Telecom Regulatory Authority of India

Pre-Consultation Paper on
Full Mobile Number Portability
(Pan-India Number Portability)

New Delhi, 20.02.2013

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

Stakeholders are requested to furnish their written comments to the Advisor (NSL), TRAI by 7th March, 2013. The comments may also be sent by e-mail to advmn@trai.gov.in. For any clarification/ information, Shri Sanjeev Banzal, Advisor (NSL) may be contacted at Tel. No. +91-11-23210481 Fax: +91-11-23212014.

Telecom Regulatory Authority of India
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Sub.: Pre-Consultation Paper on Full Mobile Number Portability

Background

1. Mobile Number Portability (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. Presently the facility of MNP is restricted to the licensed service area only.

2. Facility of Mobile Number Portability (MNP) was launched in Haryana service area on 25th November 2010 on pilot basis and the same was launched all over the country on 20th January 2011.

3. Two MNP service providers (MNPSPs) were given licences by the Government for managing the MNP clearing house and Number Portability database. One MNPSP was licenced to manage MNP service in Zone-I (consisting of Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Maharashtra, Punjab, Rajasthan, Uttar Pradesh (E), Uttar Pradesh (W), Delhi and Mumbai Service Areas) while the other MNPSP has been licenced to manage MNP Service in Zone-2 (Consisting of Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, North East, Orissa, Tamil Nadu including Chennai, West Bengal and Kolkata Service Areas).

4. To facilitate the Mobile Number Portability, the basic business process framework of MNP 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:

    - MNP is permitted within the licensed service area;

- Customer to approach Recipient Operator for porting;
- Post-paid customer to give undertaking to Recipient Operator that he has paid the previous bills;
- To make the MNP process simple and affordable to consumer, TRAI had specified
  - ✓ Porting Charge at Maximum of Rs. 19
  - ✓ Porting time of 7 working days, except in J&K, Assam & NE where it is 15 working days
  - ✓ Disruption of the service during change over only upto 4 hrs during night time
  - ✓ Facility to withdraw the porting request within 24 hrs of applying
  - ✓ Customer can move to another operator only after a period of 90 days

5. Presently, the MNP facility is available within the LSA only. However, in accordance with the provisions contained in the National Telecom Policy- 2012 regarding "One Nation – Full Mobile Number Portability", TRAI received a reference from DoT vide its letter dated 27th Dec 2012, seeking the recommendations of TRAI under TRAI Act for full MNP i.e MNP across LSAs. (**copy enclosed at Annex-I**)

Brief description of existing MNP process:

6. In the existing framework for porting of a mobile number:
   - Subscriber desirous of porting his number approaches Recipient Operator (new operator to whom the subscriber wish to move).
   - Before filling up of Port-in form, he goes through eligibility & other conditions and after completing the required verification process, submits Customer Application Form (CAF) to the Recipient Operator.
   - Subscriber generates Unique Porting Code by sending a SMS to the no. '1900' and fill it in the porting form. In case of J&K LSA, subscriber has to call '1900'.

- The Recipient Operator forwards the porting request of the subscriber with certain key details (Mobile number, Unique Porting Code, date of receipt of porting request) to the respective MNP service provider. The MNP service provider in turn forwards this request to the Donor Operator for clearance.
- The Donor Operator verifies the porting request with respect to eligibility conditions and grounds for rejections, permitted under the MNP regulations and clears or rejects the porting request within the time stipulated in the regulations under intimation to the MNP service provider.
- In case the porting request has been cleared by the Donor Operator, the MNP service provider co-ordinates switchover by informing the date/time of switchover to both Donor and Recipient Operators and facilitates disconnection and connection of the number at the time of porting.
- At the predefined time of porting, the Donor Operator disconnect the number and inform to MNPSP. Similarly the Recipient Operator activates the number and informs the same to the MNPSP.
- The MNPSP then broadcasts new Location Routing Number (LRN) to all the operators for the purpose of routing of all the future calls from the ported number.

