Telecom Regulatory Authority of India

Recommendations on
Full Mobile Number Portability

(Pan-India Number Portability)

New Delhi,   25th September, 2013

Mahanagar Door Sanchar Bhawan, Jawahar Lal Nehru Marg,
New Delhi - 110002

CONTENTS

Chapter I: Introduction

1.1 In accordance with the provisions contained in the National Telecom Policy- 2012 regarding "One Nation – Full Mobile Number Portability", the Department of Telecommunications (DoT) through its letter dated 27th Dec 2012, sought the recommendations of the Telecom Regulatory Authority of India (TRAI) under the TRAI Act for implementation of full Mobile Number Portability (MNP) i.e. MNP across Licensed Service Areas (LSA). (**Annexure-I**)

1.2 On 20th Feb 2013, TRAI issued a pre-consultation paper on Full Mobile Number Portability inviting inputs from stakeholders on the issues relating to processing of porting request, routing and charging of calls, method for implementing inter-service area porting, amendments required in the existing license conditions of the MNP service license, generation of Unique Porting Code (UPC) by a roaming subscriber, modifications required in the present MNP regulations etc. Inputs received were placed on the TRAI website. After analysis of the inputs received, extensive deliberations with the Telecom Service Providers (TSPs) and internal analysis, the Authority's recommendations have been finalised.

Background

1.3 MNP allows a subscriber to retain his mobile telephone number when he moves from one Access Provider to another irrespective of the mobile technology or from one cellular mobile technology to another of the same Access Provider.

1.4 In India, the facility of MNP was launched in Haryana LSA on 25th November 2010 on a pilot basis and was launched all over the country on 20th January 2011. Presently, the facility of MNP is restricted within an LSA only.

1.5   For the purpose of MNP, the country has been divided into two Zones – Zone-I consisting of Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Maharashtra, Punjab, Rajasthan, Uttar Pradesh (E), Uttar Pradesh (W), Delhi and Mumbai LSAs and Zone-II consisting of Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, North East, Orissa, Tamil Nadu including Chennai, West Bengal and Kolkata LSAs.   Two MNP service providers (MNPSPs)-one in each zone-were given licences by the Government for managing the MNP Clearing House (MCH) and Number Portability database.

1.6   To facilitate MNP, the basic business process framework was formulated by TRAI through the 'Telecommunication Mobile Number Portability Regulations, 2009' dated 23rd Sept 2009 and the 'Telecommunication Mobile Number Portability Per Port Transaction Charge and Dipping Charge Regulations, 2009' dated 20th Nov 2009. Some of the salient features of these regulations are:

(i)   MNP is permitted within a LSA only;

(ii)   A subscriber desirous of porting his number will approach the Recipient Operator (the new TSP to whom the subscriber wishes to move);

(iii) Before filling up the Port-in form, the subscriber has to go through eligibility and other conditions and after completing the required verification process, will submit the Customer Application Form (CAF) to the Recipient Operator;

(iv)   The subscriber will generate an UPC by sending an SMS to the number '1900' and fill it in the porting form. In case of J&K LSA, the subscriber has to call the number '1900';

(v)   The Recipient Operator will forward the porting request of the subscriber with key details (Mobile number, Unique Porting Code, date of receipt of porting request) to the respective MNPSP. The MNPSP will in turn forward this request to the Donor Operator for clearance;

(vi) The Donor Operator, after verifying the porting request with respect to eligibility conditions and grounds for rejection permitted under the MNP regulations, will clear or reject the porting request within the time stipulated in the regulations under intimation to the MNPSP;

(vii) In case the porting request has been cleared by the Donor Operator, the MNPSP will co-ordinate switchover of networks by informing the date/time of switchover to both Donor and Recipient Operators and will facilitate disconnection and reactivation of the number at the time of porting;

(viii) At the predefined time of porting, the Donor Operator will disconnect the number and will inform the MNPSP. Similarly the Recipient Operator will activate the number and inform the same to the MNPSP;

(ix) The MNPSP will then broadcast the new Location Routing Number (LRN) to all the operators for the purpose of routing of all future calls to the ported number.

