Telecommunications Regulatory Commission's Statement on Mobile Number Portability Cost Principle and Recovery Framework

I. INTRODUCTION

The Regulations of the Telecommunications Regulatory Commission (TRC) on Mobile Number Portability (MNP) issued on 5 January 2005 required the introduction of MNP in Jordan. With the availability of MNP, mobile customers can choose to retain their existing mobile phone numbers when switching to another operator thereby encouraging more effective competition within the mobile sector and consequently benefit the community in general.

In view of the benefits to be brought about by the introduction of MNP, it is desirable for it to be implemented as early as possible. Following thorough discussion and investigation of the implementation details with the industry through the MNP Industry Forum, it has been confirmed that 3 July 2006 would be the earliest target date in which MNP could be achieved.

The MNP Regulations generally state that “all mobile users should share in the costs of system set up and additional conveyance”, the Industry Forum shall address and study “the technical approach for implementation of MNP” and one of the deliverables of the Industry Forum Steering Committee (IFSC) is to:

> ***“ Provide recommendations to the TRC on the best technological and operational solutions/and costing principles for implementation of MNP.” In addition to that, the TRC in the MNP Regulations stated that "the TRC will work with the concerned parties through the Industry Forum to ensure that the cost recovery process should be equitable in terms of ensuring the appropriate allocation of costs resulting from the introduction of MNP between mobile operators".***

In order to facilitate the process of negotiations among operators, the TRC had convened on 13 October 2005 the 14th MNP Industry Forum meeting involving the concerned fixed and mobile network operators. In the said meeting, the industry in general expressed different views regarding the cost recovery framework for MNP. In addition, the Industry requested some clarifications and direction from the TRC.

Having considered the views and comments expressed by the industry at the 14th MNP Industry Forum meeting, the TRC issues this Statement to finalize the MNP cost principles and cost recovery framework by clarifying the issues which have not been addressed in detail in the current MNP Regulations.

II. ELEMENTS OF MNP COSTS

The major elements of MNP costs were previously classified in the MNP Regulations as: the system set-up costs; additional conveyance costs; and per subscriber set-up costs.

A. System Set-Up Costs

These costs comprise: network and equipment upgrades to establish and implement MNP by each operator; setup cost of look-up services for providing MNP that would rely on the Central Reference Database (CRDB) created and managed by the Clearinghouse; and the setup cost of creation of Local Database in each operator's network as agreed by the Industry Forum.

B. Additional Conveyance Costs

Conveyance costs are the costs that may be associated with any inefficiency that occurs as a direct result of routing calls with mobile number portability versus the efficient routing that would have occurred if portability were not implemented.

C. Per Subscriber Set-Up Costs

Per subscriber set-up costs would be incurred upon the specific number porting requests by the mobile customers. Administrative work has to be carried out by both the Recipient Network Operator (RNO) and the Donor Network Operator (DNO) with the Clearinghouse Vendor maintaining the databases for providing MNP once a Number Portability request is formally raised by the RNO. In addition, the DNO would have to perform system checks to confirm that the number portability request could be applied and would have to carry out the necessary steps to facilitate the porting of the number concerned. Within the cutover time-window, all the parties concerned would have to effect a re-route on the routing plan of the ported number. As such, the per subscriber set-up costs would consist mainly of the costs incurred for the administrative work and for updating the databases and other support systems.

III. Cost Allocation and Recovery Principles

There are general principles that may serve to guide the development of a sound approach to cost allocation for MNP. These principles have been embraced by many countries including the United Kingdom and Hong Kong. These principles are as follows:

- Cost Causation – an approach of cost allocation should be based on the actions that caused the additional costs to be incurred. If a party causes costs, that party should then bear some responsibility for assuming those costs to encourage economically efficient behavior. If costs are as the result of a national policy decision, all parties will then have to bear their own costs.

- Cost Minimization – those who can affect cost should make every effort to minimize costs by doing things such as limiting the proportion of an operator's costs which can be passed on to others or regulating charges and only allowing an operator to pass on the costs which an efficient operator using the most effective technical solution could incur.

