Towards Implementing Mobile Number Portability (Mnp) - Nigeria Experience

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Abstract—With increased competition by Mobile Service Providers in Nigerian telecom markets, and millions being spent on advertisements by carriers to lure consumers, the desire and sometimes need to change to other mobile networks with better services heightens each day. However most consumers and businesses place value on retaining their telephone numbers, and are as such reluctant to change mobile networks. Imagine the administrative, marketing, and goodwill costs associated with changing telephone numbers for a business, and even for individual phone users. The above scenarios underscore the vitality and desirability of Mobile Number Portability (MNP) to enhance service quality and promote healthy competition among telecom operators in Nigeria. The wind of the MNP, which started blowing in Europe and America over a decade ago, is now spreading across the African continent and Nigeria cannot be left behind the wheel. This paper will address the need and challenges surrounding MNP implementation, the roles of Nigeria Communications Commission (NCC), the benefits to the users, lesson(s) to learn from Global experiences of MNP implementation among others.

Keywords—Mobile Number, Portability, Mobile Service Provider

I. INTRODUCTION

August 2001 was a pivotal date in the history of Nigeria in which the first Global System for Mobile (GSM) communications call was made under a democratic government. This event heralded the dawn of a new era “the era of GSM technology”, which has completely changed the face of doing business in Nigeria. [9]

One of the toughest decisions that can be taken by any mobile phone user in Nigeria today will be to discard a line because the user is not enjoying the best quality of service from the operator. It becomes more difficult if you have been using the line for say five to six years and it is your officially recognised line by business associates, family and friends both at home and abroad.

Changing one’s cell number and services provider simply because of an inefficient service delivery from a particular service provider may not guarantee that the new services provider will be efficient in the long run. Besides, the fact that it may require to jettison a previous number with which one can be associated, comes with its own challenges particularly for business minded individuals

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But is it possible to change your service provider and still retain your number for the new service? The common cliché goes: you cannot eat your cake and have it. But this definitely is not the case with Mobile Number Portability (MNP). Of course, with mobile number portability, you can eat your cake and still have it, which means that you can change your service provider without changing your number.[2]

In Nigeria, there has been pressure from various quarters on the Nigerian Communications Commission (NCC) to implement its number portability roll out plans, although the regulator has said it could only commence after the ongoing Subscriber Identification Module (SIM) card registration which ends in September 2011.[3]

With the liberalisation of the telecommunication industry in 2001, the story of Nigeria’s teledensity ratio, which was put at 0.4 per cent by the NCC and the International Telecommunication Union (ITU) in 1999 changed dramatically to 64.7 by April 2011, making the country one of the fastest growing GSM markets in the world. [3 ]

Meanwhile, amidst this growing figure and telecommunications industry boom is the challenge for quality and efficient service from the network operators. These challenges range from inter-network connectivity problems, network congestion and dropped calls. It is a common knowledge that Cell phone users in Africa, particularly Nigeria today carry three to four phones as a way of escaping from poor telecommunications service from either of the operators. This has also fuelled the rush for dual SIM handsets in the county

It has been a common phenomenon to dial a number and get error messages such as ‘Network busy’, ‘Network error’, ‘Your number cannot be completed at the moment’, ‘the number you are calling is incorrect, among many other disturbing and frustrating error messages from the operators. Today, many are condemned to bear the burden of carrying two to three phones around, in case one network interconnection failure at a crucial moment a call is to be made.

Besides, the issue of unfriendly tariff regime has surfaced as part of the need for the revolution. It is believed that with mobile number portability, competition will drive tariffs lower than its current position.

As a matter of fact, subscribers who had had a nasty experience from Customer Care Service of the telecoms

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operators would not but wish for freedom through MNP. Many subscribers are complaining bitterly about unfriendly manner at which some Customer Service agents attend to them. And that is even if their calls get through to the agents. In most cases, customers’ calls are not picked, while in some cases when the calls are picked, the agents would not be able to find solutions to the subscriber’s problem. Of course, with MNP, no telecom operator that wants to retain its subscribers will toy with them.

