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Telephone Voice Services Market in Upheaval

Flexible provisioning key to market share

neustar[™]

Executive Summary

As an increasing number of Competitive Local Exchange Carriers (CLECs) and Emerging Service Providers (ESPs)—such as Vonage, Skype, Google, Magic Jack and others—offer voice services to customers, the business model for the voice services industry is being transformed. To keep pace, service providers must develop innovative ways to provision customers quickly and efficiently.

Although fixed-line telephone lines have been falling by an average estimate of 6-8% per year, it's not due to fewer voice customers. Consumers are simply changing where they get their voice service – more and more frequently from cable companies, resellers, VoIP providers, and other non-traditional service providers. At the same time, these providers are redefining their roles, forming multiple partnerships, reselling services, and broadening their offerings. As a result, telecommunications requirements for wireless, wireline, voice/data, cable, and IP service delivery have increasingly become more expensive, resource-intensive, and complex.

The current process for fulfilling customer orders is manually intensive and typically varies by trading partner. As traditional and non-traditional providers alike look to interoperate legacy and cutting edge service delivery paradigms, flexibility in automating provisioning and activation becomes more critical than ever.

Neustar is uniquely positioned to provide flexible, nuanced, configurable provisioning capabilities to help all service providers. A component of Neustar's Order Management Services (OMS) Clearinghouse, Enhanced Service Request (ESR) allows ESPs to port numbers for their customers in a well-defined process, with end-to-end flow through provisioning from the CLECs. Comprehensive validations and error detection streamlines the flow of transactions, speeding order provisioning and end user billing.

The solution enables customers to achieve their core business goals—to manage subscriber expectations, process customer orders quickly, and generate revenue through automation, order uniformity, and business rule validation.

Neustar's Enhanced Service Request automated solution provides a one stop shop for telephone number portability, enabling service providers to:

Expand their product and service offerings more quickly

- Gain new customers
- Tap new revenue sources
- Generate revenue faster
- Maintain customer satisfaction

With less fallout, no wait period, faster service and no hiccups in the process, Neustar's compelling advantage is its ability to adapt to carrier's changing paradigms.

Rise of Non-traditional Voice Services

While industry statistics bear that fixed-line telephone lines are in decline, the voice customer market remains strong with consumers simply changing where they get their voice service—more and more frequently from cable companies, resellers, VoIP providers, wireless and other non-traditional services providers, such as Vonage, Google, Skype, and Magic Jack. Each of these requires unique provisioning services to rapidly turn up customers.

Cable Companies

Cable companies began making forays into the voice services market over a decade ago. Today, cable companies are aggressively trying to tempt business customers of all sizes away from the entrenched phone companies. According to Heavy Research, middle-market and enterprise decision-makers increasingly view Multiple Service Operators (MSOs) as serious alternatives to telcos for business-class data, voice, and video services.¹

Cable companies have also entered the VoIP market where their extensive financial resources and established customer relationships provided them with a clear marketing advantage. By 2010, cable companies began providing telephone service to more than 20 million subscribers.²

VoIP Providers

The VoIP market is becoming crowded and fiercely competitive, and is not restricted to the residential market. By early 2010, close to 40% of US businesses were using VoIP technology.³ As shown in the chart below, VoIP revenues are expected to nearly double in the next three years, from \$5 billion in 2010 to \$9.5 billion in 2013. Business for companies like Skype and Vonage is booming. According to Gartner, Inc., by 2013, mVoIP providers will focus less on providing cheap international calls and more on using voice telephony in non-traditional ways.⁴

VoIP Access Line Subscriber and Revenue Growth 2010-2013

	VoIP Access lines (millions)	Gross Revenue (\$billion)
2010	31	5
2011	39	6
2012	49	7.5
2013	60	9.5

Source: BuddeComm USA Internet Market Analysis, Statistics & Forecasts)

Skype

While the growth of international telephone traffic has slowed overall, traffic for Skype has skyrocketed. Today, Skype boasts 560 million users, and is considered the largest provider of cross-border communications in the world. In the first half of 2010, according to the Skype website, users made 88.4 billion minutes of Skype-to-Skype calls, close to 40% of which were video calls.⁵ During the same period, users made 6.4 billion minutes of calls to landlines and mobiles.

