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Telecom Regulatory Authority of India  
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New Delhi-110 029

BMCL/DBS/820/2005

9<sup>th</sup> Sept.'2005

**Sub: Consultation Paper on Mobile Number Portability**

Dear Sir,

We have carefully gone through the Consultation Paper issued by TRAI on 22<sup>nd</sup> July'2005 on Mobile Number Portability (MNP). We fully endorse the submissions made by COAI vide its letter No. TVR/COAI/138 dated 29<sup>th</sup> August'2005 requesting for extension of at least four months for conducting an independent study for examining the various technical and economic issues involved before making the considered submission to the Authority. No information has been given in the Consultation Paper about the extent of cost involved in implementing different technical solutions available for Mobile Number Portability and their likely impact on the customer tariff. Without doubt the cost of implementation will be ultimately passed on to the customers, directly or indirectly, by the operators.

In the present environment of very high rate of growth of mobile subscribers and the intense competition due to presence of six or more operators in most of the Circles, we firmly believe that it is rather premature to introduce Number Portability in India at this juncture. The Indian market is highly price sensitive and if we have to achieve the target of 250 million subscribers by end of 2007, the current tariff, though cheapest in the world, will have to be further brought down to meet the requirements of lower strata of society. In such a situation the huge cost involved in implementing Number Portability will be counter productive.

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***BPL Mobile Communications Ltd.***

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In our opinion, Number Portability falls in the domain of National Numbering Plan Management, which is outside the scope of TRAI. The provisions in Section-11(a) (iv) of the TRAI Act do not encompass Number Portability.

Notwithstanding the above comments, since no response has been received from TRAI to COAI's request for extension of time limit, we are giving in the Annexure our views on the various issues raised in the Consultation Paper dated 22<sup>nd</sup> July'2005 based on the limited information available.

Thanking you.

Very truly yours,  
For **BPL Mobile Communications Ltd.**

**D.B. Sehgal**  
**Advisor (Corporate Affairs)**

Encl.: Annexure

**Annexure**

**Subject: Mobile Number Portability**

**Introduction**

Mobile Number Portability (MNP) involves a number of issues regarding competition, churn management, subscriber data management and increased subscriber acquisition cost etc. on the one hand and call processing, switching and routing on the other hand. It also implies additional cost for network up-gradation, setting-up of centralized data base for ported numbers in case of off-switch solutions and additional carriage cost in case of on-switch solutions (call forwarding). The additional cost will definitely get reflected directly or indirectly in the consumer tariff. It may not be possible for the operators to absorb this cost, since the present tariff structure is already lowest in the world. **Since the Indian market is very price sensitive, the additional cost may hamper the rate of growth of tele-density instead of promoting the same.**

As per the Consultation Paper, Number Portability benefits subscribers and increases the level of competition. With up to six operators in most of the Circles, there is already excess competition in cellular mobile telephony segment, resulting in very high rate of churn. MNP will further increase the churn and consequently the subscriber acquisition cost. The Consultation Paper does not propose introduction of Fixed Number Portability (FNP) at present. In India FNP is more essential as the competition in this segment is too limited. From the data given in the Consultation Paper (Table-4.1) it is seen that except in case of Singapore, in most of other countries FNP was introduced 3-5 years ahead of introducing MNP. **In the table there is no mention of the practices followed in China. We should also get the Chinese experience. However, in India TRAI wants MNP to be introduced without indicating any time schedule for introducing FNP.**

There is no mention in the consultation document of the cost benefit analysis. The cost and benefits of introducing MNP at this stage should be carefully weighed before taking final decision about introducing MNP and the time schedule thereof. **Therefore, the whole exercise is being justified from the wrong end of the stick, i.e. quality of service and increase in competition without knowing the costs involved.**

**Benefits of Number Portability**

The main benefit being cited in support of introducing MNP is that it removes barriers for competition between the operators and ensures a dynamic, fully competitive market. On the one hand, TRAI says that competition between Mobile Service Providers in India is already very intense and hence has permitted consolidation thru' intra circle mergers and acquisitions. On the other hand it wants, to further increase the level of competition by introducing MNP, because of a belief that the QoS will improve. In the past also TRAI has been giving contradictory arguments in favour of its various decisions such as implementation of UASL and allowing Basic Operators to provide fully mobile services for increasing the level of competition and at the same time permitting intra circle mergers so as to have benefits of market consolidation. In the Consultation Paper TRAI has listed the following benefits to the consumer due to number portability.

