Mobile number portability (MNP): service providers perspective (pros & cons)

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Mobile Number Portability (MNP): Service Providers Perspective
(Pros & Cons)

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ABSTRACT:

Lock in of mobile number series with Telecom Service Providers has always been an impediment to ushering in healthy competition between the mobile carriers. While India has seen a rapid growth in the penetration of Telephony services, the same exponential growth is seen lacking when it comes to quality of service offered or openness of transaction with the large players. Though the initial enrolment of subscribers to specific carriers has an atmosphere of enthusiasm and a promise of quality around it, subsequently there is marked degradation in quality of service. Customers are discouraged to switch service providers as that would involve changing numbers and possibility of lost calls for the end user.

Mobile Number Portability (MNP) is a technology that enables subscribers to switch their service providers while retaining their mobile numbers. Deceptively trivial in terms of nomenclature, the underlying technology that realizes this is quite complex and neatly integrated into the telephony infrastructure. The other significant aspect is the fact that MNP has reached the Indian shores in mid 2010. The TSP's have been mandated to adopt MNP and it has created lot of action and opportunity. The country as of now has 800 million mobile subscribers, as quoted by TRAI. Going by the Telecom Regulatory Authority of India (TRAI) guidelines, mobile users will be allowed to use the same mobile number even if providers use different mobile technologies like CDMA (code division multiple access) or GSM (Global System for Mobile Communications). This paper is thus looking into the pros and cons of MNP for Telecom Service Providers.

CATEGORIES AND SUBJECT DESCRIPTORS

• C.2.3 Network Operations

  • *Network management*

GENERAL TERMS

Management, Documentation, Theory

Keywords: Mobile number portability, Service providers, MNP, TSP,

1. INTRODUCTION:

Mobile Number Portability offers the subscriber the flexibility to retain his telephone number even when he switches to another operator in a service area. Number portability is a feature that allows a mobile subscriber to use the same number across different service providers. The person/user has the liberty to opt for any service provider without the time-consuming exercise of letting the rest of the world know about the change of number Very often subscribers do not switch to another operator even if the competitor is offering lower tariff and better services because they do not want to change their number. In a consultation paper issued in July 2005, TRAI said that subscribers and operators would benefit from the introduction of the number portability system. The initial reaction of the introduction of MNP in Haryana indicates minimal churn in early days but Haryana circle represents only 1% of the total subscriber base and may not

give a right indication. Less than 2% prepaid subscribers and 4%-5% post-paid subscribers in Haryana circle are expected to opt for MNP noting the current porting requests in 14 days. Tata Teleservices have got about 21% of the customers who have opted for MNP while for RCom out of the total movement on post-paid, 80% are port in (those who want to join RCom). In value terms, this is 73% of the total value of port-ins and port-outs (those who wish to leave RCom) put together. RCom has been concentrating on getting only high paying post-paid customers as ARPU in this category is equivalent to 10 pre-paid subscribers while Vodafone Essar is assertive on retaining existing customers and attracting fresh high end customers. Post pan-India MNP launch we might get a better view of its effects on different service providers and 3G launch at the same time would also play important role in MNP.

This will have positive and negative Effect on the Service providers. The objective this paper is to find and discuss Pros and Cons.

Table:1.1 MNP Implementation Estimates

MNP Implementation Estimates – All Call Query Model		
	Using SS7	**Using SS7 / IP via Sigtran**
Total Cost for set up pan-India	**$208.6 Mil**	**$182.97 Mil**
CO Upgrades Switch Upgrades Switch software upgrades Additional Signaling circuits	$175 Mil	$156.4 Mil
Software Costs Order Management Sys Upgrade Provisioning and Billing Database Upgrades	$22.5 Mil	$22.5 Mil
SCP / STP costs	$10.4 Mil	$4 Mil
Total cost set-up pan-India Rs. Cr.	938.7	823.4

2. LITERATURE REVIEW:

There three basic types of number portability: operator, location and service poratbility.

2.1 Operator Portability:

This is the ability of the subscriber to retain within the same service area,an existing mobile number even if they change from one service provider/operator to another. This type of portability is for the same service, i.e fixed to fixed, or mobile to mobile. Different types of operator portability are defined as:

- ✓ Fixed number portability: portability of fixed geographic numbers

- ✓ Mobile number portability: portability of mobile telephone numbers
- ✓ Intelligent number portability: portability of non-geographic intelligent number

2.2 Location Portability:

Location portability is the ability of a subscriber to retain an existing telephone number when charging from one physical location to another. Location portability is the porting of a geographic number from one location to another. Location portability can be within exchange area, within numbering area, within charging area, or anywhere.

2.3 Service Portability:

Service portability is the ability of a subscriber to retain the existing telephone number when changing from one service to another service, say from fixed to mobile services. Till date operator portability has been implemented internationally and this is implemented in India.

