

Bharti Airtel's Response to TRAI Pre-Consultation Paper on Full Mobile Number Portability

A. Introduction:

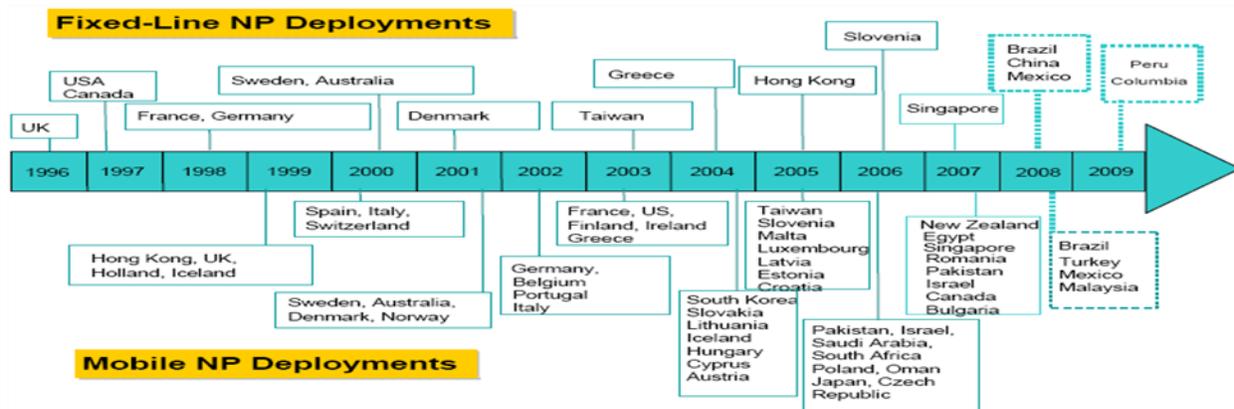
The facility of Intra-Circle MNP was launched on Jan 20, 2011; the same was possible due to the collaborative efforts of TRAI, DoT, TEC, MNPOs and the Telecom Service Providers. The concluded MNP implementation exercise in the year 2011 included rigorous efforts in making the changes in Network configuration, routing of calls, Billing, IN, customer care process etc. The total number of customers who availed this facility since its launch is only 80.06 million and we foresee that with the implementation of full MNP this figure may go up only marginally as this depends on the physical migration of subscribers from one state to another.

TRAI in its recommendations dated 8th March 2006 had recognized National MNP as a value addition to MNP, however, a comprehensive Intra Circle Number Portability implementation has not been achieved as wire-line/fixed line number portability has not been given due consideration. Now with the experience of successful Mobile portability, we believe that it is the right time when number portability is also be extended to fixed line customers. The present, MNP infrastructure, may be extended to Fixed Number Portability(FNP).

Further, we would like to submit that the full MNP and the fixed line number portability should be followed by service MNP i.e. Porting should be allowed between the services (mobile to fixed, fixed to mobile etc).

B. International Implementation of Number Portability:

The International Implementation wrt FNP and MNP is as follows:



It can be inferred from above that Internationally FNP has been considered before MNP. While FNP was not considered during 2005-06 exercise but with the implementation of MNP, market is mature now. And, the situation is different today with 6 private service providers (Total 8 operators including PSUs) sharing around 22% market share in wire-line market. We therefore feel that TRAI should consider fixed number portability along with Full MNP and the benefit of this service should be extended to fixed line users.

C. Issues wrt Inter Circle Portability:

The cost exercise for implementation of National MNP and FNP would require to be extensively carried out. The benefits of this implementation would accrue to far fewer subscribers than even Intra Circle MNP seekers. Therefore, it should be the collective endeavor of all stakeholders to keep such costs low.

Additionally, it has to be ensured that the processing load should be optimized on Network, IT, RA and Billing so as to ensure that all calls are not critically impacted.

The success of implementation would only be achieved if all stakeholders including subscribers are in tandem. Issues with respect to enabling subscriber convenience needs to be balanced by certain dialing etiquette/behavior that needs to be followed. Like in the case of prefixing '0', it should be considered as part of a subscriber responsibility rather than causing to effect voluminous and high cost inducing changes in the entire backend routing infrastructure of telecom networks.

