



Why is this training necessary?

MNP training is most beneficial at the very beginning of MNP discussion in a given country:

- when regulators are drafting first requirements,
- when discussions with the regulator and other operators are just starting,
- when lobbying and negotiation positions are being defined,
- when the scope, impact, and solution options are uncertain.

MNP has wide scope and impact:

- the regulatory and central database-related topics are only a fraction of the whole picture,
- MNP affects virtually all areas of your business as a mobile operator (regulatory, business, marketing, interconnect, network, billing, IT,...),
- most of the burden of implementation falls to the mobile operator and concerns areas which are never even mentioned by regulators,
- MNP projects can take more than 1-2 years even if your company is well organised and focused.

MNP training will provide you with awareness and solutions, which will enable you to:

- define your position in negotiations with regulators and other operators and vendors.
- setup a company-wide project that will cover all crucial aspects of the implementation.
- choose and implement the best solutions in every area.

When is this knowledge needed?

- before you comment on the regulatory requirements,
- before you start negotiations with other parties,
- before you start assessment of the affected processes and systems,
- before you look for solutions or initiate design processes.

Who Should Attend?

This three-day Mobile Number Portability training consists of two sessions:

- Session 1 – Key Considerations – this is an introductory session intended for anyone involved in a Number Portability project, including project managers, project workgroup leaders and experts in the areas of core CS/IMS network, VAS, IN, IT systems, billing, interconnect, regulatory issues, and marketing.
- Session 2 – Network Implementation – this part of the training is designed to provide an in-depth understanding of the mechanics of NP network solution and modifications required in CS/IMS Core Network (CN) and surrounding systems – such as staff responsible



for CN planning and maintenance, and specialists in billing, interconnect, provisioning and service cost modelling.

This training is also recommended for senior engineers analysing and finding solutions for NP impact on systems, and anyone who needs an in-depth understanding of the mechanics of NP network solutions and modifications required in CN and surrounding systems.

Session 1 - Key Considerations

Objectives

Mobile Number Portability is a very complex project that affects virtually every area of an operator's business, but in order to make it a success, you must understand the implications of MNP, its key concepts and dependencies. The objective of the first part of the course, therefore, is to enable such awareness and understanding, especially relating to the extensive modifications required in the network and IT systems and key assumptions concerning regulatory aspects, traffic routing, interconnect, marketing and project management.

Content

1. Key definitions related to Number Portability: what is number portability, what is in MNP scope, explaining key concepts and vocabulary.
2. Motivation: analysing various reasons why MNP may be required—internal and external factors.
3. Legal requirements: discussing EU requirements concerning MNP implementation and its local implementation.
4. Role of the Regulator: discussing what aspects of MNP implementation the Regulator may concentrate on and what the various approaches are.
5. Areas of cooperation between operators: analysing which areas of the project require inter-operator cooperation and what work-packages they can be organised into.
6. Areas impacted in operator's business: providing an overview of areas in operator's business that are impacted by MNP implementation; why they are impacted.
7. Project set-up: providing a proposition of project structure within the operator's organisation to cover all topics related to MNP.
8. Strategy and marketing assumptions: discussing possible approaches that the operator may take towards MNP implementation – active vs. passive, pros & cons for each option.
9. Position in negotiations with other operators and vendors: discussing possible approaches to problems.
10. Porting process: presenting various models of the porting process—one-step approach, two-step approach, porting process duration, postpaid / prepaid.
11. Exchange of porting data between operators, central database and other models: understanding how communication between operators can be arranged in order to



- enable effective porting process; discussion of centralised and decentralised models.
12. Tariff transparency: analysing the impact of MNP on tariff transparency, possible solutions, and pros & cons.
 13. Solution architecture, MNP databases, their localisation and role: understanding the overall solution architecture on the inter-operator and intra-operator levels, understanding various kinds of MNP databases that are required and placing them within the overall solution architecture.
 14. Overview of routing schemes for voice (CS and IMS), SMS and MMS: explaining direct routing schemes, indirect routing schemes and all their flavours.
 15. Interconnect aspects: discussing issues that need to be considered in the interconnect area.
 16. Support in operator's IT systems and systems affected, including billing, provisioning, and porting process support: analysing which areas of IT will be impacted, proposing an overall architecture and specific solutions.
 17. Overview of network solution - introduction to Part II (analysing which telecommunication systems are impacted and in what way).
 18. Discussion of key dependencies between various areas of the project: understanding how decisions in one area of the project can impact others and discussing areas in which cooperation is especially important.

Session 2 - Network Implementation

Objectives

Preparing mobile operators CS/IMS Core and VAS systems to support Mobile Number Portability is a very challenging task, constituting probably the most complex, extensive and costly part of the whole MNP project. Moreover, no offshelf solutions exist in this case due to the specifics of each network and each country. This part of the course provides an indepth understanding of the impacts of MNP on CS/IMS Core and VAS systems and presents in detail a range of available functionalities and solutions for each case. This session highlights how a coherent networkwide solution can be worked out and optimised. Detailed routing and network configuration aspects are also discussed.

Content

1. Discussion of important inputs and assumptions for the network project (understanding what inputs are required to start design and implementation in the telecommunication systems).
2. Defining a list of services and systems affected (defining and discussing a detailed list of telecommunication systems and services that may be impacted by MNP in CS and IMS domains).
3. Defining and negotiating necessary changes in signalling on inter-operator interface (understanding what modifications are required to SS7 and SIP signalling protocols to enable MNP, which specifications are relevant, what is the common practice, which



aspects may require negotiations).

4. Network solution architecture; location of NP database(s) in network structure (working out the MNP implementation architecture in the telecom area and adequate network structure).
5. Details of routing models for voice and SMS and their realisation options including solutions based on SRF/MATF, IN and ENUM (analysing in detail an extensive list of call flows impacted by MNP and proposing various solutions for each case, analysing various technologies for MNP functionality implementation in the network, discussion of pros & cons).
6. NPDB defining the requirements and choosing a suitable solution (investigating what functionalities are required in the network-level MNP database, discussing how to choose the most suitable NPDB solution in a given network environment — covering CS and IMS domains).
7. Detailed discussion of modifications required for Core Network (CN) systems and services — MSCs, PrePaid, VPN, SMS, MMS, VMS, LBS, (going through all telecommunication systems to prepare a detailed list of MNP impacts and possible solutions for each case).
8. Interdependencies with systems surrounding CN (mediation and billing, provisioning, interconnection); working out a coherent network-wide approach (discussing what kind of interdependencies may exist, understanding what kind of decisions have to be taken to work out a coherent overall solution).
9. Call flow optimisation, redundancy issues (analysing very detailed aspects related to optimisation of CN configuration/routing and ensuring adequate solution robustness).
10. Solution rollout and testing (discussing what activities need to be undertaken during MNP solution testing and rollout on intra- and inter-operator levels).

Prerequisites

There are no prerequisites to attend the first session; however, participants should have basic knowledge of call handling in CS and IMS Core network, signalling network structure, and signalling routing in order to better understand session 2 issues.

Training Structure

Three-day course divided into 2 logical sessions, 1.5 day each.

Methodology

Instructor-led training.