Skype recently introduced a plan to enable Avaya system users to talk to Skype users, and vice versa. In addition, in February, Verizon Wireless announced plans to partner with Skype – making it the first large US mobile operator to allow customers to make free or low-cost calls by utilizing Skype on its network. And, Skype and Facebook have joined forces.

¹ Alan Breznick. 2008. Cable vs. Telco: The Battle over Business Voice Services. Heavy Research. Vol 6, No II.

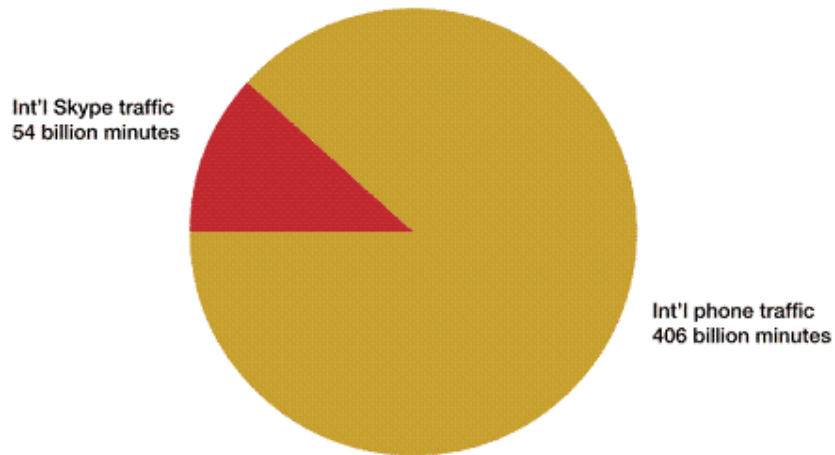
² Paul Budde Communications. 2010. USA VoIP Market – Analysis, Statistics and Forecasts. <http://www.voipmonitor.net>

³ Baker, L. (2010). Mobile Penetration Peaks at 100% in US. *Global Telecoms Business*. London. (Paul Budde Communications. www.budde.com.au)

⁴ Charlotte Patrick, Akshay K. Sharma. (September 8, 2010). Competitive Landscape: Mobile VoIP for Consumers. Gartner, Inc. Retrieved from gartner.com.

⁵ <http://about.skype.com/>

Skype's Share of International Long-Distance Traffic, 2009



Source: TeleGeography

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Vonage and its resellers

Serving 2.4 million subscribers worldwide,⁶ Vonage enables individuals and social networks to connect through any broadband device worldwide.⁷ Vonage expands its reach by reselling services through PAETEC, XO and Telcove. These resellers request telephone numbers that they can then distribute, while Vonage takes care of the number portability.

Google

Yet another option for customers is Google Voice. Introduced to the public in June 2010, Google's free service provides users with a new phone number that, when dialed, will ring multiple other phone numbers—a mobile number, an office number, and a home number, for example—to complete the call. It also provides settings that allow call routing to be limited at certain times of the day. Google is currently working on a way to port existing phone numbers to Google Voice.

Magic Jack

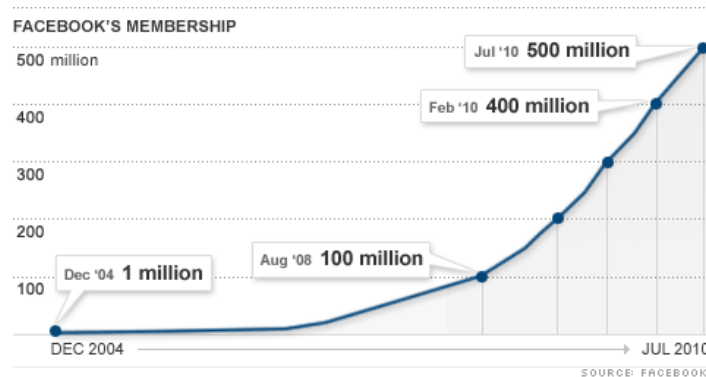
Magic Jack is another voice service alternative at a low monthly rate. Customers plug a small, matchbox-size device into the USB port of a computer, and make free local and long distance calls phone calls (in the US and Canada). International calls are also available at low flat rates. The device uses the computer's speakers and a microphone, or a regular hand-held/cordless telephone. According to Magic Jack, over 10,000 customers are purchasing a Magic Jack every day.

