

NETWORK TRANSFORMATION:

GET SMART WITH YOUR DATA



neustar®

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GET READY FOR A WORLD OF CHANGE.

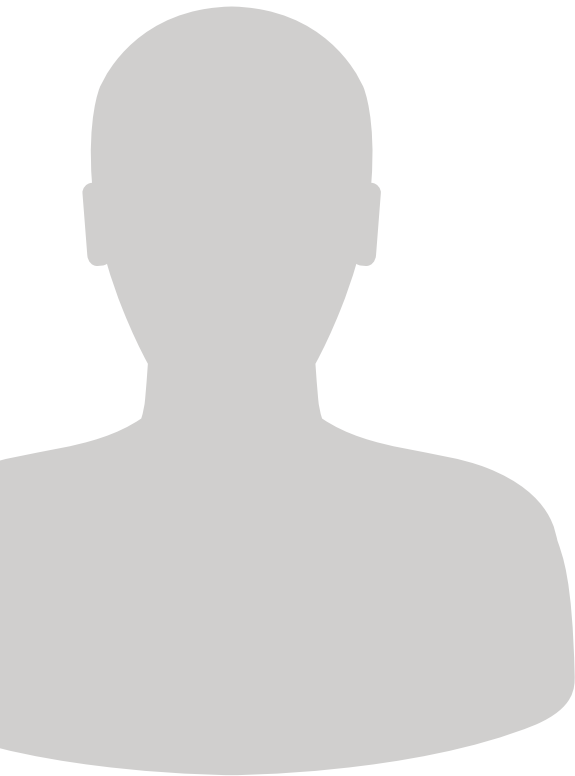
Communications service providers (CSPs) are entering an era of unprecedented change. The old business models no longer apply. Today's consumers view unlimited voice, data and texting as table stakes in a bid to win their loyalty. The real market focus is on enhancing the consumer experience and delivering new services such as next-gen high-speed mobile networks, high-quality video and mobile apps.

In a short span of time, communications have shifted from fixed to mobile, from network-based to Cloud-based. Mobile devices are quickly displacing fixed devices for all communications. According to a recent survey of U.S. consumers by Yankee Group, 98% of households have a mobile phone, while only 74% have a land-line in their home.

Consumer demand isn't the only factor driving the speed of change, however. CSPs are facing fierce competition from non-traditional service providers such as social networks and Over-The-Top (OTT) applications (e.g., WhatsApp). In order to compete effectively for subscribers, CSPs need to change the way they think: not only transform their networks but also their business.



THE FACE OF TRANSFORMATION



At the core of the network transformation is the migration from proprietary voice-based technologies (e.g., Time Division Multiplexing or TDM) to multimedia communications based on the Internet Protocol (IP) standard. Over the next seven to ten years, most CSPs will be engaged in replacing TDM technology with IP technology where they haven't already done so. This transition reflects the fact that consumers are moving from voice-centric services to more data-intensive and mobile services such as real-time video streaming. Networks that utilize IP and the related SIP (Session Initiation Protocol) standards can deliver these mobile data services at a higher quality and lower cost.

Yet network transformation involves much more than replacing TDM-based equipment with IP-based equipment. Transformation is a holistic process that typically happens in phases, depending on the unique business drivers that a CSP is facing. These drivers include:

- A new merger or acquisition that requires network homogenization;
- The introduction of a new business vertical, such as a CSP adding wireless service to its voice/video/data bundles.
- A new customer relationship management (CRM) solution;
- Migrating billing or other back-office applications;
- Upgrading network management systems (NMS) or operational support systems (OSS);
- Extending the physical network to reach new regions/markets;
- As well as smaller changes and refinements to existing systems.