Routing of calls in MNP scenario:

- It may be noted that after implementation of MNP, routing of calls is carried out based on the Location Routing Number (which uniquely identifies a service provider's network) prefixed to the 10 digit mobile number. In the pre-MNP scenario routing of calls used to take place based on Mobile switching Codes.
- When a call is to be 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 service provider's network.

Full Mobile Number Portability

7. The National Telecom Policy-2012 (NTP-2012) envisages that the facility of Mobile Number Portability should be available nationwide, instead of limiting it within a service area, so that a subscriber is able to retain his mobile number even if he moves from one service area to another, irrespective of the service provider and the technology.

8. As discussed earlier, there are two MNP service providers for managing the MNP clearing house and Number Portability database. The country has been divided into two zones each catering to 11 service areas each and each zone is managed by one MNPSP. The MNP service provider coordinates the activities during the porting process. In the present framework, as the MNP is restricted within the LSA, the porting request is processed among Recipient Operator, Donor Operator and the MNP service provider of the same service area of a particular MNP zone. Implementation of Full Mobile Number Portability would mean acceptance of porting request by the Recipient Operator from a mobile number that may belong to other service area also. Therefore, to implement Full Mobile Number Portability, issues relating to processing of porting requests, routing, charging, testing etc need to be identified and addressed.

A. Submission of Porting request by the Recipient Operator

9. An inter-service area porting request could be for porting mobile number from one service area to another service area within the same MNP zone or across the MNP zones. The issues that may arise in carrying out such inter-service area porting are discussed under the following two scenarios :

- MNP request is for shifting of a mobile number to another service area within same MNP zone.
- MNP request is for shifting of a mobile number to another service area across the MNP zone.

a. MNP request for shifting to another service area within same MNP zone:

10. In this scenario, though, the Recipient Operator and Donor Operator involved in porting of a mobile number belong to different service areas, but they operate in the same MNP zone. Therefore, the porting will be managed by the same MNP service provider. For example, if a subscriber wants to port out from a service provider of Gujarat service area to a service provider of Mumbai service area, this porting request will be processed through MNP service provider of Zone 1 as both the service areas are in MNP Zone 1. In this scenario, porting can take place with the existing infrastructure with configuration changes. As the porting history of the subscriber is available with the concerned MNP service provider, it will be able to check the eligibility condition of 90 days. However, in this scenario the MNP service provider will not know if the same subscriber has also requested for porting in other service area in the other Zone and that porting request of such subscriber is under process, as there is no direct connectivity between the two MNPSPs. To avoid such probability, it will be necessary to have connectivity between the two MNP service providers. Accordingly, changes will be required in the MNP process.

b. MNP request for shifting to a service area of other MNP zone:

11. In this scenario, Recipient Operator and Donor Operator involved in porting of a mobile number not only belong to different service areas, but are also in different MNP zones. For example a subscriber wants to port out from a service provider of Delhi service area to a service provider of Karnataka service area. The Donor Operator belongs to Zone1 whereas the Recipient Operator belongs to Zone 2. In such a

scenario, there can be three possible approaches for the Recipient Operator to forward the porting request of the subscriber to carry out inter-service area porting:-

- Recipient Operator forwards the porting request to the MNP service provider of his zone.
- Recipient Operator forwards the porting request to the MNP service provider of the other zone to which Donor Operator belongs.
- Recipient Operator forwards the porting request to the MNP service provider of the zone to which original number range holder (the service provider to which the number originally belonged before its first porting) belongs.

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

12. In such a case, with the existing connectivity the Recipient Operator can only submit the porting request to the MNP service provider of its MNP zone. In this example the Recipient Operator belongs to Karnataka, therefore, it will forward the porting request to MNP service provider of Zone 2. In such a situation the MNP service provider will be required to seek porting history from the other MNP service provider i.e from MNPSP of Zone 1. This involves connectivity of databases of the two MNPSPs and change in the existing MNP process as well as porting timelines. Apart from the requirement of connectivity between the two MNPSPs, issues related to synchronisation between the two MNP databases will also need to be addressed.

