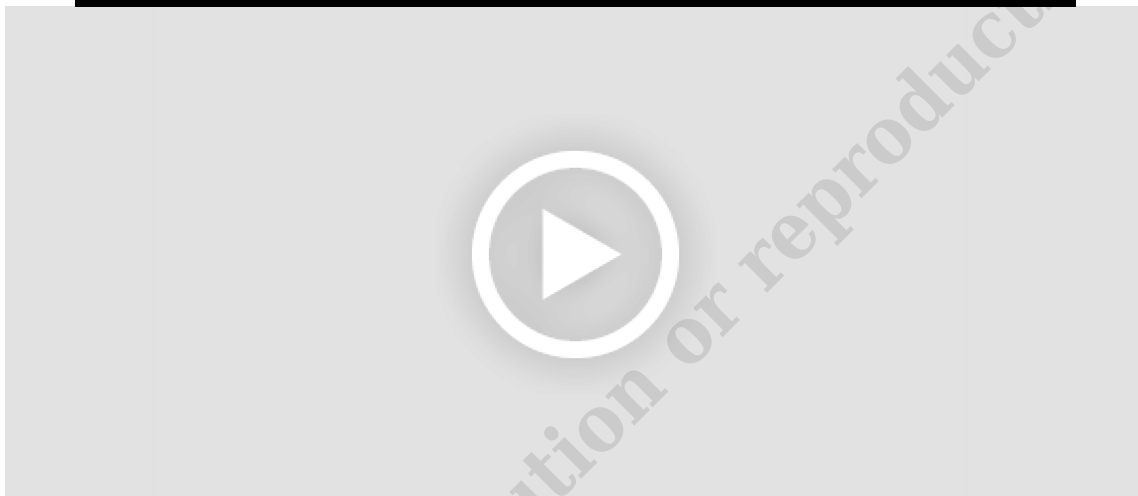
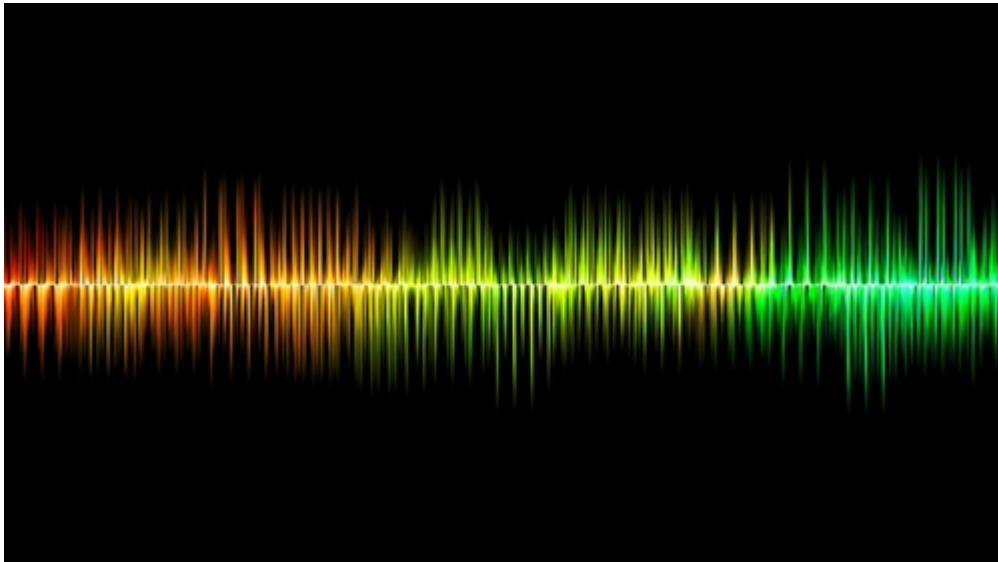
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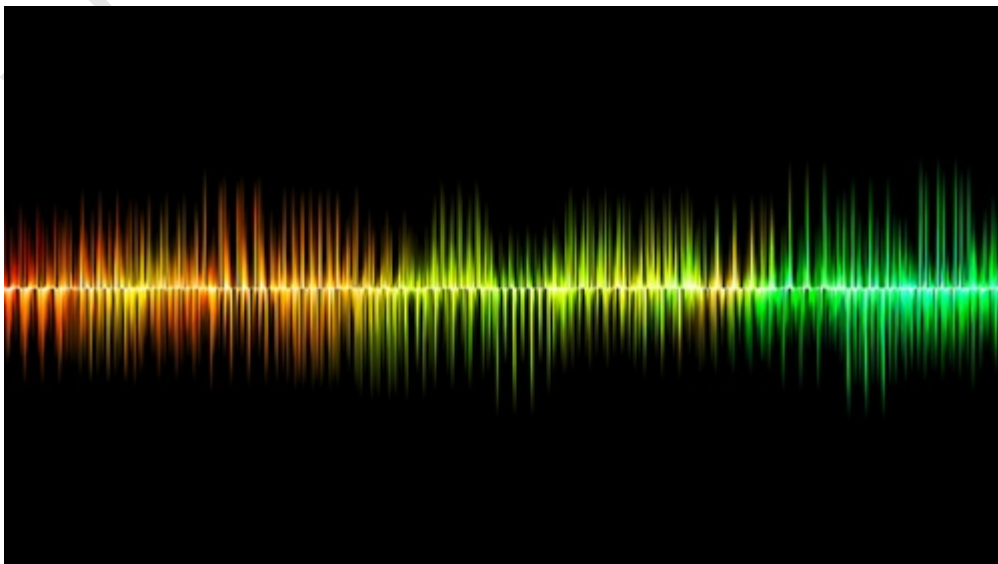
End-to-End Solutions for Broadband Networks