- Distribution of Benefits – cost allocation should recognize that the benefits of MNP accrue to callers; ported customers; users in general and the RNO.

- Effective Competition – cost allocation for MNP should serve to promote competition. Costs that the donor operator can pass on to the recipient operator should be limited as well as the price that will be charged to the porting customer so that it reflects a proportion of the costs.

- Reciprocity and Symmetry – cost allocation for MNP should, in principle, be reciprocal and symmetrical given that MNP is offered in both directions between network operators and service providers.

- Practicability – most importantly, an equitable approach to cost allocation should be easily implemented. In theory, each operator/service provider bearing its own costs can establish a level playing field for MNP to enhance the benefits of competition in the mobile market.

These principles are useful in assessing the merits of different cost allocation rules, but they do not lead to a single unambiguous set of rules. The principles are open to interpretation. Depending on the judgments made, it is possible to develop a variety of cost allocation rules. For Example, the Distribution of Benefits cost recovery principle that was referred to in MNP Regulations recognizes the external benefits of providing MNP apart from the private benefits accrued to the porting customers; these are the industry-wide benefits of enhanced efficiency by providing better coverage, better customer service, better service quality and better rate plans due to more intensive competition among the operators. The non-porting customers would also benefit from fewer misdialed calls. Also, there will be calls from fixed to mobile customers where some will be ported; therefore, the fixed customer's operator needs the CRDB to determine the correct route, otherwise, fixed operators will rely on mobile operators for correct routing.

IV. RESPONSIBILITY OF CHARGES

A. System Setup

1. Network Setup Costs:

These include network and equipment upgrades, billing systems, internal procedures, customer care, creation of local database and links, etc. These costs have to have been incurred before the first mobile customer decides to change operator and to keep his or her mobile number. As a matter of fact, it could be that calls to both the ported and non-ported mobile numbers would have to consult the local database before it is known whether or not the numbers have been ported. Therefore each operator (fixed or mobile) will bear its own cost, and these costs can be recovered by a variety of methods. It is the case that some regulatory authorities have left the determination of the specific recovery approach to the operators, as is the case in Australia. However, Australia is one of the few exceptions ,and by and large, the focus is on the approach that each operator will bear its own costs, as is the case in Hong Kong, Singapore, Belgium, and India.

Some of the possible cost recovery approaches examined are as follows:

- Each operator recovers the cost from its subscribers. Since all subscribers benefit from number portability, each operator would assess a small monthly fee to be levied on all of its subscribers. The goal would be to keep costs at a minimum since operators would want to keep monthly fees low or face the possible loss of subscribers. Additionally, the expectation is that the regulator would enforce a ceiling for the charges. This approach, directly based on the concept of cost causation, is the approach preferred by many regulators and has been used in the UK, Hong Kong, Singapore, the Netherlands, Switzerland and Denmark. India has also recently recognized that this approach may be the most suitable for its market.

- Through a fund created and financed by mobile operators based on their market share (based on revenue or number of subscribers), Such an approach may be one method intended to ensure that there is industry-wide sharing of costs. However, this approach is challenging and, bearing in mind that contributions would be based on revenue or the established subscriber base, this approach may mean that this might not create the right incentives to spur competition. Given that the development of MNP is in the early stages and will not be implemented until July 2006, this approach is not suitable for Jordan as it needs to commence deployment with a costing methodology that will encourage economically efficient behavior to spur competition. While many markets such as the UK, Netherlands, Ireland, France, Hong Kong and Germany have examined this fund approach, ultimately they have not relied on this as a means to recover system set up costs. In addition, this approach does not provide any incentive for operators to keep costs down since an operator will be reimbursed for costs incurred.

The TRC has decided that each operator (fixed or mobile) shall bear its own Network Setup Cost and may recover its own cost only from its own subscribers.

