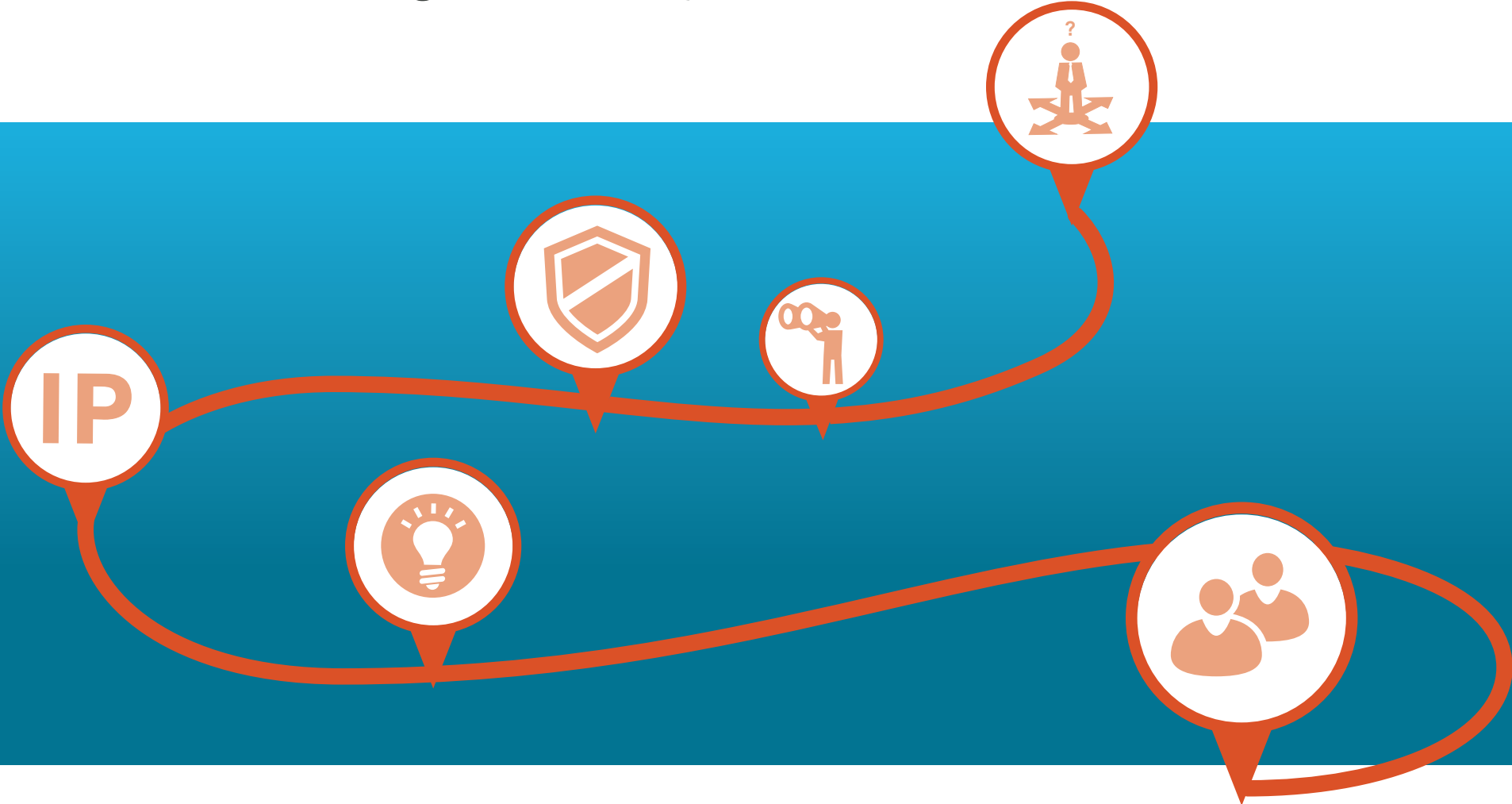


NETWORK TRANSFORMATION:

A Guide to Planning Your Journey to All-IP



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For communications service providers (CSPs), moving to an all-IP network is becoming a competitive must. For many, it's happening right now, with completion scheduled within the next five to 10 years. Why the transformation? CSPs need to deliver the types of services customers demand, expand market size and attract more customers.