OUR ISSUE WISE RESPONSE TO TRAI IS AS BELOW:

1. Inputs / comments of the stakeholders on the most optimum method for implementing Inter-Service area porting out of the three approaches discussed in this paper are requested.

Bharti Airtel's Response:

Each of the three approaches has been evaluated below at a high level:

1. Approach 1: Recipient Operator forwards the porting request to the MNP service provider of his zone:

- It is the least disruptive approach from the TSPs/Operators' perspective.
- Minimal changes are required in the operators' NPG as the recipient operator continues to forward the porting requests from the subscribers desirous of porting out their numbers to the MNPSP of its zone. The operators/TSPs are thus least impacted.

2. Approach 2: Recipient operator forwards the porting request to the MNP service provider of the zone to which Donor Operator belongs.

- Approach 2 is most disruptive among all the three approaches.
- The Operators' NPG will have to be connected to both the MNPSPs to cater to both the Intra and Inter MNP Zone portability requests.
- The NPG must have the intelligence built-in to identify the Intra/Inter MNP Zone portability requests and accordingly forward the porting requests to the appropriate MNPSP. This requires major changes in the NPG and may involve significant cost.

3. Approach 3: Recipient Operator forwards the porting request to the MNP service provider of the zone to which number range holder of the number belongs.

- The Operators' NPG must have connectivity with all the MNPSPs as the porting request will have to be forwarded to different MNPSPs based on the number range.
- The NPG must have intelligence built-in to forward the porting request to different MNPSPs based on the identity of the number range holder network. This requires major changes in the NPG and may involve significant cost.

2. Inputs may also be provided on amendments required in the existing licence conditions of the MNP service licence, relating to scope of work, entry fee, licence fee, exclusivity period etc.

Bharti Airtel's Response:

The MNPO license conditions must include National MNP, including FNP . This also requires interconnectivity to be established by MNPOs between themselves as well as all service providers.

- 3. Comments may be provided on issues related to generation of UPC by a roaming subscriber outside his service area, including generation of UPC for the subscriber desiring to/from porting in J&K service area.**

Bharti Airtel's Response:

- Generating a UPC using the short code is currently enabled in all networks. The same code may also be made operational while the subscriber is roaming outside his/her service area. However, a subscriber generating a UPC while on roaming to another service area should be charged at roaming rates.
- With regard to prepaid **out-roamer of J&K** service area (Not allowed to send SMS to 1900), IVR option is the only route to be taken. However, IVR access is also a challenge for UPC generation until and unless the DoT instructions are modified to cater to this as prepaid customers are not permitted to avail this service on national roaming. This will hold true for prepaid in-roamers from other circles in J&K too.

- 4. Comments may be provided on mechanism to be adopted for routing of calls if the number has undergone inter-service area porting.**

Bharti Airtel's Response:

- **In case subscriber makes a call with "0" or "+91", call will be successful but caller will be charged at STD rates as the number has been ported out to other Service Area:**
 - In most of the cases, caller may already be aware that called party has changed the location and the onus should lie on the calling party to bear the STD charges , if applicable.
 - Playing announcement before each call will impact the Call Set up Time and load on the network substantially.
 - Playing announcement before each call will severely impact the caller's experience.
 - MSCs do not support this functionality and will need customization for playing announcements and then continuing the call. It will also have additional need of announcement devices i.e. additional CAPEX.
- **Other Technical challenges in playing the announcement that the number has been ported out to other service area:**
 - Each MSC/MSS will have to maintain a separate LRN Table/B-Number Table for Intra and Inter-Circle Ported out cases for the purpose of determining whether the LRN returned from the MNP dipping belongs to the same service area or a different service area and play the announcement in the latter case.
 - It will be humongous task to maintain such tables in each and every MSC/MSS in view of the huge space consumed and the resulting increased memory/processing required for call processing.

- The playing of pre-announcement will increase the mean holding time of the calls leading to higher processing required for call processing.
- It may be noted that there is no difference between the Intra and Inter-Service Area ported out cases from the perspective of MSS/MSC as it just entails routing the calls based on the LRN returned from MNP dipping. Such capability is now required to be built-in in the MSS/MSC for the pre-announcement which may involve additional cost. The same capability may be required to be extended to IN and Mediation systems as well i.e. the IN and Mediation may need to have the same capability built-in.
- The STD rates today have plummeted to almost the same as local call rates and therefore it is felt that there is no need for a pre-announcement in case of Inter-Service are ported out cases.