This approach has been adopted in Hong Kong, the United Kingdom and Singapore. The rationale for this decision is based on the following:

- The costs associated with long-term porting solutions pay dividends by allowing carriers to prosper in a more competitive marketplace. Key to opening the market is instilling the knowledge in customers or potential customers that they may choose an operator and, if unsatisfied, may move to one that better serves their needs.
- Whether those costs take the form of unrecoverable expenses or long-term investments is up to each operator.
- Expenses such as money spent for network upgrades can be recovered over time.
- If the operator chooses to upgrade its network accordingly, the capital investments can also open the door for long-term profits by allowing enhanced services such as those based on the Advanced Intelligent Network (AIN) architecture.
- Forward-thinking operators will use porting to spur the capital investment business cases necessary to stay competitive in the market.

2. Setup Cost (CAPEX) for Clearinghouse and CRDB :

This includes the cost of establishing the Clearinghouse functionality which depends on availability requirements, system architecture, number of ports and number portability processes and the cost of establishing the CRDB which depends on CPUs, system architecture, availability, total size, etc. This cost can be recovered by:

- Each mobile operator from its own subscribers.

- Through a fund created and financed by mobile operators depending on their market share (based on revenue or number of subscribers). Under this approach, network operators that are subject to portability obligations make a contribution to a fund intended to meet the costs associated with establishing a Clearinghouse functionality that will support portability. These contributions could be based on market share or quantities of numbers in the database for which each operator is responsible.
- Each operator pays based on the percentage of ported-in subscribers. In Singapore, there is a charge for porting subscribers that is agreed to by industry. At the present time, the charge is the equivalent of 4-5 Euros per month.

The TRC has decided that each mobile operator shall share equally in the Setup Cost (CAPEX) for Clearinghouse and CRDB, if any, and may recover its own cost only from its own subscribers.

The rationale for this decision is based on the following:

- As agreed in the Industry Forum, Mobile operators need a common party to monitor the ports, otherwise each operator would have to track and work with each other operator in order to affect ports. And no operator can stand alone once porting begins; all operators must participate in order to ensure fast porting process; therefore the Clearinghouse is a service used by each mobile operator.
- For implementing MNP, the CRDB is used to store mobile numbers only; therefore mobile operators shall share equally the CRDB Setup Cost.

B. Operational Cost (OPEX) for Clearinghouse and CRDB:

These include the Clearinghouse operational cost (staff, technical support, etc.), and the cost for updating the CRDB as well as generating and distributing a copy of the CRDB to connected local databases and this cost can be recovered by:

- Each mobile operator from its own subscribers
- Market revenue share through the fund
- Only connected operators pay the flat rate equally
- Each operator pays a percentage of ported in subscribers. In the United Kingdom and Hong Kong, the cost for porting numbers per customer is allocated to the recipient party. This has also been proposed in Sweden. In the United Kingdom and Hong Kong, it is then up to the recipient party to charge the porting customer.

The TRC has decided that each mobile operator shall pay equally for the Clearinghouse and CRDB Operational Cost.

The rationale for this decision is based on the following:

- The Clearinghouse is a service used by the mobile operator.
- The Clearinghouse is necessary for each mobile operator given that it provides information on the current status and the correct routing for inbound calls.

- The Clearinghouse provides data to the mobile operator on the number of ports completed, the number changed or disconnected and the time to affect a port to a competitor or to themselves.
- This cost must include the cost of the personnel and overhead of those who do the data entry and ongoing work of system creation and up keeping
- For implementing MNP, the CRDB is used to store mobile numbers only; therefore mobile operators shall pay equally for the CRDB operational Cost.

C. Additional Conveyance Costs

1. Cost for Conveying Calls Originated by Mobile Operators

These costs are the costs that mobile operators have to incur in order to consult the local database to route calls directly to the recipient (Direct Routing: All Call Query (ACQ)).

The TRC has decided that each mobile originator shall bear the cost for conveying calls originated from their networks.