⁶ Vonage website. <http://ir.vonage.com/factsheet.cfm>

⁷ Vonage website. www.vonage.com

Facebook

The world's largest social networking site, Facebook, announced its 500 millionth user in July 2010.⁸ According to Facebook, 50% of their active users log on every day, and spend over 700 billion minutes/month on the site.⁹ Facebook and Skype have meshed their communications services, allowing Facebook users to sign into Skype through their Facebook Connect accounts and text message, voice chat, and video chat with friends.



Wireless providers

While traditional voice landline revenues continue to fall, wireless data networks are expanding. The obvious growth of wireless suggests the continued transition of voice customers from landline to wireless lifestyles. However, it's the way that wireless carriers will be delivering voice services that will impact the provisioning of service. Wireless carriers are tripping over themselves to transition to 4G LTE (Long Term Evolution) service. LTE is an IP network, 4G technology whose goal is to provide high-speed cell phone transmissions that can support high-quality streaming video and other critical services, faster – at lower costs.

According to Fred Wright, an SVP that handles 4G networks for Motorola, LTE will one day be the standard chosen by 80 percent of the carriers in the world. Verizon has rolled out its 4G LTE coverage for 110 million Americans, with plans to extend the service and offer additional 4G handsets.

The introduction of WiMax, another wireless technology that operates according to the same basic principles as WiFi (sending data from one computer to another via [radio](#) signals), could replace cable and DSL services, providing universal Internet access.

While WiFi's range is about 100 feet, WiMax can blanket a radius of **30 miles utilizing** wireless access. Since WiMax is designed to accommodate VoIP, users can make long distance and international calls through a broadband Internet connection. Use of WiMax is expected to increase VoIP dramatically and foster the growth of quadruple play services, including broadband, voice, video and mobile.

⁸ Morrison, S. (2010). Facebook, Skype in Talks to Mesh Services. *Wall Street Journal Online*.

⁹ Facebook website. <http://www.facebook.com/press/info.php?statistics>

Interoperability is necessary

As these traditional and non-traditional providers alike look to merge legacy and cutting edge service delivery paradigms and introduce new technologies, interoperability between automated provisioning and activation becomes more critical than ever.

In the current environment it takes over 30 steps to provision, port and publish a number. The rules are complex—with the Local Service Ordering Guide (LSOG) over 3,000 pages long. Provisioning requires integrating a complex supply chain that includes all trading partners, as well as complicated internal platforms that perform ordering, inventory and provisioning. In addition, the proliferation of over-the-top application service providers makes it even more difficult to manage the process.

As a result, the provisioning process today is extremely resource-intensive, a process in which staff use manual interfaces and re-key the same information into multiple applications—sometimes up to nine different systems.

Given this environment, service providers require tools that enable them to accomplish legacy provisioning and generate fulfillment services such as E911, LIDB/CNAM, Directory Listing and CARE. At the same time, they need extensibility to add new provisioning interfaces and to meet new paradigms, such as ESPP, ENUM and ViPR for Enterprise, etc.

In addition, they need an automated, flexible interface workflow that allows for rapid and reliable modifications to meet changing provider and partner needs. Such a workflow will help reduce fallout, increase speed and efficiencies and enable accurate provisioning.

Finally, service providers need configurable interface rules and policy engines as insulation against business model modifications.

Flexible solutions do exist

Neustar's Enhanced Service Request (ESR) offers a single solution for automation, integration, and validation for inter-carrier service management. ESR enables carriers to submit porting transactions from their own upstream system that has been coded to the specifications of the ESR Application Programming Interface (API).

ESR is a component of the OMS Clearinghouse, a model that provides a universal solution for all ordering and fulfillment needs. OMS Clearinghouse focuses on the core requirements needed to integrate with multiple trading partners for seamless inter-carrier service management. Trading partners can submit and receive responses to orders without concern for the underlying connection or format of the interface itself. The clearinghouse is typically used for the creation and submission of the following:

