Rochester Institute of Technology

Graduate Project

Mobile Number Portability in India

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World’s lowest call rate and fastest growing subscriber rate is what differentiates Indian Telecom market from the other country’s market\(^1\), yet a mobile penetration rate of as low as 37.94\% (as in April 09)\(^1\). The reason for this can be considered the rural areas where the majority of population resides and the access providers find it hard to provide services at these remote places. Another major reason is the economic status of the people. Still this is a growing market with around 12-13 access providers spread across the nation while a few others only providing services in selected few areas.

The regulatory Authority, TRAI (Telecom Authority of India), in the year 2006 among other plans and reforms came up with the plan of implementation of Mobile Number Portability (MNP). It was suggested that by April 2007, MNP will be implemented. But it has been delayed due to several reasons, the major ones among them being,

- Opposition from the mobile service providers asking TRAI to implement fixed number portability before MNP.
- Regulatory authority taking a lot of time in the analysis and planning.
- Delay due to bidding for the MNP service providers.
- Opposition from the Department of Telecommunication stating the technical difficulties in MNP implementation.

And now after a series of consultations and surveys, the ground is all set with the MNP to be launched and according to TRAI, MNP will be launched on 31\(^{st}\) Dec 2009 in metros and category ‘A’ service areas (which include Delhi, Mumbai, Kolkata, Tamil Nadu, Karnataka, Maharashtra, Gujarat and Andhra Pradesh) and by 20\(^{th}\) March 2010 in other B and C class service areas. Telecordia’s joint venture company MNP Interconnection Telecom Solutions India Pvt Ltd (MITS) will manage India’s Mobile Number Portability solutions in South and East of India, while Syniverse Technologies in the North and the West\(^1\).

Absence of number portability is a major reason for customers not being able to switch from their existing access providers even if they are not satisfied with the services of the operator specially to the business person, for whom a change in number means communicating the new number to the clients and other business associates and also requires modification in stationary and other media through which the number is displayed. This can be taken as one of the reason
for decrease in the level of competition as the service providers know that the customers will not move to other access providers.

On the contrary the access providers opine that MNP is unnecessary as the cost structure of the Indian Telecom sector was the highest with lowest tariffs and this would only increase network costs, forcing them to divert resources from their current plans. They also suggested for the implementation of fixed number portability before MNP was implemented as fixed line services are the one which need competition with only two companies BSNL and MTNL having over 94% market share. TRAI’s answer to this argument was that in the current scenario where mobile usage is much higher compared to the usage of fixed line services, MNP was more beneficial for the customers. It also gave the reason that the incumbents’ legacy system would not be efficient enough for the implementation of FNP.

Amidst all this on September 23, 2009 TRAI released what it called the “Telecommunication Mobile Number Portability Regulations, 2009”. This regulation clearly defined the roles of each of the involved operator, criteria for a customer to be able to use MNP, technology to be used for implementing MNP and other details based on the inquiries and comments the authority had received from the different parties involved in this project. Here is a brief summary of the regulation based on the original document².

It has been made mandatory that all the service providers or operators provide MNP to their customers. By Nov 26, 2009 all the mobile service providers should be up with the facilities to automate the porting process automatic and SMS based. A set of criteria for customer’s eligibility to apply for porting are specified which state that a customer could only submit a porting request if it’s been ninety or more days since the activation of the number if the number has not been ported earlier or the same duration since the previous porting request. Some other legal clauses and bill clearance conditions have also been included.
A Flow Chart depiction of steps involved for porting a number. Starts from a subscriber raising a porting request to Recipient Operator and ends with number activated in Recipient’s network.

A subscriber may within twenty four hours withdraw the porting request by informing the Recipient Operator.
What Access Providers think of MNP

Initially not in favor of MNP, as it would reduce the profits for them, Access Providers tried hard for MNP not to be implemented. Implementation of MNP will not be a simple change for the Access Providers. Any of the providers’ system working on Mobile Identity number or Mobile Directory Numbers will be affected. Processes and systems that would be influenced: Billing, customer service, order activation, call delivery, roamer registration & support, SMS center, directory assistance, caller ID, calling name presentation, switches, Home Location registers and visiting location registers.

Who is likely to switch

According to a recently conducted study by the Nielson company in which 12500 mobile users across 50 centers were surveyed, close to one in five (18%) mobile subscribers would change their mobile operator if MNP is introduced in the market. Based on the access providers, one in four Reliance & Tata Indicom subscribers would like to change operators. These access providers would have the highest porting rate based on the survey. The study also says that subscribers with higher spending, postpaid customers and business subscribers show greater tendency to switch on introduction of MNP.