Type-1 benefits – Subscribers are able to avoid the costs of reprinting stationery, informing friends and relatives about their new telephone number as and when they change the operator.

**This is too insignificant a benefit limited to porting within the same circle. The benefit will not be available if a subscriber moves to another circle.**

Type-2 benefits – are those that arise out of improvement of service quality by the operators so as to prevent their subscribers from churning to other networks.

**In our opinion, it is a wrong and misplaced premise. DOT/TRAI may strictly enforce QOS norms rather than thrusting an expensive and doubtful solution.**

Type-3 benefits are those that accrue to callers trying to contact the ported users, who are able to avoid the need to change entries in their diaries etc. This will reduce the calls for wrong numbers.

**Too insignificant a justification. Technology enables quick change of the number just by giving the save a number command after the number is captured.**

**In our considered opinion, the above benefits are not so overwhelming as to justify the additional cost for network up-gradation and data management for all ported numbers.**

### **Co-ordination and other Issues**

There will also be a number of other issues such as coordination between the various operators involved, increased complexities for authentication, call processing, switching and routing. In spite of so-called benefits of MNP not being available at present in India; the level of churn is as high as around 50%. Change of mobile number while switching from one operator to the other does not seem to be a major constraint for subscribers, particularly prepaid subscribers, switching over to other operators. **The churn is not because of quality of service but because of tariff plans. A prepaid customer is very cost conscious and could changeover to a new operator just for small perceived benefits.**

### **Various Options for implementing Number Portability**

In the Consultation Paper a number of technical options have been discussed for implementing number portability.

#### **1) Off-switch Solutions**

In the off-switch solutions, the data of all ported numbers is maintained in one or more external databases that all switches of various operators can access and query. The databases are queried either by the originating switch or some transit switch and the calls are directly routed to the recipient network. These types of solutions are most efficient long-term solutions for implementing number portability.

There could be two ways to access the database – All-Call-Query or Query-on-Release. Internationally, All-Call-Query-Method has been preferred by most of the operators.

**In our opinion, the choice of a solution would depend upon the cost and complexities involved. What are the costs involved for each option? The regulator has not given estimated costs in Indian environment in the Consultation Paper, therefore, it is difficult to suggest the best solution in our context.**

#### **2) On-switch Solutions**

In this case the donor network maintains the routing information for a ported number. The donor switch either routes the call itself or provides routing

information to the originating network, which then routes the call directly to the terminating network. On-switch solutions are generally seen as short-term interim solutions as these can be quickly implemented as compared to off-switch solutions.

**In our opinion, we should avoid short-term solutions, which may ultimately have to be replaced by the long-term solutions involving additional cost. There should be no tearing hurry for introducing MNP, until costs involved, benefits accrued and complexity of implementation is available.**

### **Data Base Management**

The centralized model involves a single reference database containing data for all mobile numbers or all ported numbers. This reference database is usually copied to operational databases maintained by each participant network at regular intervals. The centralized database could be managed either by a consortium of various operators or it may be outsourced to a third party.

**In view of the sensitivity of the data involved, in our opinion, it will be preferable to outsource this job to an independent third party/OSP.**

### **Operational Aspects**

Besides the complexities involved in technical implementation of number portability, a number of challenges are involved in the administrative arrangements for coordination between the various operators, maintenance of up to date data base at all times by an independent entity etc. Simple, efficient and practical porting procedures have to be evolved for successful implementation of MNP.

TRAI has suggested in the Consultation Paper that these issues could be addressed separately through another Consultation Paper at a later stage.

