Mobile Number Portability in India

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Abstract - Mobile number portability is a facility provided by the operators to the mobile subscribers that permits them to switch over there operators without changing his/her telephone number. Under MNP, the subscriber will have the option to hold the same phone number issued by his previous operator. This paper exposits and canvasses the MNP routing mechanisms and its implementation costs and procedures. Cost recovery issues are discussed in this paper from a technical perspective. Due to the surplus mobile users across the country, this portability scheme was direly needed and this long awaited portability scheme was launched formally by the prime minister of India on 20th January 2011. This paper introduces the concept of number portability, explicates its issues, challenges, procedures and its implementation in India.

Keywords- Mobile Number Portability (MNP), Issues, Challenges, Procedure, Implementation, Effects.

I. INTRODUCTION

MNP has finally arrived in India in january-2011 after long years of waiting. A draft of regulations has been issued by the telecom regulatory authority of India (TRAI) for the introduction of MNP across the country. It permits the mobile subscribers to switch over from one access service provider to the other irrespective of the change in mobile number or technology[6]. Most of the countries around the globe with mature telecom operations have successfully implemented this portability scheme and India too, with surplus mobile subscribers direly needed this.

There are different types of Number Portability are:-

1. Operator/Service Provider Number Portability
   - Local Number Portability:-The subscriber retains its number when changing from oneoperator/service provider to another. E.g. the porting of existing directory number between fixed operators.
   - Mobile Number Portability:-Porting of mobile telephone numbers between wireless operators.
   - Non-geographical Number Portability:- Porting of 'service' numbers, e.g. '800'- numbers.

2. Location Number Portability
   The subscriber retains its number with the same operator when moving within the service area. Both move within the local area and move outside the local area. This can be combined with Service Provider Number Portability.

3. Service Number Portability:-
   The subscriber retains its number when changing service type.

II. ISSUES GOVERNING MNP

The issues regarding MNP relate both the mobile operators as well as the government of India.

A. PRACTICAL APPLICATION BEHIND MNP

Porting mobile number is a complicated process. A lot has to be done behind successfully implementing this process. Overpriced instrumentation, ascertaining the checks and balances by constituting a third party is required to follow-up these operations

B. WORRIED OPERATORS

The obligatory mobile operators have been in the room for a long time and so the number of dissatisfied customers is in direct proportion. When new companies become a part of the operator space, they have nothing to lose with MNP. Those operators who have been in the scenario from a longer time are worried of losing their customers. Also, the prized phone number sequences (ex. 9876543210) can be lost to other operators[1].

C. CONFINEMENT PERIOD

When a mobile subscriber ports a number, he/she is locked in to the new operator for 3 months(90 days) and if one wishes to change his/her operator again, one has no option but to wait more for 90 days.

D. INTER-CIRCLE ISSUES

The government of India has mentioned the MNP within a circle only. So one cannot maintain the possession of the same mobile number if one moves from one state to another.

E. MOBILE NUMBER IDENTIFICATION

Before the MNP implementation, one could easily identify the mobile operator and its attributes by looking at first few digits of the mobile number. But after the MNP implementation, the
problem of identifying the operator will become much obdurate.

III. CHALLENGES TO MNP

Cost aspects like raising the standard of the existing networks, software modifications and adjustments, evaluation of effective routing mechanisms are the areas where mobile operators need to concentrate. Operators face tough challenges while operating the MNP. The operator's needs to ascertain that the new technology would be effective in addressing the settlements related to it. Furthermore, in the countries where 'circle' concept subsists, the MNP need to unite the difference between local and national portability and also a balanced sense of interaction among the operators within the circles[4]. Besides, operators need to assure that the time within which a subscriber can be ported in/out is not notably greater than the time required to obtain a new connection. A protracted porting period is likely to produce extra costs for the subscribers in porting and will simply deter them from porting at all. Although MNP faces a stiff challenge in terms of costs and implementations, it will progress in Indian market due to mature telecom market and increased rivalry.

The major challenges of number portability are: Costs involved in upgrading the network infrastructure to support number of portability. Costs involved in maintaining the upgraded infrastructure. Costs involved in the usage of network resources to route the calls to the ported number.