II. MEANING OF MNP

Mobile number portability means you can keep your existing mobile telephone number when you change your service provider. Mobile number portability is simply keeping your mobile phone number when moving from your existing service provider to a new provider.[1] It means you will use the services and features offered by your new provider and not take your existing service and its features with you. With MNP fully implemented it will now be possible to move from say MTN to Airtel or Glo to Etisalat or Visafone, while keeping the same phone number, provided there are no contractual obligations. Mobile number portability is not a service feature or a product; it is the removal of a barrier to choosing the provider or service that suits an individual Mobile phone user. In this scenario, a mobile phone user need only to change its existing service provider or Network provider and not his/her mobile number; thereby retaining his/her business associates, friends and family contacts for as long as he/she deems it fit.

III. BENEFITS

Number Portability offers immense benefits to subscribers, allowing them to easily change service providers without having to notify their friends and colleagues of a number change. With number portability, a subscriber who is unhappy with a mobile services provider can switch to a provider of choice while retaining his existing mobile number. In short, what this means is that if a user moves to another mobile network, the new network operator would allow the individual to formally use his/her SIM card without modification to its original telephone number (including original network code) .. The user's number could then said to have been "ported", in MNP terminology.

In addition, Mobile number portability could reduce the complaints of poor quality of service on the network of certain operators, as subscribers would have the opportunity to change operators at will and retaining only the number which could also serve in certain quarters as users identification number. Besides quality assurance, MNP also has the tendency of engendering tariff reduction as competition gets stiffer and help in reducing crime, since it may be difficult for a single user to own multiple mobile number as it is currently applicable.

Another benefit to mobile phone users is the fact that even customers who do not choose to port their numbers to a new network would benefit from the new tariffs, promotions, features, and quality of service improvements that are likely to roll out under the MNP environment.

Moreover, with number portability, subscribers can save money by having the best plan they like: while some people hardly leave the city they live in and want more features, others might travel a lot, especially to remote areas and need better signal reception. Mobile Number Portability allows both types of users to have the same number without having the additional headache.

For the mobile subscribers, porting number means no more endurance for poor quality of service and a tariff regime that is not very pocket friendly for the majority of consumers. It is a form of empowerment for the consumers to demand their rights from the operators and they express this by switching to where they would be served right. And for once, many Nigerian subscribers would be eased off the burden of carrying many phones around, although many are used to it already. Number portability avails subscribers opportunity to switch to the most reliable network at any time without losing their number.

Again, with number portability, users of mobile CDMA can switch to GSM network using the same number and at the same time GSM user can switch to CDMA if they so desire while still using their mobile number. Indeed, it is a win-win situation for the subscribers under the new regime as all operators work assiduously to ensure they are satisfied.

Number portability is essential to maximize the benefits of a competitive telecommunications market.

IV. TELECOMS OPERATORS CONCERNS OF MNP

It is a common phenomenon in many countries operators are not favourably disposed to Number Portability regime where its introduction had been attempted; or where it has fully been introduced. Reasons being that it exposes them to stiffer competition and pushes them into higher marketing expenses, which in some cases may affect their profitability. Of course, this is a fact that has proven itself in countries that are number portability compliant.

For instance, in India, telecoms operators like Bharti Airtel, Reliance Communications and Idea Cellular, were said to have recorded lower profits for the first quarter ended March 2011, as an aftermath of adoption of number portability in the country on January 20, this year.[5]

However, any operator worth its onions would know that number portability is a challenge to get the best out of it. Certainly, operators with best services enjoy the benefits of number portability. Naturally, everybody wants the best; therefore, any operator offering less in service quality and tariff plan is expected to see a massive exodus, provided the subscribers could not endure it.

The irony of the situation is that while subscribers are enthusiastic and anxiously awaiting the kick off of number portability in Nigeria, the operators have continued to ask for more time under the guise of building a robust network so as to have a strong and dependable interconnect system in place. But whether the operators are ready or not, Nigeria as the fastest growing telecommunications market in Africa cannot afford to lag behind in the new revolution to liberate subscribers.

V. HOW MOBILE NUMBER PORTABILITY WORKS
Mobile Number Portability (MNP) enables mobile telephone users to retain their mobile telephone numbers when changing from one mobile network operator to another. MNP is implemented in different ways across the globe.

The international and European standard is for a customer wishing to port his/her number to contact the new provider (Recipient) who will then arrange necessary process with the old provider (Donor). This is also known as 'Recipient-Led' porting. United Kingdom (UK) did not implement aRecipient-Led system, where a customer wishing to port his/her number is required to contact the Donor to obtain a Porting Authorisation Code (PAC) which he/she then has to give to the Recipient.