**In our opinion, these issues cannot be de-linked from the main issue of implementing MNP in India, and should, therefore be discussed as part of the present consultation process itself.**

### **Economic Aspects**

The cost involved in provision of number portability may be divided into following categories:

1. System set-up cost
2. Call conveyance cost
3. Administrative cost
4. Operational costs for upkeep and update of the database

The Consultation Paper does not discuss the extent of cost involved for different alternatives possible for implementing MNP in India. TRAI should have carried out an exercise based on the present level of churn, which in fact is likely to further go up, after MNP is implemented. In off-switch solution, which requires maintenance of a centralized database, suitable methodology will also have to be evolved for sharing the OPEX & CAPEX of a common data centre. **TRAI should award a study to an Expert Organisation which has the experience of implementing Number Portability in another major country like USA, UK etc. to find out the actual cost involved in Indian context for implementing MNP through various technical options available.**

**Other Issues:**

**1) Tariff for calls to ported numbers**

In the present regime of tariff 'forbearance' most of the operators have devised tariff packages whereby charges for the calls made from their network to subscribers of the same network (on-net calls) are charged lower amount as compared to calls to subscribers of other networks (off-net calls). In case of numbers ported to other networks, the calling party could be misled as it will not be obvious from the subscriber number whether the subscriber continues on the original network or has ported to a new network. **Therefore, they could be charged higher amount for calls to ported numbers. This may lead to unnecessary subscriber complaints and customer dissatisfaction.**

**2) National Numbering Plan**

In case inter-service portability is to be permitted between fixed and mobile networks, a uniform numbering plan will have to be adopted for Basic, Cellular Mobile and WLL networks. This will require complete change of numbers of all existing subscribers, as Numbering Plan for fixed and mobile services in India is absolutely different.

**3) Routing of SMS Messages**

The methods used for routing of voice calls to ported numbers are not applicable to routing of SMS messages. No solutions have been suggested in the Consultation Paper for routing of SMS messages to the ported numbers. **It is assumed that it would follow the normal routing but needs elaboration.**

**4) Number Portability between CDMA & GSM Networks**

Issues relating to number portability between different technology networks have not been discussed. For real benefits of MNP to be available to the public, portability between GSM & CDMA networks will have to be implemented. This will entail change of handset. This will be a big barrier for portability across technologies and would further restrict the so called benefits of MNP. Specific issues involved in implementing portability in these networks will have to be resolved.

**5) Possibility of Phased Implementation in India**

Since circle-wise licenses are issued in India for access networks, the implementation of MNP can be done in phases. As and when it is decided to implement MNP/FNP, it may be advisable to implement the same in a few circles in the first phase. The same may be implemented in other circles after gaining practical experience in our environment and solving the various problems encountered as well as analysing the actual cost and benefits.

**6) Timing of introduction of Number Portability**

In most of the other countries MNP has been implemented when they have reached a significant level of tele-density. Exceptions like Netherlands, a small country with a few million of population, may not be relevant in our context. **Pakistan too is not relevant. We must also get information about the Chinese experience and a more detailed US experience, where even with a common numbering plan for different technologies, the portability is only within the same area code.**

**Issues for Consultation**

In the light of the above comments, we are giving below our draft reply to the various issues raised by TRAI for consultation with stakeholders:



Q.1) What is the anticipated impact of number portability on customer satisfaction and increased competition between services and operators?

Ans. Number portability may enhance customer satisfaction to some extent due to retention of their original phone number irrespective of the network they have subscribed to. However, the level of customer satisfaction may be adversely affected due to additional porting cost involved and in case of any mis-routing of incoming calls for the ported numbers, as well as additional call costs involved for routing calls to ported numbers in case of Service Area Portability. The complexities will remain unidentified until the extent of portability gets defined.

Q. 2) The following technical options have been discussed in the Consultation Paper. Please indicate your preference with reasons:

All-Call-Query  
Query-On-Release  
Onward Routing (Call Forwarding)  
Call-Drop-Back  
Any other solution

Ans. Based on the experiences of other countries, we are of the opinion that All-Call-Query or Query-On-Release system should be implemented for number portability in India right from the beginning. An in-depth study by an independent expert should be carried out for finding out the most suitable option in our context.