1.7 It is pertinent to note that after implementation of MNP, routing of calls is carried out based on the LRN, which uniquely identifies the TSP's network to which the ported mobile number now belongs. In the pre-MNP scenario, routing of calls used to take place based on Mobile switching Codes allotted to each TSP.

1.8 When a call is made to a ported number, the calling party network first queries its number portability database to find the current LRN of the called party mobile number i.e. in whose network the subscriber is presently available. Accordingly, on the basis of LRN information, call is routed to the concerned TSP's network.

Chapter II: Full Mobile Number Portability

2.1 Presently mobile subscribers are availing the facility of MNP for porting their mobile number within the same LSA. For example, if a subscriber belongs to Andhra Pradesh LSA, he can port his mobile number to any TSP of his choice within Andhra Pradesh LSA only. Accordingly, in the present framework, MNP porting request is processed amongst Recipient Operator, Donor Operator and the MNPSP of the same LSA. Whenever a subscriber changes his LSA, he needs to acquire a new mobile number of that LSA, otherwise he will be under roaming, inviting higher call charges than a normal subscriber.

2.2 The facility of pan-India portability will allow a subscriber to change his LSA without change of mobile number. This means that a subscriber of Andhra Pradesh LSA can port his number to any LSA say Karnataka, Maharashtra, Haryana etc. Implementation of Full Mobile Number Portability would therefore mean acceptance of a porting request by the Recipient Operator from a mobile number belonging to any of the LSAs of the country, irrespective of the fact that the LSA from where the subscriber is porting his mobile number and the LSA to which he wants to port his number belong to the same or different MNP zones.

2.3 There will be regulatory and technical challenges in facilitating such porting across LSAs. Some of the major challenges which need to be deliberated are –

(i) how the request of the subscriber for porting will be processed by the Donor Operator, Recipient Operator and MNPSPs,

(ii) what changes are required in Number Portability Gateway (NPG) of the operator and operator's IT systems etc.; and

(iii) how much time will be required to complete the modifications in the existing systems of the operators.

These challenges are discussed in the succeeding paras.

2.4 In the present framework on receipt of porting request, the Recipient Operator forwards the same to the MNPSP of its MNP zone. However, in full MNP scenario, the recipient operator will have the following options which were described in the pre-consultation paper dated 20th February, 2013.

Approach-1 : Recipient Operator forwards the porting request to the MNPSP of its zone.

Approach-2 : Recipient Operator forwards the porting request to the MNPSP of the other zone to which the Donor Operator belongs.

Approach-3 : Recipient Operator forwards the porting request to the MNPSP of the zone to which original number range holder (the TSP to which the number originally belonged before its first porting) belongs.

2.5 Stakeholders' comments were sought on the most suitable approach for implementation of Full MNP. The stakeholders were divided in their opinion. While the TSPs supported Approach-1, the MNPSPs supported Approach-3. None of the stakeholders supported Approach-2. As there were differences in opinion between TSPs and MNPSPs, meetings were held with the industry representatives viz. COAI, AUSPI and MNPSPs. During the discussions, it emerged that another approach, hereinafter called 'modified Approach-1', which is a combination of Approach-1 and Approach-3, should also be considered. These three possible approaches are discussed below:

A. Approach 1: Recipient Operator forwards the porting request to the MNPSP of its zone

2.6 In this approach, the Recipient Operator submits the porting request to the MNPSP of its MNP zone. For example, if a subscriber of Karnataka LSA wants to port his number from Karnataka to Delhi LSA, he will submit his porting request to the Recipient Operator of Delhi LSA, who in turn will forward the porting request to MNPSP of MNP Zone-1. (which serves Delhi LSA) for porting.

2.7 On receipt of the porting request, the MNPSP of MNP Zone-1 will verify the porting history of the mobile number by querying with the MNPSP of MNP Zone-II(which serves Karnataka LSA). The query is primarily to check whether the porting request meets the following conditions:

   (a) Completion of 90 days in its current operator's network;

   (b) No simultaneous porting is under process for the said mobile number, in the other MNP zone.

If the porting request meets the above two conditions, the MNPSP of MNP Zone-I will seek clearance from the Donor Operator of Karnataka LSA. Further processing of porting request will take place as per the existing porting process.