Once having received the PAC the Recipient continues the port process by contacting the Donor. This form of porting is also known as 'Donor-Led' and has been criticised by some industry analysts as being inefficient. It has also been observed that it may act as a customer deterrent as well as allowing the Donor an opportunity of ‘winning-back’ the customer. This might lead to distortion of competition, especially in the markets with new entrants that are yet to achieve scalability of operation.

In India, mobile number portability which was launched on January 20, 2011 is Donor Led. Only the terminology is changed from PAC to UPC (Unique Porting Code). A significant technical aspect of Mobile Number Portability is related to the routing of calls or mobile messages (SMS, MMS) to a number once it has been ported [7].

VI. IMPLEMENTATION OF MNP BY NCC

The Nigerian Communications Commission (NCC) by virtue of the provisions of Section 128 of the National Communications Act 2003 is vested with exclusive powers to regulate number portability in Nigeria, among other things. This is in line with the objectives of removing barriers to free choice of mobile network by a subscriber; ensuring further increase in the level of open competition among network operators; acting as stimulus for service providers to improve on quality of service and consumer satisfaction; and making it easier for the last mobile entrant to gain market share.

However, the issue came to the front burner again early this year when the Executive Vice-Chairman of NCC, Juwah, disclosed to the media that the new revolution would begin immediately after the ongoing SIM registration[3]. According to Juwah, there is a link between the implementation of mobile number portability and the actualisation of the SIM card registration in Nigeria. In Juwah’s opinion, he explained that there is no need awarding number portability if you don’t know the users of phones and how to identify them. According to the Regulator, there is need to quickly do SIM card registration before going into number portability because it would be a nightmare for security agents to identify them if they can move easily from one service provider to another.

According to The Executive Vice-Chairman of the Commission, Juwah, told the media in February this year that the implementation would commence immediately after the ongoing SIM registration, the modalities are still remain unclear. Industry observers still wonder if the regulator is afraid of wielding the big stick on the operators, who are known to be averse to MNP.

However, the NCC Head of Media and Public Relations, Mouka, in reaction to the issue said the commission was only waiting to get a sizable number of SIM cards registered before MPN implementation would kick off[3]. According to Mouka, the implementation would start before the end of this year and that the regulator has commenced the selection process of a third party firm that would handle the implementation processes.

VII. TYPES OF NUMBER PORTABILITY

The various types of number portability [2] are: A. Provider Number Portability: Subscribers can change the service provider while retaining the same phone number. It is also called operator portability.

1. Local Number Portability: -The subscriber retains its number when changing from one operator/service provider to another. E.g. the porting of existing directory number between fixed operators.

2. Mobile Number Portability:-Porting of mobile telephone numbers between Wireless Operators.

3. Non-geographical Number Portability:-Porting of ‘service’ numbers, e.g. ‘800’-numbers.B. Location Number Portability: Subscribers can change their service location while keeping the same telephone number.

4. Service Portability: Subscribers can change the subscribed services while retaining the same telephone number. Service portability allows the subscribers to enjoy the subscribed services in the same way when they roam outside their home networks. The subscriber retains its number when changing service type. E.g. from POTS to ISDN, mobile to fixed, fixed to mobile.

VIII. CHALLENGES OF IMPLEMENTING MNP

The major challenges of implementing number portability are:

- Cost involved in upgrading the network infrastructure to support number portability.
- Cost involved in maintaining the upgraded infrastructure.
- Cost involved in the usage of network resources to route the calls to the ported number.

According to [4] Mobile Number portability (MNP) enables mobile subscribers to change their service providers or their location without having to change their existing phone numbers. If the subscribers are not satisfied with the services of their service provider, they can change their service provider while retaining the existing phone number. This infuses competition among service providers and forces them to improve their service standards to check subscriber churn [8]. Many countries have made number portability mandatory to liberalize competition. Many others are in the process of implementing it.

A significant technical aspect of implementing number portability is related to the routing of calls or mobile messages (SMS, MMS) to a number once it is ported to some other networks [4].
IX. IMPLEMENTATION

There are two fundamental issues that need to be considered in implementing number portability in a country.