THE CHALLENGE OF TRANSFORMATION

For CSPs, their network is central to their business, and so network transformation really becomes **business** transformation. This transformation impacts the physical network, business processes, operating and business support systems and, most importantly, customers. The complexity of CSP networks is not to be underestimated, the largest U.S. networks contain thousands of separate operational and business support systems. With so many touch points, the transformation process can be perilous for CSPs

Some of the challenges that CSPs may encounter along the road to transformation include:

- The native complexity of working with legacy technology systems;
- The need for cross-company support and resources in a business environment where individual groups are often isolated;
- The risk of disrupting existing customers and services during the transformation process;
- The decommissioning and disposal of older network assets;
- The potential for time and cost to escalate if the transformation is not managed properly.

A poorly executed transformation can prove disastrous. In 2013, one high-profile CSP lost nearly 200,000 subscribers in six months when their BSS transformation resulted in customers being incorrectly billed.



HOW TO GET TRANSFORMATION RIGHT

With so much at stake, CSPs should follow established best practices when undergoing their own network transformation. Historically, successful transformations are those that stay aligned with three key goals: Preserve, Plan and Hustle.

Preserve: Protect and enhance the customer experience during and after the transformation process. This will help you retain existing customers and attract new customers.

Plan: Right-size your transformation with capacity planning for new equipment. Also, don't forget to have a plan in place for removing decommissioned assets. A little planning can save you a lot of money in the long run and help you realize a return on investment (ROI) sooner, which can be critical to funding the next phase of your transformation.

Hustle: Speed your billing and service delivery systems to on-board new customers sooner and ensure that early customer experiences are positive.

Network Transformation Assurance is easier if you plan correctly and partner wisely. What does network transformation assurance look like? It's a series of processes and measures that ensure your transformation is accountable, visible and profitable. With network transformation assurance, CSPs can:

- Ensure that CIOs and CFOs have visibility into and control over price, cost, capacity and quality;
- Accurately measure the impact of new transformation objectives (e.g., reduced time to bill);
- Easily track and assess projects at various phases;
- Make better decisions based on more (and more accurate) data;
- Take actions to increase profitability and reduce costs.



DATA TRANSFORMATION DRIVES NETWORK TRANSFORMATION

Reliable, real-time data is the key to network transformation assurance because it provides the quantification behind the justification. For example, analyzing subscriber data can help CSPs understand which new services will be the most profitable, what regions to target for network build out or how much additional revenue can be generated by on-boarding new subscribers sooner.

In order to effectively transform their networks, CSPs also need to transform their data to drive better decisions and new insights. There are different key stages of data transformation that every CSP should address during their network transformation:

Data integrity to ensure that data is accepted as trustworthy across the organization.

Data quality and completeness, sometimes known as data cleansing, which reduces errors, duplicates and inconsistencies as different databases are merged across the organization.

Data analytics to identify patterns and associations as well as build predictive models.

Data improvement and enhancement, such as third-party data sources that can provide additional data that CSPs don't have, such as demographic data for new markets or behavioral data for new customers.

Data privacy to ensure that personally identifiable information (PII) is protected while still delivering analytical value through methods such as segmentation and association.

10 STRATEGIES TO UNLOCK MORE VALUE FROM YOUR DATA

Having the right data is half the battle; the other half is what you do with the data you have. Neustar has identified 10 strategies that CSPs can use to improve data management and decision-making during the transformation process, based on our own observed best practices.

Five Strategies to Improve Data Management

1) Collect data at pre-defined checkpoints.

CSPs need to capture data at critical moments, such as when a customer calls into a call center, in order to collect and act upon information. Defining those critical points of “collectible” contact is essential to mapping out an effective data strategy.

2) Bring in data from other sources.

CSPs, like most enterprises, have data spread throughout their organization: in billing systems, customer relationship management (CRM) solutions, enterprise resource planning (ERP) databases and other sources. Bringing all of that data together can help CSPs get a more accurate picture of their products and customers across their entire business.

3) Identify controls and define thresholds.

Defining what “normal” looks like (i.e., setting a control measurement) is essential to guide expectations and measurements for data analytics. Once control measurements are in place, CSPs should set alarm levels and thresholds to keep their network transformation on track and avoid risk.