2.8 From the TSP's perspective, this approach requires minimal changes in the TSP's Number Portability Gateway (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. However, this approach has the following implications:

   i. It will add complexity to the MNPSPs' system as it requires connectivity between the two MNPSPs.

   ii. It will require synchronization of the database of the two MNPSPs for ported numbers, porting history, database tables etc. During discussions, MNPSPs stated that since they used proprietary software, synchronization between the two MNP systems has never been done earlier and would require

extensive development efforts and such a design will be susceptible to errors in a live scenario.

iii. The MNPSPs also stated that new software development work would be required for:

(a) developing mutually agreed interface specification by both MNPSPs for requesting and obtaining the required data;

(b) modification to the current process, including new messages, timers, error codes and reports;

(c) changes in the database design to maintain the data received from other MNPSP;

iv. Real time port-in-progress validation and sharing of broadcast information between the MNPSPs will increases dependency between the two MNP Clearing House (MCH) systems. This will increase system complexity, storage needs and will affect the system performance (in terms of time and processing).

v. Testing in the above approach would be time and resource consuming and also very costly.

B. Modified Approach 1: Recipient Operator forwards the porting request to the MNPSP of its zone and the Donor Operator is responsible to check the condition of 90 days and simultaneous port requests

2.9 In the modified version of Approach-1, the need for connectivity between the two MNPSPs has been eliminated. In this approach, the Donor Operator will be responsible for verifying whether the subscriber fulfils the eligibility condition of 90 days in the existing network and also if the subscriber has made any simultaneous porting request for the same mobile number. As such the responsibility to check the above mentioned two conditions by querying with the MNPSP of the other zone (Approach 1) will move to the Donor Operator. The Donor Operator will be required to build this check in their Number Portability Gateway (NPG). This will require software changes in all the TSP's NPG. However, the advantage of this method is that there will be comparatively fewer

changes requirement in the MNPSP's systems due to the elimination of connectivity between the two MCHs.

C. Approach 3: Recipient Operator forwards the porting request to the MNPSP of the zone to which number range holder of the number belongs.

2.10 In this approach, the Recipient Operator submits the porting request to the MNPSP in whose zone the Number Range network belongs. As all TSPs already have connectivity with both the MNPSPs they will not have to make any changes in communicating with the MNPSP of the other zone. This approach also does not require interaction between the two MNPSPs. Therefore, this method eliminates the need for connectivity /synchronization between the two MNPSPs. However, in this approach, intelligence needs to be built-into the operator's NPG so as to forward the porting request to the concerned MNPSP based on the identity of the number range holder network.

2.11 In this approach the control on porting the mobile number will continue to be with one of the MCHs. Even after a subscriber moves to other MNP zone, all his subsequent porting requests (whether for intra-Circle porting or Inter-Circle porting) will continue to be processed by the MNPSP where his number originally belong. For example, if a subscriber port his number from Delhi (which is in MNP Zone-I) to Bengaluru (which is in MNP Zone-II), he will approach the Recipient Operator of Karnataka LSA for processing his porting request. The Recipient Operator will process the porting request through MNPSP of Zone-I. Subsequently, if the subscriber ports his number within the Karnataka LSA then also, the Recipient Operator to whom the subscriber approaches in Karnataka LSA will process the porting request through MNPSP of Zone-I only.

2.12 All three approaches described above have their pros and cons. Therefore, before deciding the approach to be implemented for full MNP, the Authority decided to form a Focus Group consisting of representatives from MNPSPs and TSPs to give their views on :

    a.   the preferred approach for implementation of full MNP;

    b.   changes required in the existing MNP system;

    c.   cost and time involved in various methods;

    d.   any other optimal feasible solution for implementation of full MNP.

2.13 The deliberations of the Focus Group was coordinated and facilitated by TRAI. After deliberating on all the possible approaches, the Focus Group has unanimously recommended **Approach-3** for implementation of Full MNP in the country. (Report at **Annexure-II**)

2.14 According to the Focus Group, cost requirement in Approach-3 will be the least for both the MNPSPs. For TSPs, there will not be a significant difference in the cost to be incurred in any of the three approaches.