2.4 Convergence-based:

This type of portability allows usage of the same number while shifting from fixed to mobile telephony.

2.5 Total number portability:

Enables usage of the same number across different technologies, geographical regions and national boundaries and is the ultimate aim of number portability. It will also be the most difficult to implement and would require a collaborated effort on the global scale among different service providers. It will be a combination of different types of portability options. Number portability when used to transfer numbers from one service provider to another is called Mobile Number Portability.

The technology challenges towards implementation come through complexities in number administration, network signalling functions, call routing, billing and service management. A translation element is necessitated in the network as the mobile number addressing scheme becomes a virtual address. Central to the address translation scheme is the NP translation database hereafter to be termed as NPDB (Number Portability Database).The network classification is done as follows:

- ✓ **Donor Network:** The network that first assigns a telephone number to a subscriber from one of its administered ranges.
- ✓ **New Serving Network:** The network of the current service provider serving the ported number.

- **Old Serving Network:** The network prior to porting in of the number to the current network. It is not necessarily the Donor network as multiple provider Donor network: The initial network where the number was located before ever being ported.
- **Originating network:** The network where the calling party is connected.
- **Recipient network:** The network where a number is located after being ported.
- **Database:** The store of ported numbers with their relevant routing numbers.
- **Routing number**: A specific number that is derived and used by the network to route the call
- towards a ported number.
- **New service provider** (**NSP**): It is the recipient carrier i.e., the **new service provider** to which the subscriber wishes to subscribe to.
- **Old service provider (OSP):** The donor carrier is the **old service provider**, which the subscriber wishes to leave.
- **Number Portability Administration Center (NPAC)**: The authority responsible for maintaining NP solutions in different regions.

Both the OSP and NSP carriers will have access to their own wireless network, order entry and point of sale terminals. Further, the two competing carriers' WNP architectures will be connected at two points:

- • Intercarrier communications process (ICP)
- • Number portability administration center (NPAC).

In number portability the "donor network" provides the number and the "recipient network" accepts the number. The operation of donating a number requires that a number is "snapped out" from a network and "snapped into" the receiving network. If the subscriber ceases to need the number then it is normal that the original donor receives the number back and "snaps back" the number to its network. The situation is slightly more complex if the user leaves the first operator for a second and then subsequently elects to use a third operator. In this case the second operator will return the number to the first and then it is assigned to the third Calls to ported numbers are completed when a customer who calls a ported number sends the dialed number to a provider's SSP (Service Switch Point), where it is identified either as a local call or not. If the call is local, the switch has the NPA-NXX in its routing table as portable, so it sends a routing request to the STP (Signalling Transfer Point) which accesses a local database that is updated by an LSMS (Local Service Management System) which holds all routing for all ported numbers to which the carrier is responsible for completing calls. If routing information is found, a response is sent to the "query" containing the information necessary to properly route the call. If it is not a local number, the call is passed on to the STP and routed until it gets to a local carrier who will perform the "query" mentioned earlier and route the call accordingly. Switches are feasible.

3. NEED FOR IMPLEMENTATION FOR MNP

The arguments given in favour of implementing MNP is:

- It removes barriers to switching networks for customers, thereby increasing customer choice.
- More choice would translate into greater competition among operators to retain and attract more customers, leading to better quality of service and reduced tariffs.
- MNP also allows effective utilization of numbering resources, as one customer is bound to stick to his mobile number for a much longer time, even if he is switching service providers.

4. PROS & CONS OF MNP FOR TELECOM SERVICE PROVIDES :

4.1 Pros:

- **Optimum utilization of network and spectrum:** As the advent of MNP in India there is optimum utilization of the network and the spectrum. The TSP's here in India will get benefit of using their resources at the optimum level with increased quality of service for the customers/users. Updated networks which results in better services will be the driving factor for various service providers such as Airtel, Vodafone, Reliance, Idea, BSNL etc.
- **Intensify the competition:** Mobile Number Portability will boost the competition which will help the service provider in improving their service quality with variety and novelty in their service offerings. This indirectly will help them in getting new subscribers and help boost their revenues.
- **Standardized market rate:** While MNP vastly increases competition, it also standardizes market rates, thereby bringing about a certain amount of uniformity in the field. It will create a level playing

field for the emerging service providers to contribute in a big way in Indian telecom sector.

- ✓ **Improves market share:** Introduction of MNP would reduce the asymmetry between the market shares of the incumbent vis-à-vis a new entrant. The loss of the incumbent is greater than the extra profits given to the new entrant. Therefore there will be a reduction in the aggregate profits in the industry on the whole.

- ✓ **Brand Value:** The brand image of service provider will help them in getting good number of new subscribers but at the same time it will give an opportunity to other small players to build their brand by providing better quality of service, novelty in VAS and timely response to customers' queries.