4) Use a data dashboard to analyze and troubleshoot your network.

Quick access to reliable analytics and reporting is critical for decision makers. Choosing a dashboard with a simple graphical user interface (GUI) will make it easier for non-technical users to get more value from analytics. CSPs also need to aggregate and analyze data across business groups and systems to be able to effectively isolate the originating cause for issues such as high customer turnover or low ASR ratios.

5) Monitor the results.

Tracking data over time and across multiple phases during the network transformation process enables CSPs to track their success and fine-tune strategies in mid-phase for better results.



Five Strategies to Improve Decision-Making

Neustar believes that network transformation should progress through five logical stages. Each stage is framed by data analysis (or data awareness) to ensure that the decisions are based on reliable facts, relevant insights and proven predictive models.

1) Gap Analysis.

In the first stage of network transformation, CSPs target feature/technology gaps and future opportunities for improvement in their network.

2) Network Migration.

In the second stage of transformation, CSPs focus on replacing old technology (e.g., TDM switches, legacy billing systems) with newer IP-based technology to reduce costs, accelerate service delivery and simplify network management.

3) Network Optimization.

The third stage follows the main IP network transformation, and centers on improving the new network through network consolidation, operational efficiencies and streamlined processes.

4) Price Plan Migration.

CSPs should re-examine their post-transformation service bundles to reflect the new cost structures and billing systems. Updated pricing plans also help to keep CSPs more competitive in their post-transformation position while helping them better monetize their new network investments.

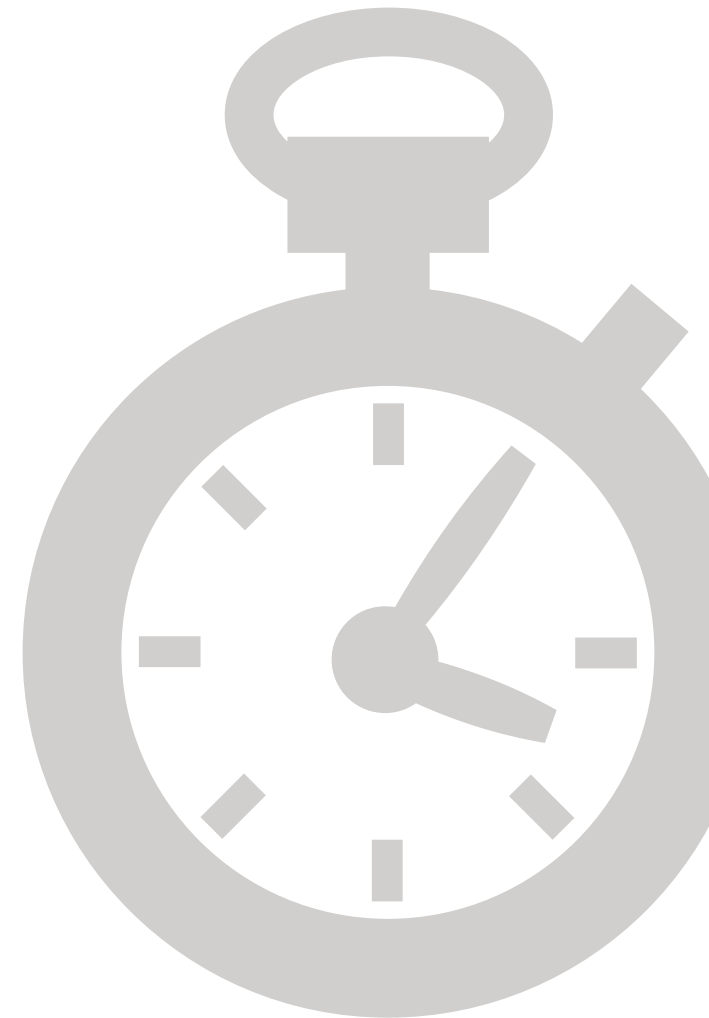
5) Marketing Analytics.

