

# White Paper

## Managed Number Portability Solution

It just got easier for national regulators to introduce mobile and fixed line Number Portability and for Network Operators to accommodate local number porting processes. NeoConsult now offers state-of-the-art cost-effective managed Number Portability solutions with a full set of services, allowing you to focus on your core business.

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# Profiting from a Cost-Effective Solution

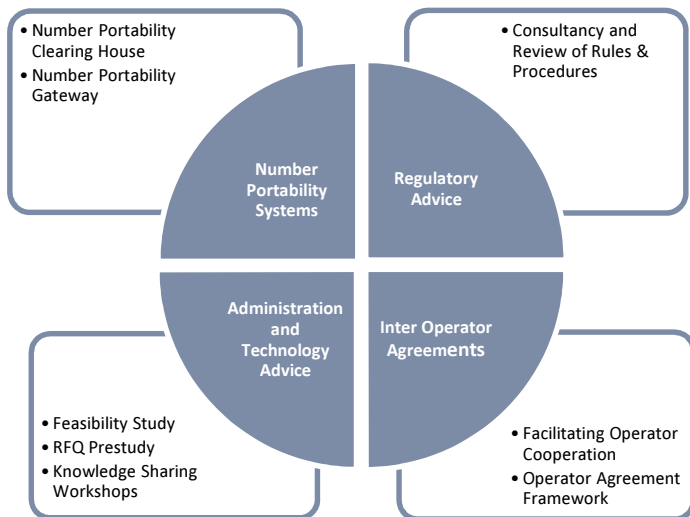
## A fully managed Number Portability Solution

Need an affordable high performance, flexible and innovative system platform for mobile and fixed line Number Portability?

NeoConsult's scalable and robust platform for Number Portability is designed specifically for the handling vast number of daily portings from a large number of Network Operators.

NeoConsult is proud to offer a global, fully managed Number Portability Solution that is deployable in weeks.

The complete Number Portability offering consists of the following products and services:



- **Number Portability Clearing House.** The Number Portability Clearing House is the centralized system and administration of national number porting. Our Clearing House platform is a very flexible and fully scalable solution although still very affordable.
- **Number Portability Gateway.** When national mobile or fixed line number portability is introduced the Network Operators must be ready to accommodate the number porting processes. Our Number Portability Gateway automates the number porting process, and it provides a very easy and cost-effective integration between the Network Operators internal operations and the central clearing house.
- **Number Portability Consulting and Advisory Services.** We provide Number Portability services covering all commercial, technical and regulatory aspects including consultancy and review of Rules & Procedures, feasibility studies, Request for Quotation pre-studies, knowledge sharing workshops, facilitation of Operator cooperation and help to establish the Operator agreement framework.

- **Platform Operation & Maintenance.** We operate our multi-tenant platform at 24 \* 7 with 99.9 % application availability. As business' change, the platform will follow your changing business needs using an agile development approach.
- **Support Services.** We can provide a number of different support options from simple Service Desk access to effective internal training programs.

As our platform is built using only a few mainstream technologies and because we are able to support it from a single location, the Total Cost of Ownership (TCO) for the Number Portability solution is very attractive compared to similar solutions.

## Want to do more yourself?

Not all clients are alike. You might want an on-premise solution, rather than a managed solution or you might want a specialized set of support services. Our services can be delivered in whatever form or shape you prefer.

In the following, we'll present our fully managed Number Portability solutions and our Number Portability services.

# A Full Featured Number Portability Clearing House Platform

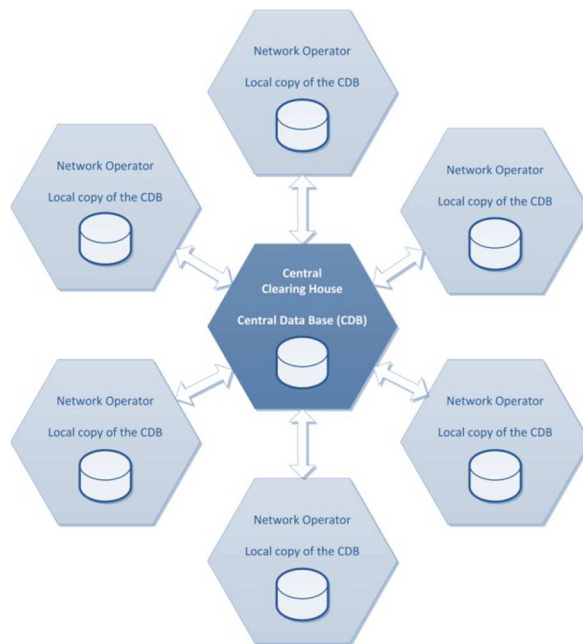
## Introduction

The NeoConsult Number Portability Clearing House Platform unites the interoperator messaging and a central data base of ported numbers in a single application handling Number Portability on a national level.