- ✓ **Better use of infrastructure and resources:** As competition is growing due to MNP it will indirectly help service provider to use their infrastructure at the optimum level. This will also help in proper utilization of resources with less wastage.

4.2 Cons:

- ✓ **Fluctuating Customer Base:** Most Indian mobile subscribers, at least those residing in the major cities of the country, prefer to maintain prepaid mobile services, as against post-paid, billing services. There is no great degree of loyalty among these subscribers either. Not only that, it is fairly easy for customers to jump from one carrier to another, and hence, they may prefer not to go through the tedious paperwork MNP requires right now.

- ✓ **High barriers to entry:** With switching costs, entrants have to price aggressively to steal business from the incumbent. Introducing MNP will alleviate the need to price aggressively, thereby facilitating entry. However, there may be countervailing effects. For instance, if incumbent mobile operators have a large captured customer base thanks to switching costs, they are less likely to fight entry by aggressively cutting prices due to the so-called "fat-cat" effect in the absence of MNP. In contrast, MNP makes incumbents also more aggressive so that market entry may become less attractive for new operators. The net effect of introducing MNP on entry is thus ambiguous.

- ✓ **Huge need of investments:** Investment: Introducing MNP is likely to affect the investment incentives of both incumbents and potential competitors. Standard arguments suggest that introducing MNP will reduce the incumbents' incentive to make cost reducing investments, as the cost-reduction applies to a reduced customer base. Conversely, the competitors' incentives to make cost-reducing investment should be expected to increase, with ambiguous net effect. The aggregate effects on demand-enhancing investment, such as infrastructure quality or product innovation, are even less clear. The handset prices would increase because the value of a captured customer goes down while the price for mobile services would come down as the competition intensifies.

- ✓ **Increase in Administration Cost (Customer Transfer Cost):** These are customer transfer costs or porting costs. They include the costs incurred by service providers in closing an existing account, setting-up a new account and coordinating the network operators in the switching over of the mobile number and routing of the calls; costs of new handsets or SIM cards; and caller costs (the additional delay in setting up a call to a ported numbers).

- ✓ **Additional investment in advertising, promotion and campaigns:** With the increase in competition there will be a great deal of huge investment for service provider as far as advertising, promotion and campaigns are concerned. They will have to put in lot of efforts to acquire new customer at the same time maintaining the old customers. To attract new customers a strong advertising and marketing backup will be needed and this will increase the expenses of TSP's.

- ✓ **CRM enhancement:** Customer Relationship Management is the most important factor for service provider. This will add a burden to TSP's as they will have to spend in more time and effort to update the CRM and maintain the database of each and every customer. New customers' data is also to be acquired and stored so more no of servers, databases and processing infrastructure is to be needed. This will indirectly increase the complexity of CRM.

- ✓ **Software & system upgradation:** Software and system upgrade maintenance lines to keep up with

regulatory changes is a tedious task and will involve a lot of man-force as well as capital.

5. THE CHALLENGES:

➢ Huge Costs: Telecom services sector in India requires an investment of Rs 50,000 crore over the next three years to meet the growing demand. A substantial share would be required for the mobile services market. The GSM service providers are yet to justify the huge investments made in this field and are not keen on MNP.

➢ Customer Retention/Increased Competition: The service providers are also on guard against the risk of losing customers and revenues in the post-MNP era.

➢ Infrastructure Upgrade: To support MNP, a company has to upgrade both its hardware and software capabilities, which will amount to some cost.

Table 1.2: Top five Telecom player with net addition.

Operator	Subscribes IN	Subscriber OUT	Net Addition
Vodafone	4,88,250	2,95,489	1,92,761
Idea	3,91,191	2,40,402	150789
Airtel	5,30,615	3,82,400	1,48,215
BSNL	1,07,724	2,57,817	-1,50,093
Reliance	44,753	3,51,170	-3,06,417

➢ Cost Recovery and Bill Reconciliation/Query Processing: When a customer plans to shift, the old service provider (OSP) has to perform a query to identify if there are any billing amounts pending, which they need to recover before the subscriber moves to the new service provider (NSP).

➢ Several issues need to be cleared by the regulator before implementing the MNP. Primary among these are the limited mobility versus mobile services, carrier access code (CAS), finalisation of the Interconnect Usage Charges (IUC), etc.

➢ The regulator must ensure that there is absolute transparency in the charges for the person calling a ported number and another receiving the call on a ported number. Only such clarity will ensure widespread usage among the Indian mobile users and make MNP a widely used feature.

6. CONCLUSION:

Thus, this was an introductory report on the Mobile Number Portability (MNP) and its pros and cons from Service Provider's point of view. It gives a birds eye view over the scenario. Overall, its a benefit and a major utility from customers point of view but a really cutthroat competition for service providers as it may result in a loss of revenue and anyways the churning rate is very high in telecom business plus the investment for the technology is an added problem for small players. Thus adding one more question on their challenge to survive.

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