IV. PROCEDURE TO PORT A NUMBER IN INDIA

- SMS PORT<SPACE><YOUR 10 DIGIT MOBILE NUMBER> TO 1900.
    E.X PORT 9465064033 AND SEND TO 1900.
- Subscriber will get an SMS with this UPC (unique porting code).This UPC will have to be maintained along with your mobile number and a third party called MNP SERVICE PROVIDER (In India we have SYNIVERSE TECHNOLOGIES AND TELCORDIA as MNP SERVICE PROVIDERS).This UPC comes with an expiry date and one need to apply to the new operator within the pre-determined time.
- Fill up an application form at the nearest retailer and get the SIM for new operator. Just ascertain that it has your UPC code, a copy of subscriber's valid address and identification, passport size photographs.
- Get your new SIM card[3].
- The new operator will covenant with the existing mobile operator and ask for consent. If sanctioned, the new operator will set a time for porting and pass this to the service provider and the existing mobile operator.
- On the specified date and time, the current operator will disconnect the number and pass the message to MNP PROVIDER. During porting, the mobile number of the subscriber will be dear for about two hours and luckily, this will happen in late night hours only.
- The new operator will now claim for the ownership of that number and MNP would be maintained.

Figure1: Procedure to port a mobile number

V. IMPLEMENTATION OF MNP

In India, MNP has been implemented on zonal basis. Whole of the Nation has been divided into two zones.

Zone 1 includes: Delhi, Mumbai, Maharashtra, Punjab, Haryana, Gujarat, Rajasthan, Uttar Pradesh (east), Uttar Pradesh (west), Himachal Pradesh, Jammu and Kashmir[2].

Zone 2 includes: Kolkata, Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, west Bengal, Bihar and Orissa.

STEPS FOR MNP IMPLEMENTATION
- The retailer pre-registers the MNP.
- The call center seeks for the clarification and negation of MNP procedures
- The website submits this pre-registration code and applies for new contract.
- Donor operator negates the contract after validating the code
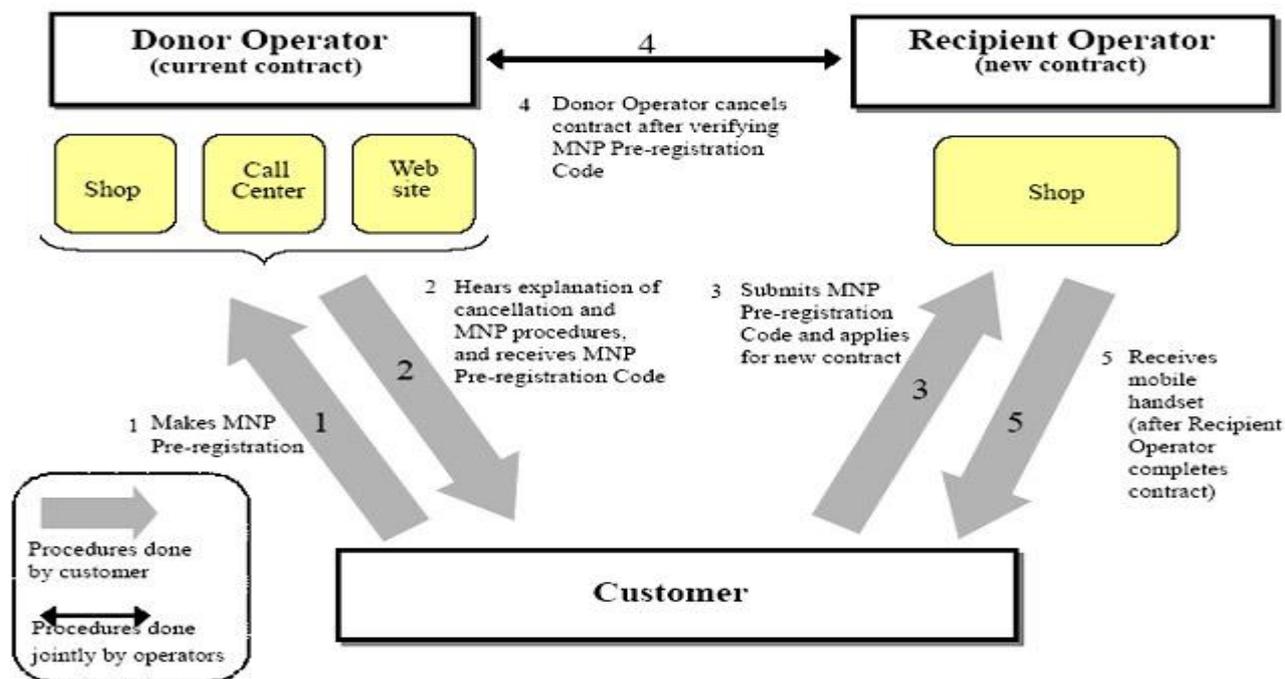- Finally, the retailer perceives the mobile handset