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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DATA SERVICES OVER 25 YEARS, 150,000 MILES OF DATA

SAVE money on data services
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AVOID government regulatory obstacles

Enghouse Data Services (formerly Moore Resource Systems) is a specialized team of GIS experts who make it possible for organizations to create and maintain geo-spatial enabled data for their next generation enterprise IT applications. The services that Enghouse provides can involve large data entry tasks to help populate unique data models or specific data updates based on field changes to a company's assets.

Our Enghouse Data Services team specializes in providing seamless project management support for an organization's own team. Data Services works with an organization's staff to assist in the tracking and completion of tasks on a daily basis to meet specific and prioritized needs.

DATA VALIDATION & QA

The Enghouse Data Services team offers specialized tools that enable validation of source data before conversion to the target. These specialized tools can highlight problem areas that need to be corrected (e.g. data integrity rules) that might be broken by migrating to the target system.



DATA TRANSFORMATION

In a complex data cleansing and migration effort, data very often needs to be transformed between one or more formats. The Enghouse Data Services team accurately transforms the most challenging data, whether spatial or non-spatial.



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Pulse INP Comprehensive End-to-End Revenue Assurance

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PEER with partners

ENABLE policy-based routing

ADDRESS number portability

NEGOTIATE with suppliers

ENSURE quality of routes

RECONCILE billing records

EMPOWER decision making



The Pulse Intelligent Network Platform (INP) offers advanced analytics into supplier identity, margins, and profitability. It enables real-time margin assurance by centralizing and automating routing policies and network control. Pulse addresses unique requirements of the Interconnect team to negotiate better rates, increase the number of suppliers, lower costs, and improve operating margins. For the Network Operations team, Pulse INP can deliver the ability to translate several hundred rate decks from one or more suppliers, in disparate formats, into real-time switch routing actions. It also prevents revenue leakage by providing the ability to apply routing policies in real-time, bypassing or overriding routes, or diverting suspected incoming traffic for specialized handling. Pulse empowers key decision makers with valuable network insight to make informed and timely decisions.