This is an ongoing stage for CSPs in which the new network data is leveraged through analytics to improve marketing efforts, increase ROI and deliver better customer service.

GAP ANALYSIS: THE “HOLE” TRUTH

Networks aren't built in a day. They evolve over time, accumulating different systems from different vendors along the way. This approach is cost-effective but rarely seamless, and most networks develop gaps between the seams as time passes. It could be a physical gap between devices that prevents interoperability or a logical gap in processes that prevents two organizations from working together efficiently.

Identifying these gaps is the first step to true network transformation. CSPs, however, often lack both the right data and the right analytic tools to identify and assess the gaps in their network. Bringing in a trusted partner to help with the gap identification process will yield better results. Working together, CSPs and their partners can uncover potential gaps and risks at the outset of the transformation process that lead to important discoveries such as opportunities for recovering lost or lagging revenue; methods for improving productivity; best practices that can reduce risk and speed deployment time; a better understanding of internal processes (and how to improve them); and new ways to streamline billing, customer service, marketing and other operations.



NETWORK MIGRATION: THE ART OF BEING IP



The migration to an all-IP network involves a lot of moving pieces: decommissioned assets, consolidated hardware and new equipment. Collecting and analyzing data ensures that CSPs (and their customers) encounter a smooth migration. The reality is that many CSPs do not have an accurate inventory of their own assets. This can be due to the progressive nature in which equipment is added to the network, poorly documented mergers/acquisitions or the simple fact that the data resides in multiple places rather than within a single database.

Collecting, cleaning and analyzing data across the entire network can lead to a better migration by:

- Accurately tracking assets and establishing a “ground zero” inventory before the migration begins;
- Correctly and rapidly identifying which legacy assets need to be de-commissioned after the migration, which reduces unnecessary opex;
- Ensuring that call routes and subscriber services are not disrupted during or after the migration;
- Predicting and planning for capacity requirements for the new network as subscribers and services are added.

NETWORK OPTIMIZATION: MAKING IT BETTER

The physical network migration to IP technology is a major milestone but it is not the end of the road for network transformation. There are myriad opportunities to optimize the network once the IP transformation is complete. Here again, data plays an important role in identifying, prioritizing and quantifying optimization efforts. Some of the ways in which data analytics can help CSPs optimize their network include:

- Identification of underutilized assets/equipment in the network;
- Methods for improving call routing, such as least cost routes;
- Process improvements that can lead to faster customer billing;
- Risk reduction through improvements to fraud detection and debt collection.



PRICE PLAN MIGRATION: PRICING IP RIGHT

One of the primary drivers for IP network transformation is the ability to better manage and deliver multimedia communications that include voice, data, video and texting. Changes in the network infrastructure affect the cost and the delivery of these services, resulting in a need for CSPs to re-examine their subscriber pricing plans.

When you consider that a medium-sized CSP may have as many as 10,000 or more individual pricing plans in its network, price plan migrations can be a complex process. Compounding this complexity is the fact that price plans typically involve multiple organizations within the service provider and multiple aspects of the network platform including operational and business support systems. Data collection and analytics can play a crucial role in helping CSPs manage this migration process and determine new price plans that reflect the new network.

While multiple price plans help CSPs deliver better customer service, generate higher revenues and maintain a competitive advantage, they can also be costly to maintain. A single price plan can cost between \$1,000 and \$20,000 to maintain annually when operational and organizational costs are factored. Using data analytics, CSPs can identify unprofitable price plans and save money. Analytical models can also help CSPs understand the financial cost of removing a particular plan and provide detailed migration paths for customers who may currently be on a plan that is targeted for retirement.

MARKETING ANALYTICS: USING DATA TO DRIVE SALES

So you've made the move to IP, optimized your network to make it more efficient and priced it effectively to monetize it. Now what do you do? Begin to market it more intelligently.