Q. 3) In the past, some countries have followed the approach of implementation of a short-term solution, with parallel planning for a long-term solution. Several other countries have opted directly for a long-term solution. The issues associated with either approach are discussed in this paper. Please give your opinion, with reasons, on the path India should adopt?

Ans. We are not in favour of initially implementing the short-term solution and then changing over to long-term solution in due course. This will avoid in-fructuous additional expenditure in implementation of the short-term solution, which will become redundant when the long-term solution is implemented. **In the absence of cost benefit analysis, the complexities involved, any approach will have its pit falls. Let us get cost benefit analysis for the various technical options listed in Q 2.**

Q. 4) In case of a centralized database approach, who should be responsible for the set up, ownership, administration, and management of such a database? Should the administration and operation of a centralized database be assigned to a third party duly licensed by the licensor as any other service provider (OSP) on the lines of a clearing-house, or should some other approach be adopted?

Ans. The centralized database should be set-up, owned and managed by a third party independent provider who has no direct or indirect interest in any other Cellular Mobile or Unified Access Licensee. Subscriber data is generally sensitive for the operators involved.

Q. 5) How should the database updates between different operators be synchronized? Where could the central database be located?

Ans. Since MNP is to be implemented on 'circle-wise' basis only and not across the circles, it would be preferable to maintain a central database at the location of level-I TAX or where most of the MSCs of the Cellular Mobile Service Providers are located in a circle. The donor or recipient network could do database update online. **Suitable steps will have to be taken for ensuring database security and customer confidentiality.**

Q. 6) What should be the level of centralization (metro, circle, national) for a centralized database? Should this be a permanent arrangement, or be subject to later revision?

Ans. It would depend upon the extent and level of portability required. The centralization of database should be at the level of circle. Since mobile networks in 4 metros (Delhi, Mumbai, Kolkata and Chennai) are treated as separate circles, a separate database could be maintained for each metro and the rest of the circles. **We need to carry out cost benefit analysis based on the level and extent of portability. Should the portability be limited to same geographical area, database should be in that area, but for pan India, we might need to have regional databases interlinked to each other.**

Q. 7) How should NLDOs and ILDOs handle the routing of calls to support number portability?

Ans. In case of NLD and ILD calls, it will be the responsibility of the concerned NLDO/ILDO to query the centralized database of the concerned circle where a call is to be terminated and route the same to the new network where the called subscriber's number may be ported.

Q. 8) Are the existing interconnection arrangements (such as signalling) between mobile-to-mobile, mobile-to-fixed networks sufficient to achieve number portability, or are any changes required?

Ans. The adequacy or otherwise of the existing signalling network would depend upon the extent of total ported numbers involved. These networks will definitely require some up-gradation/re-arrangement. Data links will also have to be established between each MSC and the centralized data centre for All-Call-Query solution.

Q. 9) Are there any technical issues in the portability of services such as SMS, data, voicemail or fax?

Ans. We need to study these issues in detail allied with the complexities and extent of portability.

Q.10) What problems do you foresee with the current National Numbering Plan in implementing number portability that may necessitate the modification of the existing National Numbering Plan?

Ans. We do not foresee any issues with the current National Numbering Plan for implementing number portability within the same service i.e. fixed-to-fixed or mobile-to-mobile. In case of fixed number portability, the portability will have to be restricted within the same SDCA as the SDCA based linked numbering scheme is presently implemented in India. **For total number portability, i.e. mobile to fixed and vice versa, the existing Numbering Plan for fixed and mobile services will have to be modified into one common Numbering Plan.**

Q.11) Should number portability related charges be regulated? If not, then what measures will ensure that the portability charges are not set such as to discourage portability?

Ans. The Regulator may fix the ceiling charges applicable for providing porting service by the operators. However, actual charges to be levied by different operators within the upper ceiling should be left to the market forces.

Q.12) What measures will ensure tariff transparency?