It is therefore suggested that to either simply release the calls or play the standard announcement "number does not exist". The onus lies with the customer to dial the number in the correct dialing format i.e. with 0 or +91. In any case, with full MNP, the subscribers may be educated to dial the numbers in the +91 format which is the standard dialing format.

5. As the present regulations are formulated for porting of mobile numbers within service area, inputs may be provided regarding modifications required in the MNP regulations.

Bharti Airtel's Response:

A. The modifications required in the present regulation may be deliberated upon post finalization of the approach to forward the MNP request to MCH.

B. Other Key issues wrt MNP Regulations:

• **90 days porting period:**

- This period may be enhanced to 180 days ,since operators will be spending considerable expenditure to upgrade the network to allow Full MNP. Accordingly, customers should be locked in to the network for minimum period of 180 days. In addition, this is also in line with the tariff protection requirements mandated by TRAI wherein TSPs cannot increase tariffs.

• **Port out cancellation process to be through SMS based mechanism:**

- In the past there have been various deliberations and meetings of the industry with the TRAI to resolve issues related to smooth implementation of MNP to enhance customer experience.
- One of the key issues which were highlighted by the industry in these deliberations was regarding the electronic- SMS based withdrawal of the porting request of the subscriber. Industry had also highlighted three options for this electronic based cancellation of porting request to TRAI.
- In this regard, we would like to submit that there is pressing need to streamline the process of cancellation of port-in request which is a right given to the customer as per the existing regulations.
- We request TRAI to review our proposal and make necessary amendments in the regulations so that the process is customer friendly as well as implemented with ease by all the service providers which we believe will help resolve the problem about the customer's decision to cancel his port-out request.

- The current process of physically sending written request to RO within 24 hours of porting submission is too cumbersome and will be operationally very challenging to implement in a full MNP scenario.
- **TAT for activation / deactivation of porting requests to be kept at threshold level of 95%:**
 - This refers to the Mobile Number Portability (Fourth Amendment) Regulation, 2012 dated 19th September, 2012, which provides for levy of “financial disincentive” on service providers for non-compliance of Regulation 11(4) and Regulation 11(6) viz. inability to port-in or port-out within 2 hours of instructions from Mobile Number Portability Service Provider.
 - It is submitted that it is extremely difficult and almost impossible to comply to the extent of 100% with the Regulation. Industry had highlighted both technical and IT related issues/challenges to comply 100% with the said Regulation vide COAI letter No. RSM/COAI/231 dated November 15, 2012.
 - We request that the said Regulation may be modified, insofar as the financial disincentive part is concerned i.e. no financial disincentive will be levied if the service providers are able to comply 95% of request within 2 hours of instruction form MNPSP.
 - This would facilitate in attaining the desired objective of port-in/port-out in shortest possible time without in any manner compromising the rigor of financial deterrence envisaged for willful default in complying with the Regulation.

6. Minimum Possible testing scenarios covering the various possibilities of porting.

Bharti Airtel's Response:

- During the last Intra-circle MNP implementation, operators had followed rigorous testing schedule and had checked all possible calling, SMS, MMS etc scenarios covering various possibilities of porting.
- In case of Full MNP, we suggest that the testing should be based on minimum possible scenarios (avoiding any duplication) and involving minimum workforce and resources. Since, Full MNP implementation would be a joint exercise between service providers and TRAI/DoT/TEC, for the customer facility, we suggest that there should not be any AT testing fee as charged by the TERM Cell during the last MNP roll out exercise.
- **The following should be considered while deciding the testing scenario for Full MNP.**
 - With the introduction of the Full MNP the present ACQ (All call query) based methodology would continue unchanged for the routing of the Call/SMS and it is felt that no separate call flow testing may be required. However, port-in and port-out test cases may still need to be performed.
 - Still, two service areas can be identified and all the test cases including roaming test cases can be performed between the two service areas in 3x3 matrix/ IOT 69 format.
 - No Intra-Circle Test cases are required to be performed as they have already been covered during initial MNP testing.
 - The detailed test sheet/cases need to be worked out based on Industry Inputs.