2.15 The Focus Group was also of the view that, irrespective of the method adopted, TSPs will be required to upgrade their existing backend systems such as CRM, mediation platforms, provisioning systems / activation systems, billing systems, number managements systems, recharging platforms, VAS management systems etc, to support complete numbering plan and enable inter-LSA porting. Similarly, MNPSPs will also need to upgrade their MCH to support complete numbering plan and enable inter-LSA porting apart from enhancing billing system, Graphical User Interface (GUI) etc.

2.16 The pros and cons deliberated by the Focus Group have been examined by the Authority. The Authority agrees with the Focus Group's observation that the variation in the costs to be incurred in

the three approaches will not be significant for the TSPs, whereas a significant expenditure will be required for MNPSPs if Approach-1 is adopted for implementation of full MNP. Further, the implementation time for Approach-3 will be much less as compared to Approach-1 or modified Approach-1. In addition,

2.17 Therefore, in the opinion of the Authority, Approach-3 will be the most suitable approach for implementation of full MNP. Though the Focus Group has not clearly mentioned the time frame for implementation of the solution, the Authority is of the opinion that 6 months will be sufficient for operators to carry out the required changes in their existing systems, complete inter-operator testing and implement the solution.

2.18 **Accordingly, the Authority recommends that Approach-3, as described in para 2.10, should be adopted for implementation of Full Mobile Number Portability. The TSPs may be given 6 months time to implement full MNP in the country.**

Changes required in the MNP licence conditions:

2.19 For implementation of full Mobile Number Portability, following licence conditions of MNP licence will require modification/amendment:

(a). **Scope of Licence:**

In the scope of MNP license, the following condition will require modification:

"12.5 The MCH and NPDB established by the licensee shall be used by all telecommunication service providers (both existing & new) (i.e. Basic, CMTS, UAS, NLD and ILD Licensee(s)) of the licensed MNP zone for the purpose of supporting porting of mobile numbers between mobile operators."

If full MNP is implemented with Approach-3, TSPs will have to use the services of both the MNPSPs for processing the porting request. Therefore, the restriction '*the licensed MNP zone*" in clause 12.5 needs to be removed.

(b). **Delivery of service:**

The 'Delivery of Service' condition in clause 18.1 of the MNPSP licence would require amendment -

"*18.1 MNP is to be implemented in each <u>intra</u> Licensed Service Area (LSA)……….*"

In order to provide inter service area MNP service, the word 'each intra' may be modified to read as '**inter and intra**'

(c). **Changes required in the DoT instructions dated 06th May 2009**

DoT instructions dated 6th May 2009 regarding provisioning of MNP will also require modification. Para 3(i) of the said instructions is given below:

" ….*MNP is to be implemented in each <u>intra</u> license Service Area (LSA) as per the schedule notified by the Licensor from time to time…….*"

The word 'each intra' in the para may be modified to read as '**inter and intra**'.

2.20 **In view of the above, the Authority recommends that the DoT should carry out the necessary changes as mentioned in the above paras in the:**

  (i) **existing MNP license; and**

  (ii) **instructions of the DoT dated 6th May 2009, for implementation of Full MNP.**

Upon acceptance of these recommendations, the Authority will carry out necessary changes in the MNP regulations

Identification of inter-service area (STD) calls after implementation of Full MNP

2.21 Presently, a calling subscriber can store the mobile number of the called subscriber in one of the following possible ways in the contact list of his mobile phone handset:

(a)   Storing directly the mobile number of the called subscriber ;

(b)   Storing the mobile number with prefix '0' ;

(c)   Storing the mobile number with prefix '+91' ,

2.22 In the Full MNP scenario, if a called number happens to be a ported number that has been ported to a different LSA, a subscriber calling that mobile number in the case of (a) above, will not be successful as the called number has been ported out of the LSA and the caller has to prefix '0' to this called number – being an inter-service area call. Therefore, by default, the calling subscriber will get 'number does not exist' announcement. In the case of (b) and (c) above, when a subscriber makes a call, though the call will be successful, it will attract applicable STD charges instead of local charges (before porting). There is a possibility that the calling subscriber may not be aware that the number has been ported out to another LSA. This may result in a subscriber complaining of higher charges.