To meet these business objectives, you have to execute well and minimize negative customer impacts. If the transformation goes smoothly, your business will thrive.

But before you get started, it's important to carefully consider the overarching impacts to your business:

- Who is impacted and where?
- What are the necessary phases?
- How and when do I get there?

Historically, CSPs have viewed network transformation through the narrow lens of technology, as though it were a simple matter of upgrading equipment. But in reality, the solution is much more complex.

OVERVIEW

For CSPs, the network is their business. Network transformation is really *business transformation*.

To ensure a smooth transition to an all-IP network, it's essential for each area of the business (IT, marketing and operations) to work together and consistently communicate throughout the journey.

Consider everything that makes up your network. It's more than a collection of hardware; it's comprised of people, processes, subscriber services, billing applications, business intelligence and much more. All of these elements make up the greater network and must be considered as you plan and execute. If all you're doing is replacing Time-Division Multiplexing (TDM) switches with IP switches, then you're not really transforming your network, you're simply upgrading its hardware.

Transformation can occur through merger and acquisition as CSPs buy versus build their next-generation capabilities. Or a CSP may choose a network modernization option by building a new network and over time retire the outdated legacy network. Whatever the method, CSPs face similar challenges in preserving and enhancing the customer experience as they transform and optimize their networks and grow their business. Otherwise, they will quickly lose market share in an extremely competitive landscape.

One thing is clear: a holistic view of network transformation is the best approach. It will help your organization emerge stronger and more competitive.

This guide can help you connect the dots as you plan your transformation. Get a deeper understanding of the major impact points, considerations and dependencies while building a strategy to maximize results and ROI.



TRANSFORMATION ISN'T SIMPLE.

Network *transformation*. It even sounds complex. And it is, because transformation impacts everything: subscribers, services, billing, legacy equipment and even your own employees.

Then there's the cost. Network transformation is an expensive commitment. Though the transformation will help you drive revenues or expand into new markets, you still must factor in return on investment.

As you plan your migration, ask (and have answers for) these questions:

- What's our business vision?
- How long will the transformation take – and at what cost?
- What are our customer personas – now and in the future?
- What are our options and plan for the old legacy network?



BENEFITS OF A PHASED TRANSFORMATION

Network transformation isn't a 50-yard dash. It's a longer run requiring strong start-to-finish performance. The secret to winning the race: set the right milestones and never lose sight of your customers.

For most CSPs, a phased transformation is a common approach. This enables you to align with specific business goals, such as:

- Generating revenue by retaining and acquiring customers
- Expanding into new markets and territories
- Delivering new services faster and with better quality
- Reducing the operating costs of maintaining older technologies



Along the way, you must understand how each phase will impact the customer experience:

- How quickly can we market to and acquire new customers?
- Can we seamlessly move existing customers between networks?
- Will we be able to smoothly onboard new customers?
- Will existing customers perceive the change as a value add?

Finally, you will likely need additional resources to plan, design and execute on your transformation. With operations staff fully utilized on maintaining the day-to-day operations and engineering staff focused on building out the new network, you should consider hiring experienced partners. Partners who have navigated the various stages of transformation help avoid disrupting existing IT projects and operations, while providing the required skill sets that often reside outside of the team's current expertise. These short-term resources play an integral role for your success.

FOUR ESSENTIAL PLANNING CONSIDERATIONS

Every successful journey requires a good roadmap, and network transformation is no different. Before a single switch is replaced or customer is migrated, service providers need to thoughtfully plan each stage, considering all the impacts.

Keep in mind four key objectives:

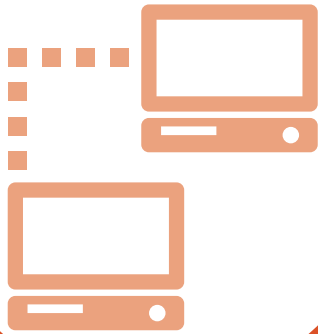
1) Protect Your Customers.