7. Comment on any other relevant point related to full number portability may be provided.

Bharti Airtel's Response:

We would like to highlight the following related issues wrt to Full MNP Roll out:

A. Timeline and Impact:

- The timelines for such a large implementation should be well spaced so as to not impact critical services. In line with a high number of resources required the timelines should be between 15-18 months from date of ordering equipment and upgrades in the present systems.
- Any enforced timelines shorter than 15 months would not yield the desired results and therefore, this timeline should be spaced well keeping in mind the size of networks and the work required to be done.

B. The areas of elements impacted and work required to be done is encapsulated below for further deliberation.

• Impact / Changes required in the Network -

- The NPDB has limited capacity which has already reached its optimum usage. Existing STP vendors can only support up to 100Mn. With Full MNP, this capacity would require at least 8-10 months to enhance an implementation.
- Significant changes in all MSCs is required with the addition of the challenge of reaching limitation on number of entries in the tables, changes in GT tables would also have to be overcome.
- Enabling any announcement specifically for Inter Circle ported number only would require a change across all MSCs for only a marginal number of subscribers.
- Currently call forward is allowed only in the service area. Call forward activation is controlled by number series definition in HLR. Routing control for call forward is in the MSC routing tables. In case of national MNP, there will be a need to open call forward activation to MSISDN series of other service area as well. This will impact subscribers experience as call forward activation and actual call forward allowed will not be same and will lead to call failures.
- There may be an increase in number of transit CDRs
- There will be impact on processor load and memory utilization in MSCs.
- In fixed-line, all mobile codes will be required to be opened and will impact screening of codes for local/SDP/PCO services.
- For toll-free services, there will be a requirement of customization to provide functionality to route numbers based on porting status.

• Impact on IN and Recharge of Customers-

- Currently electronic Recharge applications send the request to respective circle's IN system based on the number series of that service area. With National MNP, these recharge applications need to dip in MNP Database to figure out where to send the request.

- SMS charging during international roaming for prepaid subscribers, which is on diameter (for charging), will also require a similar change.
- Rating changes required in prepaid IN system to ensure port-in & port-out numbers are charged correctly local and STD rates for Voice and SMS calls.
- Customization required video calls charging to support national MNP scenarios.
- Offline CDR charging solution will need Software and configuration changes to support National MNP.
- Customization required in online provisioning system for barring/unbarring of GPRS/SMS services when subscriber balance goes below threshold and other online provisioning flows.
- **Impact and changes required in IT system:**
 - **Mediation**

The jurisdiction logic which command rating and provisioning would go for significant changes which will impact application nature and capacity.
 - **Prepaid CRM(PACS) & Post paid CRM**

Customer profile based on circle and operator would go through complete re-vamp.
 - **Pre paid Provisioning System**

Provisioning flow which is currently based on circle and series would undergo through significant changes.
 - **Post paid Provisioning System**

Provisioning flow which is currently through mediation would require changes.
 - **MNP gateway system(NPIT)**

This system logic of MNP framework would completely change based on the approach that is finalized.
 - **FTA for Post paid & Prepaid**

Activation flow which is currently based on circle and series would undergo through significant changes.
 - **BI and Analytics**

Currently BI and Analytics system are deep-rooted with circle and series would require 360 degree changes to support LRN based changes.
 - **Recharge platform**

The entire flow is based on circle & series would require changes.
 - **VAS lifecycle Management System/VAS Charging System**

The entire flow is based on circle & series would require changes.

➤ **IVR**

The entire flow is based on inputs from repository and would require changes to cater the new process flow.

➤ **Message broker**

The entire flow is based on circle & series would require changes

➤ **Subscriber repository**

The validation in the system are based on the circle and series would require changes

➤ **Self-care System**

The entire flow is based on inputs from repository and would require changes to cater the new process flow.

➤ **Customer Lifecycle Management System**

The downstream flow logic is completely based on circle and series hence require changes.

➤ **Content Provider Systems**

All content provider use circle and series for activation \ deactivation validations hence we require changes to cater the process

➤ **Others**

200 + central \ Hub \ Circle Application & reporting system would required medium and high level changes

These views are Preliminary to highlight the complexity of this task. We would request that all these be factored in during the consultation stage which all stakeholders can comment in greater detail.