• Number Porting Process: This applies to the policies and processes for porting the numbers.

• Call Routing: This applies to the scheme of routing a call to a ported number [7].

Number porting process involves a set of parties, which includes donor (or current serving SP), recipient (new SP) and many participants (other service providers not related to the number that is being ported). The basic requirement of the porting process is that a subscriber needs to initiate a request to the service provider. The request can be initiated to either of the service providers (current serving SP or the new SP). This depends on the regulatory policies of the country. There are two approaches by which the number porting database can be maintained and implemented.

• Peer-to-Peer approach
• Centralized approach

Peer-to-Peer approach

In this approach, there is a bilateral agreement between two service providers. The two service providers agree on the implementation of number portability based on proprietary interface.

With this non-standard approach, there can be multiple commercial agreements between the service providers, which make it difficult to manage the terms of each agreement, and track the porting requests. This approach is very complex, and the complexity is further increased with increasing number of service providers.

X. FACTORS INFLUENCING THE SUCCESS OF NUMBER PORTABILITY

• Subscriber Awareness: Subscribers need 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. 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. For better success and market competition, it is recommended that the new service provider, who is getting the subscriber, bear the cost of porting.

• Handset subsidies and fixed-term agreements: NP has been a great success in the countries like Finland where there are no subsidies on mobile handsets. Subsidies given by the service providers lead to fixed term agreements and hence limit the option for the subscriber to switch to a different service provider. There can be other agreements, which can hinder the success of NP.

XI. GLOBAL EXPERIENCES IN MNP

Globally, Singapore was the first country to implement MNP in 1997, followed by Hong Kong in 1999 and Australia in 2001. In Africa, South Africa took the lead in 2006 followed by Egypt in 2007 while Kenya in April 2011 and of late Ghana in July 2011. Of late, many countries have adopted the MNP model to prevent market doldrums and putting pressure on service providers to furnish more services at a competitive price level. However, it has not been able to produce any significant results in these markets.

“Around the world, MNP has been a mixed bag of success and failure. It has been there in several parts of world but has not taken off in a big way. However, we are ready and believe that it allows more and more customers to come to our network and enjoy the services.” [5]

XII. CONCLUSION

➢ MNP is targeted for introduction in last quarter of 2011 and will allow subscribers to port their numbers from one Mobile Network to another Mobile Network. NCC believes that the Nigeria’s Mobile market has the newest generation of networks, that competition is already introduced; and that MNP will indirectly improve QoS as the market competition matures.

➢ FNP is targeted for introduction thereafter will allow subscribers to port their numbers from a fixed network to another fixed network provider (regardless of whether the telephony service is provided by TDM or VoIP technologies)

➢ NCC believes that the FNP will facilitate the fixed market to grow quickly and leapfrog technologies. FNP will stimulate competition and indirectly stimulate growth of service offerings. Bi-modal porting (porting between fixed and mobile networks) is not planned at this time.

➢ The implementation of a National Number Portability Clearinghouse (NPC) which will contain a national NP database (repository) that will host all ported telephone numbers in Nigeria is considered as a global best-practice, least expensive in the long term; fastest to implement in the short term. It avoids operators’ bi-lateral problems and delays and also minimizes costs.

➢ The NPC will include all inter-operator NP processes needed to initiate, reject, accept, complete and terminate a ported number between Operators.

➢ Both MNP and FNP will be implemented on the same NPC infrastructure to cut down on cost and confusion.

➢ All service providers will have access to and use the data in the NPC database as the official Nigerian ported
number “database of record”. Operators must maintain their own local copy of this database, which will be periodically updated and used for call set-up, and routing queries in their networks. International, transit and content service providers which are not assigned Nigerian numbering resources will have controlled access to the ported number data by the NPC administrator who will vet requests for validity and security purposes. Service providers must maintain NP and related routing data in a secure manner and must not re-distribute this data.

- NCC will have read-only access capabilities to the NPC to allow monitoring and generating reports to assess processes and industry trends. This is because in extremely dynamic and competitive markets, it is important for the regulator to monitor and control the NP processes for the good of the general consumers.

REFERENCES

[8] Samarajiva, R (2007)—Nigeria to introduce MNP to remedy quality of service
[9] www.directionsmag.com/articles/...gsm...nigerian.../123278