The transformation process should be positive for customers. After all, service providers aren't the only ones frightened by change. New services, faster speeds and better quality should not be overshadowed by interoperability, service issues and billing concerns that can be quite costly (and embarrassing) to your business. After all, subscribers have options and they become easy targets for competitors if your transformation hits a road bump.

2) Minimize Disruption to Your Business.

Where possible, leverage in-place systems and existing processes to mitigate the risk of disruption. This keeps costs down and also lowers the learning curve for your operations support teams, including those on the front lines who interact with customers, make recommendations, sell and activate service for new customers. Additionally, a less chaotic roll-out drives faster market expansion.





3) Seamlessly Migrate Customers.

It's critical that you ensure continuity for customers with uninterrupted voice, text and data services during the migration process. Equipment and devices should continue to work and billing should be well thought out so customers are not confused, surprised or disgruntled because they were not billed, over-billed or under-billed. This might seem obvious, but there have been instances where service providers underestimated the interoperability, message routing and billing implications of the transformation process. An overall positive customer experience helps reduce churn and can accelerate your marketing, acquisition and expansion efforts.

4) Count Your Assets.

It's likely that over time, you've lost track of some network assets. Not so long ago, tracking was done on paper, in spreadsheets or even by employees who are no longer with your organization. Acquisitions, employee departures and simple growth all attribute to an inaccurate or incomplete inventory of active circuits, equipment, customers and other important network information. Save some heartache and costs by conducting an accurate inventory audit **before** the transformation begins. In addition to inadvertently disrupting customers' service, you will want to be sure you're not billed by interconnect partners for circuit, equipment or leases that are no longer in use.



LAUNCH YOUR TRANSFORMATION SMOOTHLY...

“Day 1,” or launch day, is the culmination of months of planning and execution and is an important milestone. Service providers should pay careful attention that customer migrations are smoothly executed and that all services and processes perform as planned. However, the transformation process is far from over.

...AND OPTIMIZE

Your network is likely to always be in some state of evolution. As customers are migrated and services rolled out, opportunity abounds. Throughout the transition, you will often need to fine-tune and fix issues as they arise.



Here are three key areas where you can optimize your transformation efforts to ensure the new network delivers on the promise of all-IP:

Subscriber Services

Make the best use of data to understand your customers. Target them with the most timely and relevant marketing offers. Exceed their expectations and increase brand loyalty.

Network Traffic

Optimize voice and data routing across all of your available networks to increase performance and efficiencies while decreasing costs. Your network is one of your biggest assets and improving its efficiency can yield revenue profitability.

New Technology = New Fraud

You've spent years locking down legacy infrastructure and networks to detect and prevent fraudulent behavior. Fraud costs the industry hundreds of millions of dollars each year, so you will want to revisit network processes and policies to reduce bad debt, identify at-risk customers and mitigate the risk of lost revenue.

IDENTIFY OPPORTUNITIES

Successful organizations are always looking at what comes next. Roadmaps are laid out well in advance to showcase and highlight the trends for the next “big thing.” Paying close attention to what currently works can help shape the future and ensure successful launches of next-gen services.

In particular, your business should pay close attention to key opportunities in these areas:

1) Customer Marketing

You already have a vast amount of subscriber data. Turning that data into actionable insights can yield new opportunities to increase revenue and improve customer service. Third-party data providers can enhance these efforts with valuable demographic and psychographic data that CSPs themselves often lack.

2) Future Services

Change is the one constant in communications, and that’s especially true for network traffic. As subscribers buy more mobile devices and consume more video, you’ll need to anticipate and plan for changes in your network’s capacity and performance. Growing too fast or too slow, however, can cost your business money and customers. It’s important to have right-size capacity planning capabilities to ensure that growth is properly aligned with your business.

3) Underutilized Network Assets

In the wake of network transformation, your legacy network will serve fewer and fewer subscribers, resulting in an underutilized network. CSPs should prepare plans to sunset legacy networks and services. Network decommissioning allows savings that include reduced maintenance costs in both resources and dollars. For example, wireless providers can reallocate spectrum to new Long Term Evolution (LTE) technologies and reduce or eliminate access service charges paid to competitive CSPs who have been supplying access for next-gen services.



MARKETING: YOUR CUSTOMERS ARE TRANSFORMING TOO

Network transformation also means changing the way you market your business.