A significant technical aspect of Number Portability is related to the routing of calls or mobile messages (SMS, MMS) to a number once it has been ported. There are various flavours of call routing implementations across the globe, but the international best practice is via the use of a central database (CDB) of ported numbers. Each local Network Operator makes a copy of the CDB and queries it to find out which network to send a call to. This is also known as the All Call Query (ACQ) method, and it is highly efficient and scalable. A worldwide majority of Number Portability systems are based on this ACQ/CDB method of call routing.

In the following, we'll present some of the key concepts included in the ACQ/CDB based NeoConsult Number Portability Clearing House Platform:

- Key facets, such as SOA based architecture and Web based NP management
- Simple, easy-to-maintain portability process flows
- Scalability and robustness



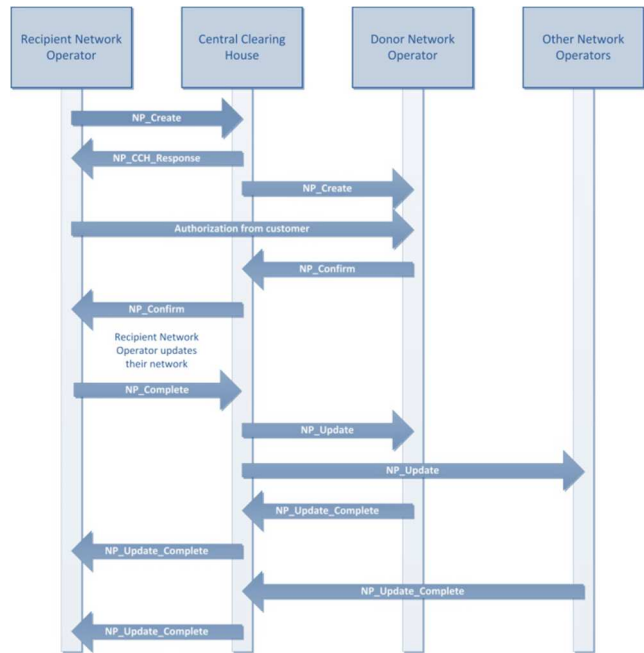
## Key Facets of the NP Clearing House Platform

SOA based Architecture	Web Based NP Management	Based on Latest Technologies
<ul style="list-style-type: none"> <li>• Fully automated portability processes reducing the overall cost of NP</li> <li>• Easy adaption to unique national NP requirements</li> <li>• Easy maintenance minimizing operating costs</li> <li>• Full audit traceability</li> <li>• Workflow based, lowering costs and risks when introducing new requirements from operators or regulator</li> </ul>	<ul style="list-style-type: none"> <li>• Easy-to-use Web based regulator and operator GUI</li> <li>• Role based security model</li> <li>• Powerfull reporting and analysis tools</li> <li>• Self-service portal for Network Operators</li> <li>• Easy maintenance of operators and number blocks</li> </ul>	<ul style="list-style-type: none"> <li>• Based on J2EE standards</li> <li>• JNDI</li> <li>• JAAS</li> <li>• Web framework</li> <li>• Google Web Toolkit</li> <li>• Exposed API's</li> <li>• JAX-WS based SOAP Services</li> <li>• Persistence framework</li> <li>• Apache iBatis.</li> </ul>

# Portability Process Flows, Scalability and Robustness

## Portability Process Flows

- All portability processes implemented as XML based workflow descriptions
- Quick adaption to unique national number portability requirements
- Easy to maintain reducing total cost of ownership
- Provides full traceability on all ported numbers
- All administrative portability process flows supported