Modular, flexible, real-time solution

Pulse is an industry pioneer in real-time, intelligent least cost routing solutions. Pulse is flexible, modular, and can be scaled to meet the growing needs of your organization. Start with basic least cost routing and add new modules as your needs grow.



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White Paper

**Managing Complex Multi-Enterprise
Selling & Ordering Process Critical for
Next-Gen Order Management Solutions**

Prepared by

Ari Banerjee
Senior Analyst, *Heavy Reading*



www.heavyreading.com

On behalf of

Sterling Commerce
An IBM Company

www.sterlingcommerce.com

November 2010



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 people 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 control 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 into 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 measures like password aging and minimum alpha-numeric password requirements
- Customize security privileges at the individual user level and define 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 his or her own unique account credentials and a list of authorized applications or elements, significantly simplifying and improving the end-user experience.

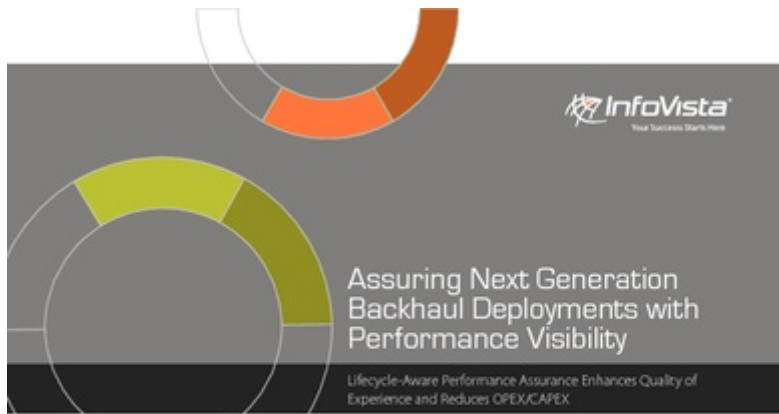
User Privileges

- 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.

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Cloud Connectivity Management Made Simple: Your Cloud Services Are As Good As Your Network

Bruno Giguère, Advisor – CTO Office, EXFO

INTRODUCTION

Cloud services are the Holy Grail for service providers. As enterprise customers look to reduce IT expenses, cloud services are looking more promising than ever in terms of achieving these savings. Although multiple stakeholders are increasingly involved in the delivery of cloud services, none have as much impact as cloud carriers.

But first, let's start with a simple question: "What exactly is cloud computing?" According to the definition recently published by the National Institute of Standards and Technology (NIST), "Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." The document further elaborates on its definition by providing a list of essential characteristics, in addition to service and deployment models. The essential characteristics are: on-demand self service, broad network access, resource pooling, rapid elasticity and measured service. A definition for each characteristic is provided in the following [NIST publication](#). By applying a network view of these characteristics, it becomes immediately clear that a static and classic network is not able to deliver on these promises. An intelligent and dynamic network is mandatory to delivering on these essential characteristics.

Cloud transport connectivity can be described as the connectivity between cloud consumers and cloud content. This connectivity makes delivery of cloud computing services to the cloud consumer possible. In order to deliver this type of connectivity, cloud carriers need high-performance services with multiple classes of service and high availability.

Cloud application connectivity can be described as the connectivity between the computing resources via different data centers. For cloud application connectivity, services must be high performance and be available at all times.

This application note discusses the technologies being used to deliver the different type of connectivity, and the management steps (e.g., activation, performance monitoring and troubleshooting) required to successfully deploy cloud computing services.

GOT CONNECTIVITY?

To deliver cloud computing services, cloud providers must possess the computing infrastructure necessary to process and store very large amounts of data, and rely on cloud carriers to connect all the pieces together. This section covers the different types of connectivity used to deliver cloud computing services in more detail, and also covers the technology used to achieve this connectivity.