OMS Clearinghouse

Service	Features
Local Service Request (LSR)	Streamlines process – provisioning personnel can submit and manage all LSR orders to all ILECs through a single automated interface.
Access Service Request (ASR)	Expedites customer provisioning or network capacity expansion through an “e-bonding” process. Eliminates need for one-to-one interfaces across trading partners.
Service Order Administration (SOA)	Interfaces with Number Portability Administration Center (NPAC) to allow service providers to complete number porting requests. End to end porting process eliminates swivel chair scenarios.
Enhanced 911 (E911)	Interfaces with directory data sources to send automated line information directly to local Public Safety Answering Point (PSAP).
Enhanced Service Request (ESR)	Manages subscriber expectations, processes orders, generates revenue through automation, order uniformity and business rule validation.
Inter-carrier Communication Process (ICP)	An integral part of the Wireless Number Portability (WNP) Clearinghouse model. Automates all wireless to wireless and intermodal wireline to wireless and wireless to wireline port requests between service providers and LSR transaction processing.
Line Information Database/Calling Name (LIDB/CNAM)	Provides gateways to VeriSign’s LIDB and CNAM databases, and supports insert, change or delete number record or calling name requests.
Port PS	Helps ensure service providers port numbers quickly and accurately. Can predetermine if a number can be ported and identify losing service provider’s ID before initiating process, saving time.

ESR allows ESPs to port numbers for their customers in a well-defined process, with end-to-end flow through provisioning to underlying CLECs. Comprehensive validations and error detection streamline the flow of transactions, speeding order provisioning and end user billing.

The solution enables customers to achieve their core business goals—managing subscriber expectations, processing customer orders, and generating revenue through automation, order uniformity, and business rule validation.

Benefits of ESR

Feature	Benefit
Complete life-cycle automated workflow manager	Enforces proper business process management for Service Requests and Number Portability
Customizable workflow	Adapts to client business processes
Single front end interface for all services	Minimal operational and capital expenses to maintain
Standard XML Messages (bi-directional)	Operates with any gateway service that accepts or serves up standard messages as defined by the standards bodies such as the OBF and NENA
Interconnection and certification with all national trading partners	Saves time in the learning curve. This is a complex, time consuming process that Neustar repeats for all its customers as opposed to a customer learning the process and procedures on a one-off basis.
Derives the necessary information for all service types and transaction from a simple set of data.	Allows the ESP to concentrate on what they do best—marketing their service—and let Neustar worry about meeting the provisioning needs.
Comprehensive order status, reporting and performance metrics	<p>Manages the full life cycle, including:</p> <ul style="list-style-type: none"> • Assess the change • Activate the change • Advise trading partners of the change • Analyze number environment <p>Includes data extracts and best practice reports</p>
Supports standard LSOG/ASOG/WICIS and carrier-specific business rules	Streamlines and simplifies provisioning in an increasingly diverse environment imposed by the regulatory environment
Offloading of key ordering challenges and related system/software development and maintenance activity	Lowers costs
Proactive change management and process	Keeps interfaces current and insulates users from industry or LEC modifications
Automatically derives the data required to initiate fulfillment steps in a sequential manner	Increased customer satisfaction and safety
No hidden costs	Hosted solution model requires no unique hardware or software investments, no release fees and no additional user charges

Conclusion

Today, providers of telecommunications services are redefining their roles, forming multiple partnerships, reselling services and broadening their offerings. As a result, telecommunications requirements for wireless, wireline, voice/data, cable, and IP service delivery have increasingly become more expensive, resource-intensive, and complex.

The current process for fulfilling customer orders is manually intensive and typically varies by trading partner. As traditional and non-traditional providers alike look to integrate legacy and cutting edge service delivery paradigms, flexibility in automating provisioning and activation becomes more critical than ever.

One thing is certain – the needs created by technological and partnering changes over the horizon promise to be a lot more complex than what carriers are dealing with today—and systems that can meet these challenges will be critical.

Neustar is uniquely positioned to provide flexible, nuanced, configurable provisioning capabilities to help all service providers through its ESR offering. Neustar's robust, out-of-the box functionality meets a vast percentage of carrier requirements to date, and will be able to match the business to business needs of carriers as they form new partnerships .

With the ease of implementation of the ESR solution, customers can:

- Quickly offer new products and services
- Expand their customer base
- Tap new revenue streams
- Improve time to revenue

With less fallout, no wait period, faster service and no hiccups in the process, Neustar's compelling advantage is its ability to adapt to carrier's changing paradigms.

About Neustar Inc.: Neustar (NYSE: NSR) solves complex communications challenges by providing market-leading and innovative solutions and directory services that enable trusted communication across networks, applications and enterprises around the world. Visit Neustar online at www.neustar.biz.

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