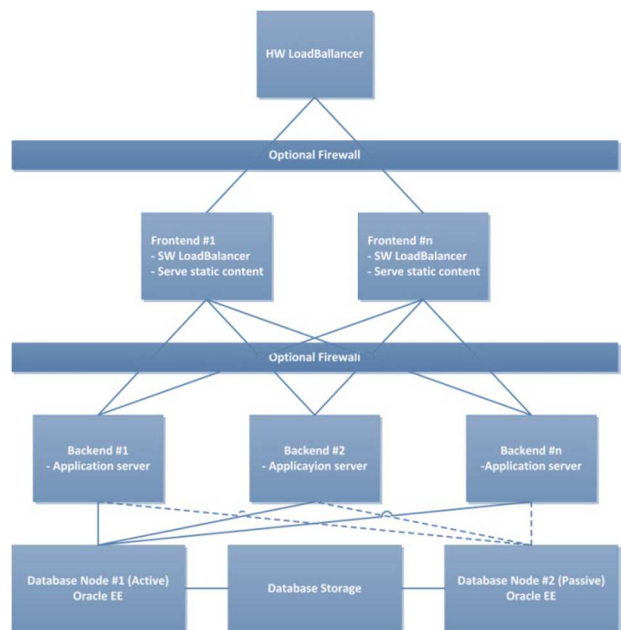


## Scalability and Robustness

The platform is build on a very effective clustered horizontal scaling strategy, which literary means that the it is possible to scale the platform to support any number of MSISDNs and an endless number of local Network Operators.

At the same time this strategy provides redundancy as two or more instances of the different application processes can be installed on different application servers splitting the workload between them or seamlessly taking over for each other as required.

The database servers can be configured in an active-standby or in an active-fall-over configuration as required.

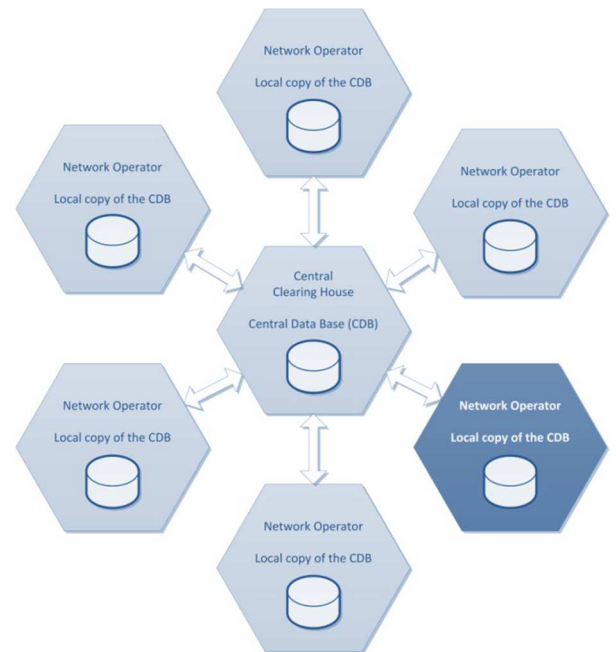


# A Full Featured Number Portability Gateway

## Introduction

When national Number Portability is introduced the local Network Operators must implement support for Number Portability within their own networks and their billing systems providing support for direct routing for ported numbers. To overcome this business-critical task the Network Operators can at a profit use a Number Portability Gateway.

The NeoConsult Number Portability Gateway is a SOA based workflow platform build on years of international Number Portability experience. It easily integrates to the Network Operator's network equipment, CRM and billing systems via SOAP based APIs, and it fully automates the Number Portability process. The Number Portability Gateway fully supports underlying MVNOs.