If your network transformation is fueled by a merger or acquisition, you're getting a massive amount of new customers and data. This data is oftentimes disjointed and takes time to integrate into a comprehensive database. Take time to learn about your new customers, digest and clean the data, and begin to understand how to best communicate with them. What services do they have? What are your upsell opportunities? What media do they consume and how can you reach them most efficiently?

It's important to know the same information about your current customers. Before you start trying to upgrade them, or even just retain them, make sure you understand how their needs are evolving. Study their demographics, purchase behaviors and painpoints to ensure that you're extending the right offer to the right customers at the right time.



You have a natural information advantage because of the type and amount of data your network collects and creates. This data can be applied to better understand customer buying behaviors, improve marketing campaigns and customize service offers in real time. Your network transformation efforts should be aligned with these business intelligence efforts, particularly as they relate to the collection and analysis of customer intelligence data and third-party data:

- Customer intelligence data includes customer information collected through your own network interactions, such as location, device capabilities, usage and account information.
- Third-party data refers to external data from other, trusted sources, which may include demographic and psychographic information at the regional or even household level.

In both cases, CSPs must be mindful of security and privacy. Subscribers are increasingly sensitive about the privacy of their personal information, and many CSPs have wisely opted for anonymized data sets to ensure that personally identifiable information (PII) remains private. Anonymization removes the personal identity from the data without removing the value. This is done by segmenting customers based on other important characteristics such as buying behavior and demographic associations.



NEUSTAR CASE STUDY

NETWORK DECOMMISSIONING TO SUNSET LEGACY NETWORKS

During its transformation to an all-IP network, a CSP was retiring a legacy network and disconnecting circuits. To accelerate the process and save money, the company relied on Neustar's automation and workflow solutions, program management and expertise.

BUSINESS CHALLENGE

Manual order processing resulted in a 40% error rate, which slowed the process. With carrying costs estimated at \$80,000 per day, the CSP needed to speed up processing and reduce costs.

THE SOLUTION

Neustar's subject matter experts proposed an automated process and program management to reduce fall-out. Pre-order validation and order enrichment reduced the number of errors, created greater order flow-through and increased order completion success.

THE RESULTS

Neustar disconnected about 11k circuits covering multiple markets on an expedited schedule.

- 71% of requests were submitted within one business day of CSP "green-light"
- 74% of disconnect orders were confirmed within one business day of CSP "green-light"
- Order fall-out was reduced to less than 5%

Faster processing by Neustar's team saved the CSP \$2.3M, equal to a month of access service charges.



TRANSFORMATION STARTS WITH NEUSTAR

For over 17 years, Neustar has been a trusted advisor and partner to CSPs. However, you may not know that Neustar has been working behind the scenes helping the leading CSPs successfully transform their networks. Neustar understands that each CSP's network and environment is unique and that no two projects are implemented and progress exactly the same way. That's why CSPs trust Neustar to help navigate their journey.

Here's what we've done:

- **Customer migrations:** Over 100 projects, 6M+ end user migrations, zero interruptions in service
- **Routing corrections for SMS and MMS messaging:** In less than 24 hours, Neustar's teams corrected routing and delivery issues for a CSP who had "broken" SMS and MMS during their merger activities
- **Network decommissioning:** Saved a CSP \$2.3M (a month of access charges) with accurate, fast processing of circuit disconnect orders during network sun-setting engagement
- **Risk mitigation:** Business analytics allowed a MSO to reduce its acquisition risk by averting \$11M in bad debt in one region, in one year
- **Marketing efforts:** Media optimization that allowed a CSP to reallocate on average 26% of media spend to higher performing campaigns

You can trust Neustar.