Figure2: Block Diagram of MNP implementation in India

VI. EFFECTS OF MNP

A. OF SUBSCRIBER BASE
The growth rate of subscribers will decelerate. Now the thing that matters more will be the "growth of more people taking up the SIM" than "same person taking up more SIM's"[9]. As a result of this, The ARPU (AVERAGE REVENUE PER USER) will naturally outgrow.
EXPANSION

B. AVERAGE INCURRING COST OF SUBSCRIBER
If a subscriber does not does not recharge his/her SIM in 6 months, SIM gets deactivated and to port a number, one needs to be an operator's customer for three months. Thus the average life of SIM would decrease from six to three months and thus the acquisition costs that are predetermined by the Telecoms will fall to the ground.

C. INCREASE IN RETAILERS INCOME
In the last half decade, the retailer's margin has seen a drastic margin from 13% to somewhere below 4%. But after the MNP implementation. The telecom industry is again in talks for a satisfactory retailer's margin.

D. IMPROVED SERVICE
Mainly quality and cost are the two parameters that differentiate between the operators. After MNP implementation, since every operator is now at a common price point, the key differentiator will naturally come from better QoS.

E. SALE OF DUAL SIM HANDSETS
Dual SIM phones permits the subscribers to retain their old numbers for incoming and the new one for better outgoing call rates. Since MNP allows number retention, so dual SIM handsets may see a drop in its sale[5].
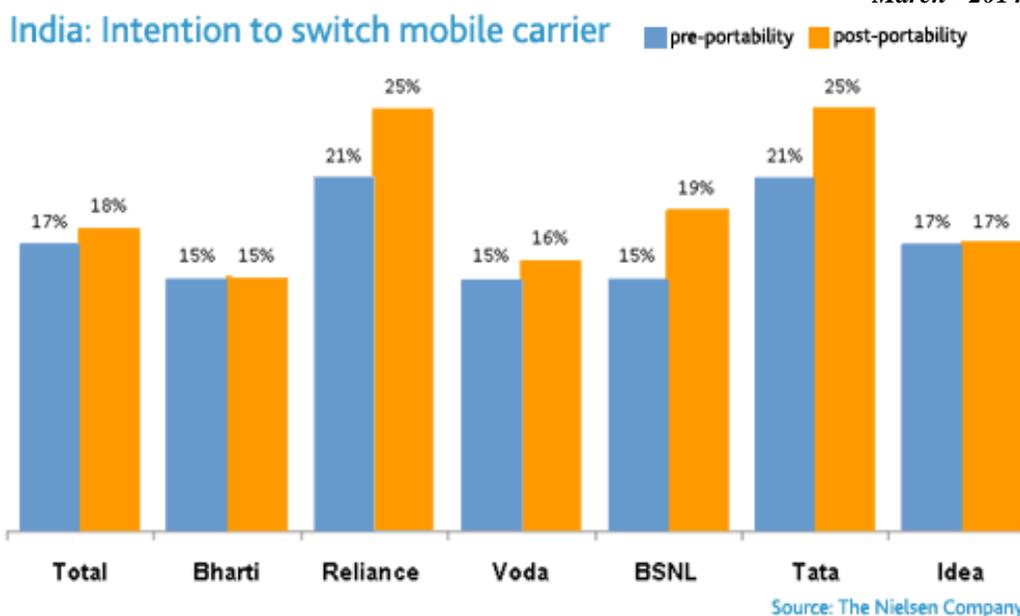
Figure3: Bar Graph Representation the Pre- and Post- Portability Effects on Indian Telecom Industry