Cloud Transport Connectivity

The original connectivity strategy for cloud computing was the Internet. What better a solution than the most ubiquitous WAN technology to access data centers? Although the Internet is great for consumer applications, it lacks the attributes mandatory for enterprises: security, network performance, data governance and regulatory compliance ([NIST CS1](#)).



Figure 2. Current challenges in cloud service delivery.
(Source: Metro Ethernet Forum)



Figure 1. Cloud connectivity.

Figure 1 shows the data flow for delivering cloud computing services and the two types of connectivity required, as follows:

1. Cloud transport connectivity
2. Cloud application connectivity

EXFO | Assessing
Next-Gen Networks

W²CM Smart Replay

Near-Sanad, Product Manager, EXFO

INTRODUCTION

Along with the phenomenal growth in volume of data on the mobile Internet, there has been an increase in the different types of data flowing through wireless networks. In addition to traditional types of data, such as file transfer protocol (FTP), hypertext transfer protocol (HTTP), voice-over-Internet protocol (VoIP), e-mail and video streaming, there has been a constantly increasing list of over-the-top (OTT) smartphone applications generating new types of data, including peer-to-peer (P2P) data from applications such as BitTorrent and Kazaa. In an effort to differentiate themselves, operators have also been offering their subscribers their own unique applications, which in turn contribute to the variety of data on wireless networks.

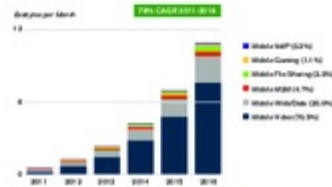


Figure 1. The explosive growth in mobile data.

This vast amount and variety of data has created a need for it to be managed effectively. There are several motivating factors to do so, chief among them being:

- Honoring service-level agreements (SLAs) and delivering committed quality of service (QoS) to customers
- Efficiently managing network resources
- Generating revenue as opposed to being just a "dumb pipe" for data
- Securing the network

Let's look at each one of these aspects in a little more detail.

HONORING SLAs

Operators have SLAs with their customers to guarantee a certain minimum performance from their networks. To be able to meet these commitments, the network elements have to be able to ensure that the required amount of resources is made available when needed. A recent study has shown that 5% of users consume 60% of bandwidth. This type of usage pattern can endanger an operator's ability to meet its SLA commitments to the rest of its subscribers. Operators have a strong incentive to manage the data usage of such heavy data users (e.g., by throttling the throughput rates available to such users).



Figure 2. Mobile network operators (MNOs) need to proactively manage network usage.

Honoring SLAs may also mean being able to identify data associated with key customers and giving it preferential treatment in the network. There are strict guidelines in the LTE specifications about the handling of data with different levels of QoS. Gateways in the network have to correctly implement these techniques to ensure that committed QoS is delivered.

EFFICIENT MANAGEMENT OF NETWORK RESOURCES

Another motivation for operators is to manage their CAPEX. Operators are making huge investments in building out their networks to keep up with the growth in data consumption. Unmanaged data usage coupled with the need to deliver on SLAs would result in operators having to deploy more equipment to handle the load. A better alternative is to manage the data usage. The LTE 3GPP specifications introduced the concept of maximum bit rates (MBR). The idea is to limit the maximum throughput used by a subscriber. This is a very critical technique for operators in order to prevent abuse of network resources by a few "bad" subscribers.

REVENUE GENERATION

With an explosion in over-the-top (OTT) applications on the Internet, operators risk becoming mere "dumb" pipes carrying user data back and forth. This is not an enviable situation for operators, considering the enormous investments in infrastructure required to keep up with growth in data usage. Operators want to find ways to generate revenue from the data flowing through their pipes. They can do this by providing the same services as the OTT players, for instance voice-over LTE (VoLTE), but with significantly better and more predictable quality. Operators may want data associated with their own applications to be given preferential treatment as compared to equivalent OTT applications. Additionally, they can add value to the data already flowing through their network (e.g., by signing revenue-sharing deals with service providers in exchange for prioritizing their data, or through targeted advertising based on the content of user data, similar to what Google does with Gmail).