“According to Shankari Panchapakesan, Executive director, Telecom Practice, The Nielsen company, “Mobile number Portability represents a powerful opportunity for the operators to drive in-bound porting of high-value subscribers provided they have a good understanding of who is more likely to switch and why. MNP can be leveraged by operators through smart targeted marketing and promotion to coincide with the introduction of this facility.’”

How Calls will be handled after MNP

All Call Query would be the method that would be used to handle calls after MNP is implemented.

All ported mobile numbers will be maintained in a “Local Number Portability Database”. Every Access Provider will be assigned a code called “Location Routing Number”. The MNP service provider will maintain a centralized database which would contain all the mobile numbers of the nation and their corresponding current Access Provider’s location routing number. When a call is made, the dialer’s network which has access to the MNP service
provider’s database will query the database to find the dialed number’s Access provider. Based on the information the call is progressed further. This solution is an expensive one but the authority feels that in long Term it would be a stable one. The setup time of each call, whether the dialed number is ported or not is increased and would be inefficient in case the porting volume turns out to be too low.

![Diagram of All Call Query Method]

**Fig. All Call Query Method**

**Different Costs and Charges Involved**

Implementation of Number Portability would incur costs to different stakeholders as the regulatory authority is would not be paying any of the costs involved. The different costs and who would be paying are:
• Setting up of Location Number Portability Database which will be two in number, one main and the other disaster recovery. These will be maintained by the Mobile Number Portability Service Providers.

• A fail proof Mobile Number Portability gateway from the Access Provider’s system to the main and disaster recovery sites of the database. The cost for this will be born by the Access Provider.

• A “Per Port Transaction Charge” to be paid by the Recipient Operator to the Mobile Number Service Provider.

• The Donor operator has to maintain a record of all ported out numbers and rejected porting requests for at least a year.

• The Recipient Operator has to keep record for a minimum of one year the record of all rejected porting requests.

• The subscriber willing to avail Mobile Number Portability, has to pay to the Recipient Operator a nominal fees (not finalized yet) as the “Porting Charges”.

• A “Dipping Charge” to be paid by the Access Provider to query response system to Mobile Number Portability Service Provider to obtain the correct Location Routing Number. The access provider has to query the database for calls, missed calls and even sms.

**Issues not covered by TRAI**

The tariffs for calling vary if a person calls in the same Access Provider’s network as his own or any other access provider. Also in India the calling party is charged for the call. When the Mobile Number Portability is implemented, the called party might not be aware if the dialed number has been ported to some other access provider. So the tariffs that will be applicable to him would not be clear. This is termed as “Consumer ignorance Problem” in some of the case studies as the consumer is not aware of the billing that is being done on his mobile usage. This can lead to distortion of the tariff structure of calls progressed across networks. This issue has not been covered in the regulation and needs to be looked into as it is a very important consumer concern.

Some of the possible solutions as applied in some other countries are using an acoustic signal to alert the called subscriber that the call is terminating into different network due
to porting out of the called subscriber, or the verbal announcement of the tariff structure of such calls or having a toll free number or toll free SMS facility for customer to check if a number is ported out or not. Whatever method is applied, will only incur extra costs in the implementation of the number portability.\textsuperscript{5}

\textbf{Will MNP be a success}

The success of MNP can be viewed in terms of the porting rate. Porting rate depends on a number of factors. Considering that today a person can get a new connection at lesser than $1, if a high portability charge is applied, porting rate cannot be expected to be high. And it has been decided that the porting charge will be somewhere between INR 20 to INR 200 (\$0.40 to \$4). Another important factor will be how convenient it is for an individual to port a number. As of now seeing the regulation, MNP doesn’t seem to involve much hassle for the customer to apply for porting. The time taken for porting is also an important factor as a customer will definitely compare the porting time with the time taken to get a new number activated as it just takes a few hours to activate a new number. As per the regulation, the porting process should not take more than 4 working days in all licensed service areas except in the case of Jammu & Kashmir, Assam and North East where the maximum time allowed is 12 days. Exit barriers also an important consideration but since exit barriers do not exist in Indian market, porting rate can be expected to be high. Churn rate will also affect the porting rate. The Churn rate in India is very high and even if a part of the churning subscribers opt for porting, MNP can be expected to be high. The number of access providers in a particular area will also be a major market dynamic as higher the access providers, more the offers to lure customers.

Taking all this in consideration it can be said that it is very likely that MNP will be a success as the porting charges seem to be affordable compared to the costs that would be incurred in switching access provider.

References

1. Telecom regulatory Authority of India, \texttt{www.trai.gov.in}
2. Telecommunication Mobile Number Portability Regulations, 2009
   http://www.trai.gov.in/WriteReadData/trai/upload/Regulations/89/Regulations23sep09.pdf
5. Analysis of Number Portability & Challenges in Implementation in India
   http://www.iimahd.ernet.in