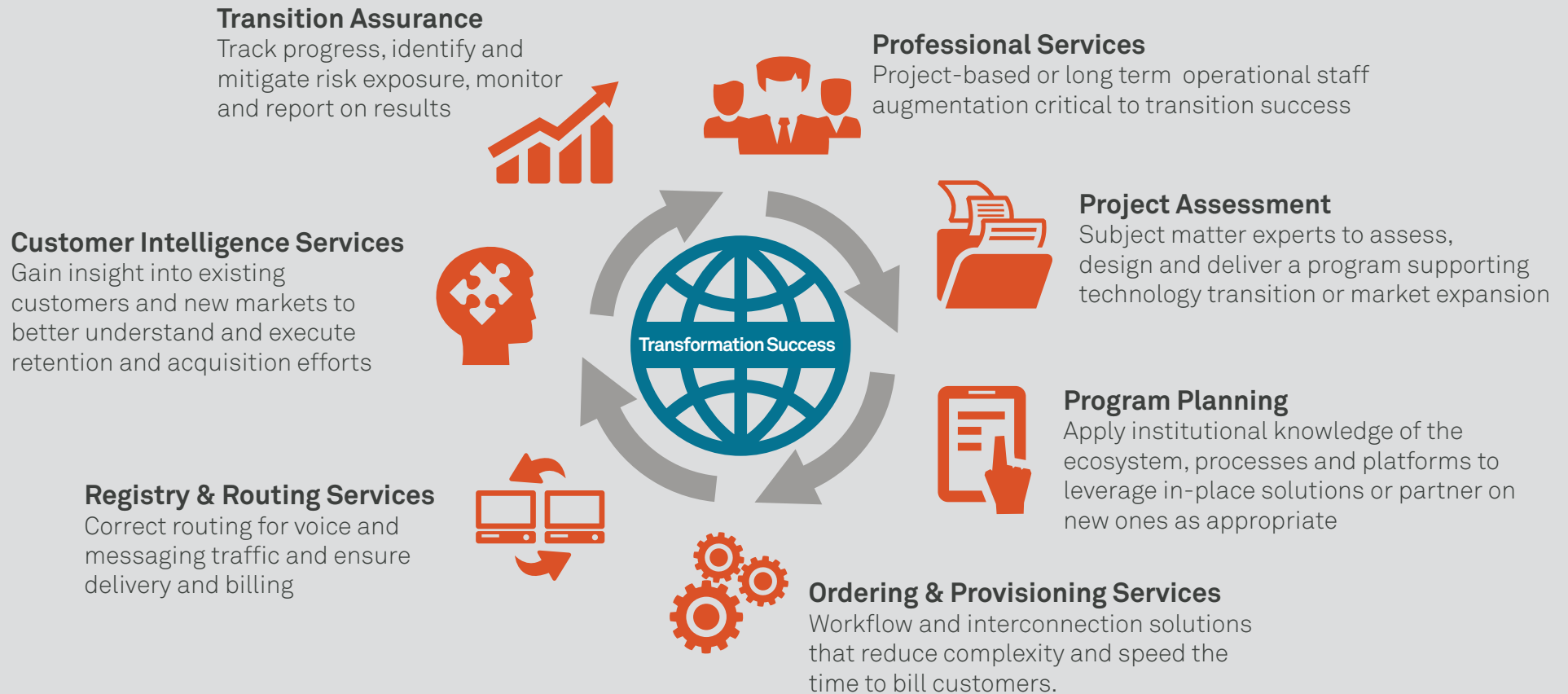
Neustar has helped service providers migrate millions of subscribers to the all-IP future of communications. The number we're most proud of, however, is ZERO. That's the number of interruptions our customers have experienced after their network transformations.

Neustar's team provides unmatched industry knowledge and hands-on, real-world experience helping CSPs realize the value of all-IP fast and reliably. Our network transformation solutions address every aspect of IP network transformation:

- **Planning** – Neustar's deep knowledge of the communications industry, processes and platforms translates into higher success rates for your network transformation.
- **Provisioning** – Neustar's workflow and order provisioning solutions streamline operational processes for greater efficiencies.
- **Registry & Routing Services** – Neustar ensures that voice and messaging traffic continues to flow smoothly before, during and after migration, with no service disruptions.
- **Customer Intelligence** – Neustar's analytics solutions deliver advanced business intelligence that helps CSPs attract, acquire and retain more customers and generate higher revenue.
- **Professional Services** – Neustar's teams average 20 years of proven telecommunications experience, bringing specialized expertise to your network transformation effort.



NEUSTAR PROVIDES END-TO-END EXPERTISE



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.