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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?

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CHR's Geographic Platform

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

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MDS BillAnalyzer

Deliver clear e-bills to business customers, provide the management information and customized reporting they need to effectively manage their accounts and services, simplify integration with existing infrastructure, improve ROI and reduce risk.

Consolidated e-billing and Analytics for Business Customers

Communication Service Providers (CSPs) are faced with the challenge of how to increase revenues and drive up profitability despite intense competition and slow growth in core markets. One revenue growth strategy being pursued is to expand into new business areas and increase the range of products offered. However, this expansion can increase billing complexity and have a negative impact on customer experience. As business customers represent a significant source of revenues for CSPs, it is imperative to deliver increasing levels of value to customers while reducing complexity and minimizing the cost to serve.

Businesses are demanding access to tools that enable them to view their consolidated bills, analyze usage, leverage business intelligence reports and control the cost of the services they use across their organization. CSPs need to satisfy this need to differentiate from the competition, attract and retain key customers, and efficiently deliver a superior customer experience.

MDS BillAnalyzer

MDS BillAnalyzer is a sophisticated e-billing and analytics application that allows you to present an integrated view of products and services to business customers. It provides a seamless customer experience from disparate billing systems and allows business customers to manage their consolidated bills in a convenient manner that eliminates the need for paper bills. Powered by the Lavastorm Analytics Engine, MDS BillAnalyzer provides light-touch integration capabilities to deliver rapid go to market and low-risk deployment that capitalizes on existing infrastructure.

MDS BillAnalyzer



MDS BillAnalyzer Analytics Dashboard

Advantages for CSPs

Single View of Products and Services

MDS BillAnalyzer has been designed to be billing-system agnostic. It streamlines the task of bringing together information from multiple billing systems, presenting the customer with a single, converged view of their services. Its non-intrusive ETL functionality and standard APIs simplify the capture of data from multiple sources, provide data synchronization and assurance, support data enrichment for presentation, and offer rapid system integration with low project risks and costs.

Single View of Customer

With MDS BillAnalyzer, CSP care staff and relationship managers can view bill and usage data in the same way as customers. It provides them with a holistic view of the customer and their services, enhancing first-time call resolution and helping staff to have a better understanding of the true value of the customer.



Whitepapers

**Integrating to Mediaroom: Using
Media(n) to Simplify the Experience
A White Paper**

Document Version: 1.0

Date: July, 2011

Author: Fredel Thomas, Director of Product Management



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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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THE LOW-LATENCY SERVICES MARKET:

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OCTOBER 2013



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



Sigma Systems and NDS

Orchestrating New and Unified Entertainment Experiences

Upgrading traditional offerings and deploying new hybrid/IP platforms are an increasing focus as service providers look to evolve to offer a truly personalized video entertainment experience to subscribers – anytime, anywhere and on any device. Sigma Systems and NDS have developed an integration partnership to help service providers achieve this goal by provisioning and delivering advanced video and entertainment services that attract subscribers and generate new revenue.

