**TNS**

# Implementing Number Portability with The Least Disruption

## What A CSP Can Do

CSPs faced with implementing number portability have a number of options to consider as they integrate it into their existing business processes and infrastructure -each has its own merits. This paper reviews the choices and offers guidance in selecting the right solution and partner. It explores the ways an advanced off-the-shelf Number Portability Gateway (NPG) can create an efficient and cost-effective solution that will allow the provider to save money and to focus on its core competencies, rather than going down the more time-consuming and potentially risky path of inhouse development.

## CSP Challenges in Supporting Number Portability

As regulators all over the world mandate number portability, CSPs are left to decide how best to integrate it into their existing business processes and current infrastructure. More importantly, they are faced with the opportunity of turning number portability into a competitive advantage by providing a better customer experience. After all, porting is part of a new customer's first interaction with a CSP and a smooth and positive experience can set the right tone for a long-term customer relationship based on high customer satisfaction.

Once number portability is required by regulators in a country, there are several questions CSPs might ask themselves:

- How can we best make the porting of numbers an efficient and positive experience for new customers?

- How can we turn number portability into a tool that helps us acquire new subscribers and generate new revenue, rather than scare potential customers away?

- How can we minimize the costs and the complexities that number portability integration will require?

- How can we make sure number portability integration does not become a distraction that keeps us from executing effectively on our core objectives as a company?

Implementing number portability support can be an extraordinarily complex undertaking for a CSP.

It means interfacing with the national clearinghouse that administers number portability. It also requires interworking with all the other CSPs in order to execute the porting process, the number portability process that can involve millions of ported numbers every year, with each ported number requiring 10-15 time-critical messages being passed between donor and recipient networks. In addition, number portability support requires integration with a CSP's Operations Support Systems (OSSs) and internal business processes, such as customer care, billing and order management. Network element systems also must be integrated so the network can obtain the correct routing information for calls to ported numbers.

# Implementing Number Portability with The Least Disruption

Special care must be taken to ensure the number portability solution does not compromise the integrity of firewall-protected and mission-critical systems like billing and network elements. A number portability solution must also be flexible and future proof, so that it can adapt to system upgrades and accommodate major changes to business processes and OSS.

## What Are the Options for CSPs?

Horizontal Versus Vertical Solutions

There are two basic approaches to implementing number portability support: horizontal or vertical solutions. The horizontal, or dedicated, approach relies on a standalone Number Portability Gateway (NPG), that interfaces with existing, internal support systems, without modifying them. The vertical, or Service Oriented Architecture (SOA), approach spans several service and application layers, requiring each system to be modified individually by the CSP. A third option would be a hybrid of both horizontal and vertical approaches.

Insulating Back Office Systems from The Impact of Number Portability

A vertical number portability solution might be viable for a single vendor network but in multivendor networks, the complexity of the solution grows significantly due to the number of systems that must be modified to accommodate a vertical implementation.

The horizontal number portability gateway approach does not require any modification of internal business and operations support systems, which can make it a cleaner method of supporting number portability. The horizontal approach is also largely insulated from changes in back-office systems and allows the CSP to upgrade and modify network and business systems without adversely impacting number portability support. The independence from critical business systems and the future-proof nature of the number portability gateway approach make it the generally preferred solution for number portability, therefore, we'll consider further how this approach is best accomplished and the things that need to be considered when selecting the right vendor with whom to partner.

## The End User Experience

Let us consider an example where a subscriber wants to switch from one CSP (the donor) to another (the recipient), while keeping her mobile phone number. She should be able to walk into a provider's retail location and request a new subscription with the porting of her existing phone number. Ideally, she should be able to walk away a few minutes later with a new device, with all the services she wanted, already activated on her new network with the same phone number she has always had. If she prefers, she should also be able to switch CSPs and port her number via the web or by making a phone call to customer care.

## A Gateway Can Provide Seamless Number Porting Service

How is the porting request of the end user accomplished in the CSP's network? The solution begins with the CSP deploying a number portability gateway solution that allows its Customer Relationship Management (CRM) system and sales operations to communicate with the national Number Portability Clearinghouse (NPC) so that any porting request can be sent from the retail store to the donor network via the number portability clearinghouse. The transaction should happen in minutes. If there is a delay, the recipient network should be able to inform the new subscriber when the porting will take place.