2.23 This issue was raised in the pre-consultation paper and   inputs were sought from stakeholders on the need to inform the calling subscriber through announcement prior to connecting the call. In response, some TSPs suggested that identification of inter-service area ported numbers and playing an announcement thereof, will burden their network resources and will increase call set up time. It was suggested that the subscribers may be made aware of/educated to dial numbers in the +91 format which is the standard dialing format, after Full MNP is implemented.

2.24 On the issue of higher call charges and possible subscriber complaints, most TSPs were of the view that STD rates have plummeted to almost the same level as local call rates; hence, it is not a major issue. Further, in most cases, the calling party may already be aware that the called party has moved to another LSA. Therefore, the onus should lie on the calling party to bear the STD charges, if applicable. One of the suggestions was to have a website so that a query for a given telephone number can be given which will provide information about the current serving operator/LSA for the called number. This facility can be developed by the MNPSPs.

The Authority agrees with the above comments of the TSP and is of the opinion that no action is required on this issue

UPC generation in J & K LSA in Full MNP Scenario:

2.25 As per the existing MNP process, a subscriber is required to generate a UPC before submitting a porting request to the Recipient Operator. In the Full MNP scenario, the location of the Recipient Operator being in a different LSA, the Donor Operator will have to ensure generation of UPC for subscribers under roaming. During the pre-consultation, TSPs informed that UPC can be requested/generated from any LSA (except in Jammu & Kashmir LSA where roaming of pre-paid subscribers is not permitted).

2.26 In the J&K LSA, post-paid subscribers can generate a UPC as in any other part of the country. However, pre-paid subscribers of J&K can generate a UPC only by making a call to '1900' instead of sending an SMS. Therefore, in a full MNP scenario, the issue of generation of a UPC while in another LSA may arise for pre-paid subscribers of J&K as such subscribers are not permitted roaming.

2.27 The solution to this problem is that the subscriber of J&K LSA who wants to port his number to any other LSA can generate the UPC in J&K LSA and then apply for porting to any desired LSA. Alternatively, he can convert his subscription from pre-paid to

post-paid which will enable him to generate a UPC under roaming, and then request porting in any LSA.

Testing Fees for Acceptance Testing

2.28 During the consultation process, the TSPs and MNPSPs have stated that apart from network implementation costs, significant testing costs would be incurred by them.

2.29 The TSPs have requested to waive the testing fee by the DoT for acceptance tests to be conducted for implementation of Full MNP.

2.30 On 24th November 2011, the DoT specified the Acceptance Testing fee to be charged for various types of networks as follows:-

S. No.	Fee to be charged from TSP/ ILDOs/ MNPOs	Unit Price (per network/ per LSA. Per gate way, per site)
1	UASL /CMTS Service Provider	Rs. 307228 (per network per LSA)
2	Basic/ WLL Service Provider	Rs.189360 (per network per LSA)
3	International Long Distance Operator (ILDO)	Rs.189360 (per Gateway)
4	MNPO	Rs.279800 per site (Production/ Disaster)
		Rs.60360 per network per LSA (GSM/ CDMA)

2.31 Before the launch of MNP, DoT had already conducted acceptance test through respective TERM cells of DoT for which testing fee had already been charged as per the above said circular. Now, Full MNP is being mandated pursuant to NTP-2012 and testing is to be carried out for various scenarios due to a change in the process. **Therefore, the Authority recommends that the DOT may consider the request of the operators and reduce the Acceptance Testing Fee to 25% of the Current Fee**.

Chapter III: Summary of recommendations

3.1 The Authority recommends that Approach-3, described in the relevant para (2.10), should be adopted for implementation of Full Mobile Number Portability. The TSPs may be given 6 months time to implement full MNP in the country. (¶2.18)

3.2 The DoT may carry out the necessary changes in the:
   (i) existing MNP license; and
   (ii) instructions of the DoT dated 6th May 2009, for implementation of Full MNP. (¶2.20)

3.3 The DoT may consider the request of the operators and reduce Acceptance Testing Fee to 25% of the Current Fee. (¶2.31)

Government of India
Department of Telecommunications
(Access Services Cell)
Sanchar Bhawan, 20, Ashoka Road New Delhi – 110 001

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To

          The Secretary,
          Telecom Regulatory Authority of India,
          Mahanagar Doorsanchar Bhawan,
          Jawaharlal Nehru Marg, (Old Minto Road)
          New Delhi - 110002

Subject: Recommendation of TRAI in terms of TRAI Act'1997 as amended in the year 2000
          – implementation of "Full Mobile Number Portability" in terms of NTP-2012.