Using data analytics, CSPs can improve their marketing campaigns, increase customer loyalty and acquire new customers by discovering the patterns and predictive models in their data. Although most CSPs are already using data analytics on some level to aid in their marketing efforts, this needs to be done in a holistic fashion using data from across their organization as well as expanded to bring in third-party data. Only then will CSPs be able to capitalize on the true value of their data and maximize their marketing ROI by:

- Segmenting customers more effectively to drive better understand of customer behaviors (while also preserving customer privacy);
- Achieving higher returns on marketing campaigns;
- Allocating marketing funds to the highest-performing campaigns to achieve maximum ROI;
- Creating new omnichannel marketing campaigns that reach across print, Internet, phone and social media to reduce marketing costs;
- Discovering new revenue opportunities through added services or additional regional exposure;
- Identifying the most profitable customers and creating strategies to find and retain more customers like them.



WHY NEUSTAR FOR TRANSFORMATION ASSURANCE?

Data holds the key to an intelligent and rewarding network transformation. Neustar helps CSPs get more data from their network and more value from their data. We offer an end-to-end network transformation solution that provides the assurance that CSPs need to arrive in a better place at the end of their transformation process, whether the driving force is a merger between two companies or a new venture into an emerging market.

Neustar has the expertise to guide you through the transformation process:

- Deep experience with business intelligence in the telecommunications industry;
- A complete customer intelligence platform in ElementOne;
- Solutions for revenue management reporting, revenue assurance and risk management;
- Unmatched skill in networking technologies and migrations;
- Vast knowledge in data mediation and integration;
- A strong, proven professional services team to bring it all together.

Neustar is committed to excellence in your transformation:

- ✓ We make answers visible;
- ✓ We build scalable, flexible solutions;
- ✓ We embrace innovation including 4G/LTE, virtualization and Cloud;
- ✓ We maintain customer trust and lead the way in privacy issues;
- ✓ We take responsibility for your success.



WHY NEUSTAR FOR NETWORK MIGRATION?

A network is more than a collection of switches and servers. It also consists of people, processes, pricing plans and business support systems. Neustar can help you see the big picture of network transformation, beyond the bits and bytes to the subscribers and the services that make up the most important part of your network. But we also bring years of technical expertise to that vision in order to find solutions to your most technical problems, from signaling system migrations to least cost routing.

When you consider a technical partner for your network transformation, consider that Neustar has successfully managed some of the world's largest and most time-sensitive CSP network migrations. We understand telecommunications networks as few companies do, from signaling mediation to data integration, from NPAC to IPsec, and from routing to risk management. And we know how to connect calls and collect on them as well with the industry's most comprehensive Order Management System (OMS) solution.



WHY NEUSTAR FOR ANALYTICS?

Neustar has a unique vantage point to network transformation that no other company has. We know your technology, we know your business and we know your data. In fact, Neustar has data on 160 million U.S. households—more than anyone else. And we offer a proven customer intelligence platform, ElementOne, that helps CSPs get more answers from all of their data including:

- A single, central view of each customer or prospect across multiple business lines and marketing channels;
- CSP-specific customer segmentations that can recommend and prioritize individual go-to-market strategies;
- Insights into 4G opportunities based on supply/demand calculations;
- Lower cost and higher return re-marketing campaign strategies;
- Measurable, significant improvements in key areas such as customer acquisition, revenue growth, customer lifetime value, risk/cost reduction and more.



CONTACT US

To find out more about how Neustar can help your business make the transformation to all-IP, please contact Neustar at **1.877.831.3984** or email **SolutionsTeam@neustar.biz**

ABOUT NEUSTAR

Neustar, Inc., (NYSE: NSR) is the first real-time provider of cloud-based information services and data analytics, enabling marketing and IT security professionals to promote and protect their businesses. With a commitment to privacy and neutrality, Neustar operates complex data registries and uses its expertise to deliver actionable, data-driven insights that help clients make high-value business decisions in real time, one customer interaction at a time. More information is available at **www.neustar.biz**.