One Managed View of Video Access Entitlements

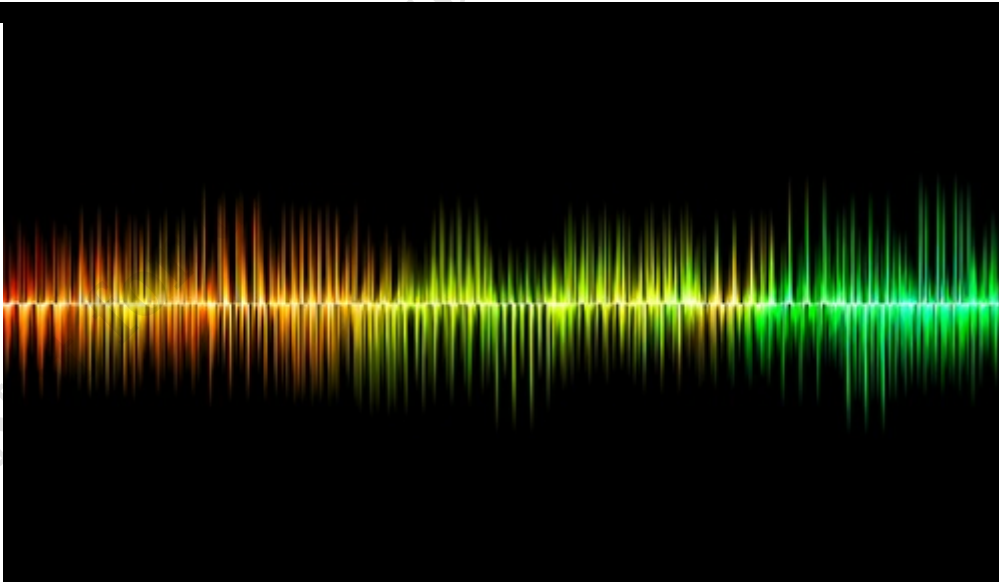
Critical to the success of leveraging the NDS solution portfolio for advanced TV/video services is the ability to seamlessly enable customers to access and view premium content. Sigma Systems provides the service orchestration for the necessary authorizations, entitlements and provisioning of NDS systems for subscribers through a single OSS solution – managing video conditional access rights, entitlements for premium content, VOD, DVR/PVR and also provisioning IP set-tops and residential gateway devices.

TV Anywhere Authorized to Enable Multiple Devices

Subscribers are increasingly demanding anytime anywhere access to their premium content on multiple devices from their TV, personal computer, and personal tablets such as the Apple® iPad®. Sigma Systems provides comprehensive subscriber entitlements management, which is key in seamlessly delivering the multi-device, multi-room, TV anywhere entertainment experience to subscribers. Service providers benefit from service fulfillment that extends beyond subscriber service plans and profiles with a completely integrated view and management of users, devices, and cloud-application entitlements.

Effectively Migrate Subscribers from Standard to Premium Entertainment Packages

Delivering new entertainment experiences to subscribers doesn't have to involve an immediate and costly video network evolution. Sigma Systems empowers service providers to leverage existing video networks in order to move beyond linear for services such as digital TV, PPV, VOD and DVR/PVR through support for next-generation IPTV IP video platforms, like NDS, on a single integrated OSS service management platform. This co-existent service fulfillment environment manages the provisioning and activation of all enhanced entertainment services, helping service providers to launch new premium video services and bundled packages that drive new revenue and reduce customer churn.



Network Analytics: Turn Big Data into Big Opportunity

*Seven Steps for Network Operations, Marketing,
Customer Care and IT*



IBM

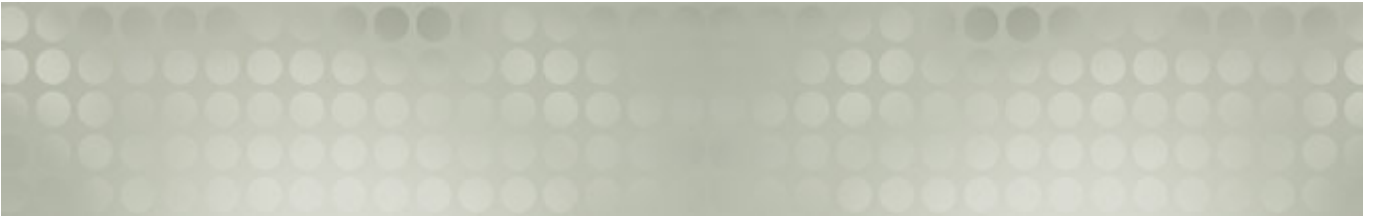
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