Sir,

          In order to implement the provision of contained in the National Telecom Policy-2012
regarding "One Nation – Full Mobile Number Portability", it is requested to kindly provide
the recommendation of TRAI in terms of section 11(1)(a) of the TRAI Act'1997 as amended in
the year 2000.

                                                      Yours Sincerely
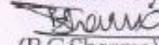
                                                      (P.C.Sharma)
                                                      Director(AS-II)

Report of Focus Group on Full Mobile Number Portability

Background:

In the meeting held on 16.05.2013 in TRAI on the above subject (a copy of minutes enclosed at Annexure), it was decided to form a focus group consisting of representatives from MNP service providers (MNPSPs) and Telecom Service Providers (TSPs) viz., Airtel, Vodafone & TATA, which will give its recommendations on the changes required in the existing systems used for MNP, cost & time involved in the Approach 1, modified Approach 1, Approach 3 (Approach 1, 2 and 3 were discussed in the pre-consultation paper on Full MNP) or any other optimal feasible solution for implementation of Full MNP.

In this regard, focus group consisting of the below members have deliberated the issue in the series of discussions held under the aegis of TRAI on 27th May 2013, 3rd June 2013 and 10th June 2013

    (i)   Sh. SaurabhGulati, M/s BhartiAirtel Ltd.
    (ii)   Sh. MukeshDhingra, M/s Tata Teleservices Ltd
   (iii)   Sh. GowthamGowda, M/s Vodafone
   (iv)   Sh. JanmajoyChhotroy, M/s Syniverse
   (v)   Sh. NareshGambhir, M/s MITS

The focus group has deliberated various pros and cons of Approach1, modified Approach1 and Approach 3 in terms of changes required in the systems of TSPs and MNPSPs and its cost & time of implementation. It was discussed that overall changes & complexities in overall MNP-eco system will be lesser in approach 3 than approach 1 or modified approach 1.

Detailed Analysis of the approaches:

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

In this approach, the Recipient Operator submits porting request to the MNP service provider of its MNP zone. For example, if a subscriber of

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Karnataka service area wants to port his number to Delhi service area, the Recipient Operator belongs to Delhi service area, it will forward the porting request to MNP service provider of Zone-1.

In the above said example, on receipt of porting request, the MNP service provider shall verify the porting history of the mobile number by querying with other MNP service provider. The purpose of verification of porting history is primarily to check whether the mobile number meets the below conditions:

(a) Completion of 90 days in its current operation network.

(b) No simultaneous porting is under process for the said mobile number.

The focus group felt that from the Telecom Service Provider (TSP) perspective, this approach requires minimal changes in the operators' Number Portability Gateway (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 TSPs are thus least impacted. However, this approach adds complexity to the MNPSPs as it requires connectivity between the two MNPSPs thus it has the following implications:

1. A sync-up activity of the between MCH of Syniverse and MITS would be required for ported number, porting history, Database Tables etc. Data synchronisation can be error-prone and time-consuming in a live-system. Sync up between two live MNP systems has never been done before and would require extensive development effort

2. Extensive development work would be required for
    a. Developing mutually agreed interface specification by both MNPSPs for requesting and obtaining the required data;
    b. Modification to the current process implementation, including new messages, timers, error codes and report modifications;
    c. Database design and schema changes to maintain the Data received from other MNPSP;

3. Real time port-in-progress validation between the MNPSP's would introduce
    a. Excessive dependency between the two MCH systems.
    b. Ultimately affecting system availability, performance and port duration

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4. The Testing efforts needed for these two options would be time consuming, resource consuming and would be very costly;
5. Up gradation of Operator Systems and NPG would need to be done
6. The port in progress check will not prevent a rare scenario in which two ports are submitted in two different LSAs and sent to MCH at the exact same millisecond.
7. Sharing of Broadcast information between the Clearinghouses increases dependency between the two MCH systems, complexity, storage needs and reduces performance (in terms time and processing).
8. It will be complex to retrievePort history of a mobile number as it can be ported in either of the MCHs.