VII. MNP: A BOON FOR THE CUSTOMERS

After the MNP implementation, the customer will be treated like a "KING" the network providers. The service will be available to both pre-paid and post-paid customers. Some of the key customer benefits are:

- MNP is the basic perquisite for rivalry in telecom industry. This naturally benefits the customer.
- All the wasteful burdens of updating the address books, altering the contact lists and remembering the new numbers are removed[6]. Thus the contacts can be easily maintained without any disrupt in the flow of business.
- MNP will definitely compel the mobile operators to attract and retain the customers by different schemes like: reducing the call rates and SMS rates, improved customer services and to open up new loyalty schemes, improved network coverage and launching other customer gratifying applications.

The TRAI (Telecom regulatory authority of India) desires to leave no stone unturned to successfully implement the number portability scheme in India.

VIII. MNP: DETRIMENTAL IN SOME SENSES

- MNP allows a change in technology viz. from GSM to CDMA and vice versa[8]. This will require changing the mobile handsets that results in expense overhead.
- After porting the unexpended funds are not transferred and this adversely affects the prepaid mobile customers.
- A lock-in period of 90 days has been set by TRAI that is if a subscriber does not find the services to be useful, he can do nothing but to wait for more 90 days to switch it over again.
- The notable disadvantage is that the portability exists within circles. The subscriber is not permitted to port within different states.
- Number identity associated with a particular operator is lost.
- Many clumsy initial clerical formalities are required to properly utilize this facility.

IX. FACTORS INFLUENCING THE SUCCESS OF NUMBER PORTABILITY

- **Subscriber Awareness:** Subscribers needs to be aware of Number Portability (NP), its advantages, and how to go about it**.**
- **Simplicity:** NP success mainly depends on the simplicity of the process. There could be many rules that the regulator may impose[7]. For example, a number can't be ported in the first 6 months of the subscription. Such forced conditions hamper the success of NP**.**
- **Speed:** Speed is one of the major factors that affect the success of NP. Service level agreements should be stringent enough to minimize the time taken to port the number to other network. This increases the level of customer satisfaction
- **Cost factor:** NP success also depends on the cost of porting the number. The lower the cost, the higher will be the rate of porting. The cost here refers to the amount that the subscribers need to pay to port their number to some other service provider's network. This all depends on the regulatory   authority that decides who bears the cost of porting.

X. CONCLUSION

This paper gives us a technical perception of MNP and its regulatory features. The MNP is relatively new to India but it definitely holds a lot of scope in the telecom industry of India. This paper reflects the vital role played by the MNP invigorating the competition of telecom market. To be successful in this competitive telecom market of India, the

operators needs to carefully analyze the telephony infrastructure, selecting the best solution for the customers need and exploit the benefit of ever-increasing customer demands.

REFERENCES
[1]   Indian Journal of Community Medicine, vol 35, No. 2, 2010, p 339-341.
[2]   Analysis of number portability and challenges in implementation in India, http://www.iimahd.ernet.in
[3]   Telecom regulatory authority of India, www.trai.gov.in
[4]   ITU-T, Series Q Supplement 5, "Number Portability-Capability Set 2 requirements for service provider portability (Query on release and Drop back,"Mar.1999)
[5]   Shin D, A study of mobile number portability effects in the United States, Telematics and Informatics, vol 24,No.1, 2006, p 1-14
[6]   Walid Mazi, India launches mobile number portability, McClatchy - Tribune Business News, NEW DELHI, Jan 21, 2011.
[7]   Khan A.F (2011) "Mobile Number Portability Challenges and Solutions" Journal of Emerging Trends in Computing and Information Services Vol. 2 retrieved from http://www.cisjournal.org on August 12, 2012.
[8]   Sutherland Ewan, "Mobile number portability", Info, vol 9, No. 4, 2007, p 10-24.
[9]   Gans J S, King S P, and Woodbridge G, Numbers to the people: regulation, ownership, and local number portability, Information Economics and Policy, vol 13, 2001, p 167-180.