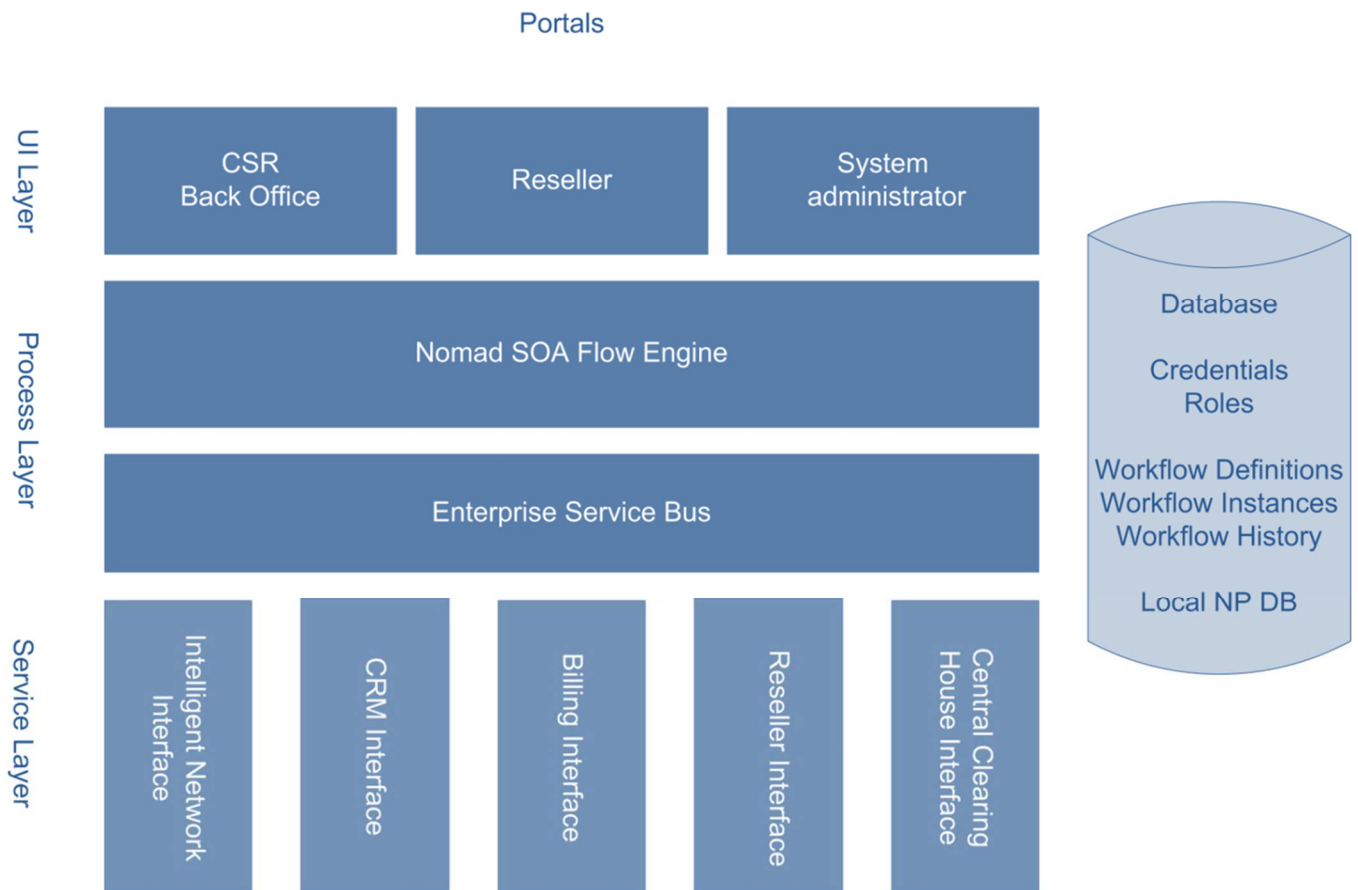


## Key Features

- Affordable state-of-the-art dedicated Number Portability Gateway platform
- Build on comprehensive international Number Portability experience
- Easy adaption to unique national Number Portability requirements
- Fully automates the Number Portability process
- Easy integration to network equipment, CRM and billing systems via SOAP based APIs and workflows handling provisioning and deprovisioning of your equipment
- Full support for MVNOs and resellers
- Easy-to-use web based administration GUI
- Powerfull reporting and analysis tools
- Complete audit traceability
- Easy maintenance of Number Portability process flows minimizing operating costs
- Robust and fully scalable

# Number Portability Gateway – Architectural Overview

## Number Portability Gateway – Architectural Overview



### The Main Technologies

- Based on J2EE standards
  - JNDI
  - JAAS
- Web framework
  - Google Web Toolkit
- Exposed API's
  - JAX-WS based SOAP Services
- Persistence framework
  - Apache iBatis

# The Benefits

## Introduction

The benefits obtained by using our managed Number Portability offerings are substantial, compared to other comparable solutions – please see below.