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

13. In this case the Recipient Operator will submit the porting request to the MNP service provider of the Zone to which the service area of the

Donor Operator belongs. In the above example, Recipient Operator of Karnataka service area, falling in Zone 2 will submit porting request to MNP service provider of Zone 1 who is providing MNP service in Delhi service area. To avoid the possibility of having any other porting request process of the same number in the other zone, connectivity between the MNPSP's database will be required. Similarly synchronization issues between two MNP service providers need to be addressed. Changes in the MNP process, timelines etc will also required. In this approach, the scope of area of operation of MNP service provider would increase to Pan-India. Accordingly, changes in the license conditions of the MNPSPs will also be required to be carried out.

(iii) 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.

14. In this scenario, Recipient Operator will submit porting request to the MNP service provider to which the service area of the Number Range Holder belongs. In this case, whenever any subsequent porting request of a mobile number takes place, the same shall be processed through the MNP service provider of the zone where the Mobile Number originally belonged. This will eliminate the connectivity requirement between two MNP service providers. As the porting history is available with the same MNP service provider, it can perform all validations. Further this will require no modification in existing process and timelines apart from augmentation of the existing capabilities of the MNP service providers and enhancing the scope of area of operations of MNP service providers to Pan India. Accordingly necessary changes in the license conditions of the MNP service providers will have to be done.

B. Timelines of MNP process:

15. In the existing MNP regulations the time period for completion of porting for J&K, NE & Assam is 15 working days whereas in rest of the service areas it is 7 working days. Similarly validity of Unique Porting Code is longer in these service areas. Therefore, in the full number portability scenario, review of the porting timelines will have to be done.

C. UPC generation:

16. As per the existing MNP process, subscriber should generate Unique Porting Code (UPC) before submitting porting request to the Recipient Operator. In Full Mobile Number Portability scenario, the service providers will have to ensure generation of UPC for subscribers under roaming. In J&K service area, in view of the fact that SMS is not allowed for prepaid mobile connection, the Government has decided that for the purpose of generation of UPC, subscribers will make a call to 1900 instead of sending SMS. Therefore, for subscribers of J&K, the service providers will have to ensure that calls made to '1900' while roaming in other service areas, results in UPC generation by the Donor Operator.

D. Identification of inter-service area (STD) calls:

17. In the present system, a calling subscriber can store the called number of a subscriber in the following possible ways in the contact list of his mobile phone handset:
    a) Storing directly the mobile number
    b) Storing the mobile number with prefix '0'
    c) Storing the mobile number with prefix '+91'

18. In the Full MNP scenario, if a called number is a ported number, which has been ported to a different service area, a subscriber calling

that mobile number in the case of a) above, cannot 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 intra-service area call. Therefore, by default, the subscriber will get '*number does not exist*' announcement. Therefore, after implementation of full Mobile Number Portability, in such cases, a clear distinction in the announcements between '*number does not exist*' *and* '*number has been ported to other service area*' will have to be made.

19. In the case of b) and c) above, when a subscriber makes a call, though this 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 service area. This, may result in subscriber complaints of higher charging. Therefore this issue need to be addressed as to how the subscribers are made aware of the fact that the called number has been ported out of the LSA, before the call gets mature.

E. Testing in case of inter-service area porting

20. During the commissioning of MNP services in January 2011, various scenarios were tested for porting from Donor Operators to the Recipient Operators. However, all the tests were designed for porting within a service area. In case of Inter-Service area porting, testing for porting from Donor Operators to the Recipient Operators in inter-service area cases will also need to be carried. Various permutation and combinations for the same need to be built in the testing procedure.

Inputs from stakeholders for the implementation of Full Mobile Number Portability, not limited to the following points, are required:

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.
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.
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.
4. Comments may be provided on mechanism to be adopted for routing of calls if the number has undergone inter-service area porting.
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
6. Minimum Possible testing scenarios covering the various possibilities of porting.
7. Comment on any other relevant point related to full number portability may be provided

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Annex-I

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)