Ans. A uniform tariff across all networks will ensure tariff transparency. Alternatively, the originating network may inform the calling party by a suitable announcement whenever a call to a ported number is dialled. Of course, this solution will involve additional cost and increased call set-up time.

Q.13) Considering that the Indian market is a growing market and number portability offers the possibility of attracting customers by an efficient operator, should it be mandated that the cost of the number portability should be absorbed by recipient network?

Ans. No, it should be left to the market forces to decide as to who would bear the cost of number portability. Regulator should not do the micro-management and issue a fiat that the recipient network would absorb the cost of number portability, because he is the beneficiary.

Q.14) Please share any additional information that you might have about number portability implementations in countries and jurisdictions around the world, and what we might learn from these experiences?

Ans. Every country may have had its own experiences and difficulties in implementing number portability. As and when it is decided to introduce NP in India, it may be implemented in phase-I in a few circles and the same be extended to other circles after the actual difficulties encountered in phase-I are solved.

In US, the service was introduced in 2003

It is restricted to the area served by same area code.

It is possible across wireline and wireless mobile, because of common numbering scheme.

The capital cost to implement was around US 1 billion and operating cost is about US\$ 500 million every year

The experience worldwide has been that only about 6% subscribers sought number portability on an average.

Q.15) Give your comments, with reasons, as to when number portability should be introduced in India?

Ans. In our opinion, number portability should be implemented after another 3-4 years when we have reached tele-density of 25-30. At this stage, the operators should concentrate on networks expansion in rural and remote areas, QOS, VAS and provide the basic facility of mobility to population in these areas. **In addition the complexities and the issues involved need to be studied in much greater detail before taking final decision.**

Q.16) Should MNP be implemented progressively by service area or directly across the nation at one time?

Ans. **It is a Misplaced question and premature in view of the incomplete information available at this stage. However as mentioned elsewhere and above, MNP should be implemented progressively.** In phase-I this may be implemented in a few service areas only.

Q.17) What will be the effect, if any, on the different aspects of implementation if phased rollout is adopted?

Ans. We need to first define the stages of rollout. Then alone would we be in a position to comment on the real effects of phased roll-out, if any. However, we do not perceive any major difficulties in phased roll-out.

### **Conclusions**

**It is evident from the Consultation Paper that Number Portability is a very complex issue both on the technical as well as commercial and administrative aspects.**

The main policy thrust for the introduction of NP is to promote competition. If this is the main thrust, one should first take a view whether the present competition in the sector is adequate or inadequate? The answer to this query in our opinion is that there is more than adequate competition and is likely to continue. At this stage, the insignificant benefits from Number Portability would not justify the additional costs for implementation and the operators would be unwilling to invest for Number Portability. Ultimately the cost will be passed on to the consumer.

Though the paper argues that low penetration is not a bar for introducing NP, only a few countries have done so probably because they felt that there was inadequate competition (Netherlands). We must have the China experience.

It is also evident from the paper that no country has introduced MNP only. Majority of the countries have introduced NP in fixed networks first and then in mobile networks. An exercise to induct NP only for mobile networks does not seem logical.

The main argument for the NP from the perspective of users/customers is that they can churn to another operator if the QOS of the existing operator is poor, carrying the same number. Today they can churn but with a different number if the QOS is poor or the other operator has more attractive tariff package and the customers are doing so. The question is whether churn would be larger if NP is introduced and by how much? One should get such a comparison where NP was introduced to judge whether the NP would really justify the cost involved. Regulator/licensor can enforce laid down QoS parameters by the operators. If this were done, the reason for NP due to QOS would automatically diminish.

Having a common Database for routing calls while, a good technical idea is difficult to implement, as the details of customers of competing operators have to be managed without any leakage of sensitive customer information.

**Summarising the NP is not critical at this stage to promote competition.**

- a. It is premature and without any in-depth studies.**
- b. We should wait till the penetration reaches more than 25%.**
- c. Also NP should be implemented for Fixed Networks first and then for mobile networks or at best simultaneously for both services.**