Modified Approach 1: Recipient Operator forwards the porting request to the MNP service provider of his zone and concerned Donor Operator is responsible to check the condition of 90 days and simultaneous port requests

In this option also the Recipient Operator submits porting request to the MNP service provider of its MNP zone. However, to eliminate the need for connectivity between the MNPSP, the concerned Donor Operator will be responsible to verify whether the subscriber fulfills the eligibility condition of 90 days in the existing network and also if the subscriber has made any simultaneous porting request for the same mobile number.

In this approach existing role of MCH checking the above mentioned two conditionswill move to operator's NPG. Accordingly, TSPs need to buildthis check at their NPG end. Whereas, the need for connectivity between the two MCHs as required in Approach 1 will be eliminated in this approach. Accordingly, changes required in the MNPSP systems will be comparatively less.

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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.

In this scenario, Recipient Operator will submit porting request to the MNP service provider to which the Number Range belongs. In this case, whenever any subsequent porting request of a mobile number isinitiated, same shall need to be processed through the MNP service provider of the zone where the Mobile Number originally belonged.

As the connectivity for TSPs with both the MNPSPs are already in place, the TSP NPG has the capability to communicate with both the MNPSPs, however intelligence need to be built-in so as to forward the porting request to concerned MNPSP based on the identity of the number range holder network. As it does not require interaction with other MNPSP, therefore eliminates the need for connectivity /synchronization between two MNPSPs.

Cost requirement:

The cost requirement in this approach will be the least for both the MNPSPs. For TSPs there will not be significant difference among the three Approaches.

Time requirement:

In all the three approaches of implementation, TSPs require to review their existing backend systems such as CRM, mediation platforms, provisioning systems / activation systems, billing systems, number managements systems, recharging platforms, VAS management systems etc.

MNPSPs will be required to enhance the MCH to support complete numbering plan and enable inter LSA porting. It will also be required to enhance billing, GUI, SOAP client process, bulk synchronization of inter-LSA ports.

In addition, 4 core test cases are to be carried out for all possible combinations of Recipient Operator and Donor Operator:

- NPO - MSISDN used for NPO can be re-used for call flow testing post port successful.

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- Port Cancelled
- Port Suspension
- Port Termination

Considering the above, the focus group felt adequate time may be granted for preparation and testing for Full MNP.

Recommendation:

Deliberating the pros and cons of all the above mentioned approaches, it has felt that the difference in the expenditure among the three approaches is not significant for telecom service providers, whereas significant expenditure will be incurred for MNPSPs in case of approach 1. Further, time for implementation of approach 3 is much lesser than approach 1 or modified approach 1. In addition, in approach 3, the control of porting of a mobile number will continue to be with one MCH. **Therefore, focus group unanimously recommended approach 3 for implementation of full MNP.**

(SaurabhGulati)
M/s BhartiAirtel Ltd.

(MukeshDhingra)
M/s Tata Teleservices Ltd

(GowthamGowda)
M/s Vodafone

(JanmajoyChhotroy)
M/s Syniverse

(NareshGambhir)
M/s MITS

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Acronyms

Sr. No.	Acronym	Description
	AGR	Adjusted Gross Revenue
	CAF	Customer Application Form
	CMTS	Cellular Mobile Telephone Service
	CRM	Customer Resource Management
	DoT	Department of Telecommunication
	LSA	Licensed Service Area
	LRN	Location Routing Number
	MCH	MNP Clearing House
	MNP	Mobile Number Portability
	MNPSP	Mobile Number Portability Service Provider
	MSC	Mobile Switching Center
	MSS	Mobile Soft Switch
	NPDB	Number Portability Data Base
	NPG	Number Portability Gateway
	SMS	Short Message Service
	STD	Subscriber Trunk Dialing
	TEC	Telecom Engineering Center
	TSP	Telecom Service Provider
	UPC	Unique Porting Code
	UAS	Unified Access Service
	VAS	Value Added Service