Benefit	
■ Improved productivity and service quality	■ The Number Portability process is automated and ensures unified flows that will lead to a better customer experience
■ Reduce costs	■ Our comprehensive Number Portability experience minimizes implementation and operational costs
	■ The Number Portability process is fully automated
	■ Easy maintenance of the Number Portability process flows minimizes the operating costs
	■ Costs for operation and maintainance is lower due to the managed solution
■ Scalability	■ The platform can scale to support any number of MSISDNs and an endless number of local Network Operators
■ Complete audit trail	■ The system features comprehensive logging and audit facilities, every action is under strict access control and you will be able to see all details on every process.
■ High availability	■ The managed platform is designed for 24 * 7 operations with 99.9 % availability
■ No up-front investment	■ As the solution is managed, pricing is pay-as-you-go, i.e. you don't have to invest in hardware, software etc.
■ Turn-Key Solution	■ The NP solution covers all aspects of Number portability from Governmental needs to the needs of the operator
■ Proven solution that adapts to customer changing needs	■ The Number Portability solution has more than 10 years of track record in one of the worlds most competitive markets
	■ The Number Portability solution can be fully customized to match rules and procedures in different countries
■ Fully automated proces flows	■ The Number Portability process is automated and ensures unified flows that will lead to a better customer experience and minimizes manual interference and errors



# Project Rollout Services

## Get a solid footprint for your Number Portability services

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### Integration Services

#### Introduction

We have vast experience with various integration services and have previously integrated to legacy telecom systems, numerous databases, core network components and third party providers.

Today we offer integration services as natural part of the delivery process.

The Number Portability offerings utilize a Service Oriented Architecture (SOA) to facilitate communication to and interaction with external systems. SOA is an international open standard, working across LAN or internet and offering full certificate based security and XML.

A Service Oriented Architecture isolates the business logic in one or more separate systems, which interface with a number of reusable services. Each service is by itself an isolated sub-component, and is in many cases based on open standards. The SOA approach enables a high degree of reusability, as many of the different services are used in several business processes. This way the liberation of existing assets on the one hand ensures significant operational cost savings and/or rapid development of new solutions (faster time-to-market), and on the other hand ensures improved business processes and more tailored applications. SOA governance helps to ensure discipline and control throughout the lifecycle of the complete process. All this inevitably leads to improved customer satisfaction.

Having years of experience with various integration points, we can offer seamless integration with any components in your existing IT infrastructure through our Enterprise Service Bus.

### Counseling Services

#### Introduction

Once introduced Number Portability becomes a business-critical element both for national regulators and for the local Network Operators as consumers are directly affected. The quality of the Number Portability service is of the outmost importance, but at the same time the regulators and the Network Operators are under an enormous pressure to keep the cost of the service as low a possible. Therefore, it is important to ensure that the Number Portability processes are as simple and effective as possible, and that the Number Portability service implementation is done right the first time.

#### Counseling services, consultancy and review of Rules & Procedures

Our counseling services around Number Portability establishment are focused on providing you with real-life experience and best practices from Number Portability world wide. We help to ensure that your Rules & Procedures are efficient and adequate. We can negotiate directly with different Network Operators on your behalf or participate as experts to achieve this goal.

#### Counseling services, Request for Quotation prestudies

Based on our strong reputation for managing Telco applications in general and our many years of Number Portability experience in particular we help to ensure that your Request for Quotation is exact and adequate prior to a tender.

#### Counseling service, knowledge sharing workshops

As a part of our counseling services we offer to arrange and facilitate Number Portability knowledge sharing workshops for government representatives, regulators, Network Operators and others as part of the planning of the introduction of national Number Portability.

#### Counseling services, establishment of Operator agreement framework

Finally, on the commercial side of our counseling services we can help to create the inter Operator agreement framework that regulates national Number Portability. Again, we can either negotiate directly with different Network Operators on your behalf or we can participate in the negotiations as experts.



# Conclusion and Next Steps

## Global Coverage

### Addressing the global challenges

Our global reach through our partnership program enables us to deliver IT services around the world supporting our customers in multiple languages and with local presence.

We and our partners manage infrastructure for customers around the world and provide the assurance that, with us, their IT operations will receive the attention to service quality consistency and security they require, wherever they might be located. Our operational delivery processes are following the ITIL Service Management Framework. Our partner's data centers are designed and operated according to Uptime Institute standards (mostly Tier III), with secure operations conforming to various national government standards.

NeoConsult's vast Number Portability experience and our global partnerships ensure that we retain leading edge innovative services to support an organization's unique and complex Number Portability challenges.

In order to increase the operational efficiency when rolling out the Number Portability solution, a standardized integration project, including the local NeoConsult partner is suggested.

### Next Steps – Call Us!

#### Let's give you a full demo

The best way to get started is to get a live demo. We'll be able to setup a fully functional demo addressing your specific needs at your request.



### Contact

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