These activities are part of what is referred to as the port order provisioning function of the number portability gateway. This function encompasses the exchange of porting messages of participating CSPs, as well as interworking with internal business support systems (BSSs), customer care, billing, number management, in order to make the process as seamless as possible for CSPs and customers alike.

The other core function of the number portability gateway is called routing data provisioning. The number portability gateway regularly updates the network elements with all the new routing information necessary to complete the porting of phone numbers between CSPs so that calls can be made and messages can be sent to ported numbers reliably.

# Implementing Number Portability with The Least Disruption

The number portability clearinghouse regularly broadcasts updated routing information stored in its reference Number Portability Database (NPDB) and the number portability gateway automatically maintains a local copy of the database for the CSP.

The figure below illustrates the main functions of the number portability gateway, including port order provisioning and routing data provisioning. It also shows the key external interface between the number portability gateway, the regulated number portability clearinghouse and other CSPs as well as the internal interfaces with the business and operations systems and network elements.

## The Primary Benefits of Advanced Number Portability Gateway Solutions

Working with a competent partner, a CSP can efficiently integrate a number portability solution with its existing internal business processes. Choosing to deploy an advanced, commercially proven, highly reliable number portability gateway system offers several benefits:

**Faster Revenue Generation:**
the quicker a new customer can be ported, the quicker the CSP will begin to see revenue from that customer

**Reduced Operating Costs and Complexity:**
this is a result of automating the entire number porting process end-to-end, which eliminates the human-error risk of manual processing

**Minimized Implementation Risks and Costly Delays:** deploying in-house built solutions can be time consuming and may require expensive testing and troubleshooting.

## Letting An Experienced Number Portability Supplier Tackle the Implementation Details

Another important benefit of deploying an off-the-shelf turnkey number portability gateway solution, which should include training and managed support services, is that it enables the CSP to focus on their core business objectives, rather than diverting key management and development resources for this initiative. CSPs can avoid involvement in the time-consuming process of specifying, developing, implementing, testing and troubleshooting an unproven in-house solution. What is more, custom solutions can lead to delays in deployment, uneven performance, dissatisfied customers and compliance penalties imposed by regulators.
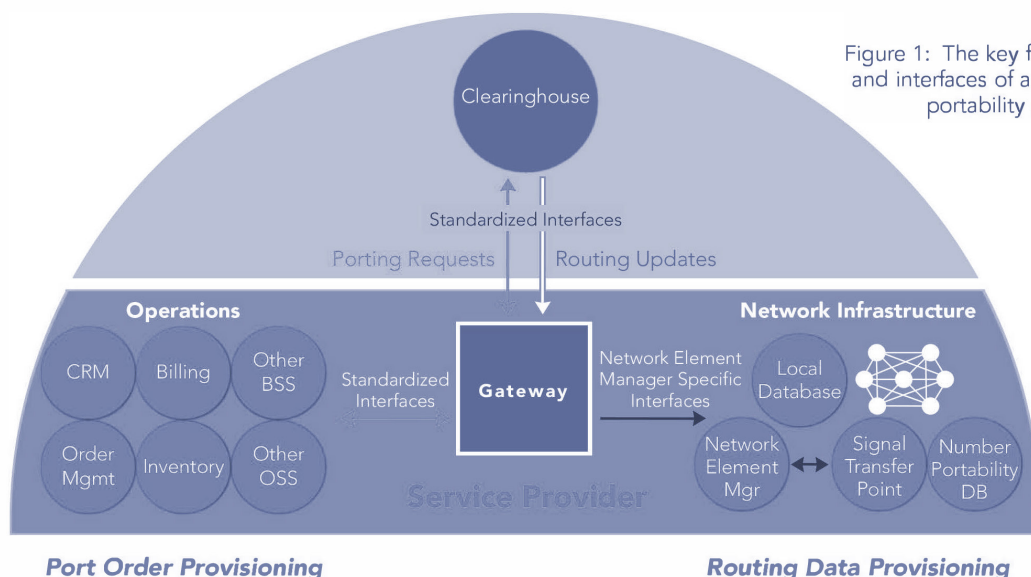


Figure 1: The key functions and interfaces of a number portability gateway

# Implementing Number Portability with The Least Disruption

## Leveraging Porting Information to Learn More About Customers

A secondary benefit of a number portability gateway is its ability to collect business intelligence that can help the CSP with its customer experience and marketing efforts; however, the use of porting data is subject to the regulations set forth by the number portability clearinghouse of each country. The number portability gateway tracks and reports all porting transactions, including successful and canceled port requests, porting times and the origination of requests. By accessing the number portability gateway's monitoring and reporting capabilities, a CSP can answer and act on questions such as:

- What types of subscribers are porting?
- Where are new subscribers coming from?
- What types of subscribers are leaving and where are they going?
- How effective are marketing and sales efforts in gaining new subscribers from competitors?

## What To Look for In Advanced Number Portability Gateway Solutions

When comparing and selecting ready-to-deploy number portability gateway solutions, a provider should be sure the systems they consider offer the following:

- **Support for Multivendor Network Element Management Systems,** which is important because CSPs often use multiple network vendors.

- **The Ability to Offer Port Order Provisioning** as well as integration with all internal BSS/OSS, including customer care and billing systems; this essential part of a number portability gateway is in addition to the routing data functions and the number portability database that switch and signaling system vendors often provide.

- **Configurable Workflow Timers**, which provide notifications and alerts that help providers respond to porting requests within the time limits specified by regulators, thus complying with number portability Service Level Agreement (SLA) rules and avoiding potential penalties.

- **The Ability to Audit and Update Local Copies of the Number Portability Database**, which regularly synchronizes with the reference number portability database to help avoid misrouting and call failures.

- **A Highly Flexible, Scalable, and Configurable Platform,** which minimizes the need for localization and customization. P ort processing capacity needs to be highly scalable to meet future demand and easy number portability gateway reconfiguration is necessary to be able to respond to the field input that will come following initial implementation.

- **Use of Standardized Interfaces** such as REST, SOAP, XML and JMS, to increase flexibility and help control costs.

- **Global Number Portability Expertise, Plus Local Delivery Experience**, provides a critical blend of knowledge from local and preferred system integrators.

- **An Extensible and Upgradable Platform** to support future capabilities such as device registry and ENUM for IP-based services.

- **Network Vendor Independence** a number portability gateway supplier that is network vendor agnostic helps ensure unbiased advice and facilitates a best-of-breed solution.

# Implementing Number Portability with The Least Disruption

## Summary

Implementing number portability support is an extraordinarily complex undertaking because it impacts internal business processes and requires integration with a national clearinghouse, internal BSS/OSS, and multivendor network element managers. Despite the Special care must be taken to ensure the number portability solution does not compromise the integrity of firewall-protected and mission-critical systems like billing and network elements. A number portability solution must also be flexible and future proof, so that it can adapt to system upgrades and accommodate major changes to business processes and OSS a revenue-generation opportunity if service providers can efficiently port in subscribers from competing networks. If properly managed, number portability can also give service providers a chance to build loyalty and customer preference through offering a superior user experience during the process.

A commercially proven, high-reliability number portability gateway can help a service provider effectively address these challenges and make the most of these opportunities. A reputable and independent number portability gateway partner can be instrumental in integrating a solution with a service provider's existing internal business processes, helping the provider implement more quickly by making the most of commercially tested solutions and experienced partners; reduce operating costs and complexity by automating the entire porting process; minimize the risk inherent in unproven in-house solutions; and generate revenue more quickly through the fast and reliable porting of new users.

## Find out how TNS can help you with a wide range of telecom solutions:

solutions@tnsi.com
tnsi.com

| | |
|---|---|
| USA | +1 703 453 8300 |
| Europe | +44 (0)114 292 0200 |
| Asia Pacific | +61 2 9959 0800 |