This has been the approach taken in Belgium, Portugal and Hong Kong and the rationale for this decision is based on the following:

- The originator of the call should analyze the digits to deliver the call.
- If additional information to route is needed and there is a cost to obtain this information, the originator should pay the costs.

2. Cost for Conveying Calls Originated by Non-Mobile Operators

The non-mobile operator has the option either to choose Direct Routing/ACQ solution or to choose the Indirect Routing.

Should a Non-Mobile operator decide to choose the Indirect Routing option (i.e. Onward Routing, Call Drop Back, Query on Release, etc…) then the Non-Mobile operator shall negotiate to enter into a mutual agreement with either the DNO or any other third party to route calls originated from its network to a mobile operator's network, such mutual agreement shall be governed by the Interconnection Instructions. Should such negotiations fail the DNO shall offer to the Non-Mobile operator an Indirect Routing solution based on Onward Routing principles'.

The TRC has decided that Non-Mobile originators shall bear the additional charges for conveying its calls to the RNO in accordance with the Interconnection Instructions.

If the Non-Mobile operator decides to choose a Direct Routing option by establishing its own local database or sharing the local database with another operator; the TRC has decided that each non-mobile originator shall bear the cost for conveying calls originated from their networks.

D. Per Subscriber Administrative Fee

These are the costs that would not be incurred if there is no request for the mobile number porting services. The principle of cost causality implies that the responsibility of the per subscriber set-up costs should rest with either the porting mobile subscriber or the RNO.
In this regard, the TRC has estimated the work carried by the DNO to be about 10% of the work carried by the clearinghouse.

For purposes of comparison, Belgium charges a maximum of € 15; Denmark and Switzerland do not have a fee; the Netherlands charges € 9.08; Norway charges approximately NOK 85; and the United Kingdom charges up to £ 30. These represent a range of fees from 0 to 37 JD.

The TRC has decided that the RNO is responsible for each successfully initiated port request as agreed upon with the Clearinghouse, consequently the RNO will pay a fixed fee to the DNO not to exceed 10% of the charges paid to the Clearinghouse for each successfully initiated port request. The RNO may choose to waive all or part of the port request fees from the potential porting Mobile Subscriber; in addition the TRC finds that the Per Subscriber Fee should not generally exceed 7 JDs, however, the exact amount will be determined based on the successful clearinghouse offer.

The rationale for this decision is based on the following:

- The customer is the trigger for cost causation and the work is directly to its benefit.
- Where costs are incurred as a direct result of conscious actions by a subscriber, ie a port request, the subscriber would normally be charged a fee in relation to the services that have been requested.

V. Summary

The table below summarizes the companies' views presented during the 14th IFSC/MNP meeting and also includes TRC decisions.

Item	MC	FL	JT	XP	UM	TRC Decision
System setup (Network)	Each operator its cost	Each operator its cost	by mobile operators if any	by mobile operator / Market share through fund	Market share through fund	Each operator (fixed or mobile) bears its own cost; and may recover from its own subscribers.
Setup / CAPEX (Clearinghouse & CRDB)	Every operator equally	Every operator equally	by mobile operators if any	by mobile operator / Market share through fund	Market share through fund	Each mobile operator shares equally and may recover from its own subscribers.
OPEX (Clearinghouse & CRDB)	Proportional % of ported/ gained subscribers	Equally shared	by mobile operators if any	by mobile operator / Market share	Market share through fund	Each mobile operator pays equally
Additional conveyance (mobile)	Originator	Originator	Originator	Originator	Originator	Mobile Originator bears the cost
Additional conveyance onward routing (non-mobile)	Recipient	Originator	all mobile operators/ users	Originator	Originator	Originator bears the additional charges for conveying its calls to the RNO as per the Interconnection Instructions
Administration to be paid by recipient	Yes	Yes	N/A	back to back	Yes max 5JD	Yes, not to exceed 7 JD
Administration fees to be paid by subscriber	100%	Yes	N/A	100%	Yes (waivable to small operators only)	Yes -to recipient -may be waived in whole or part
Administration cost to be paid to	All parties	Donor clearing amounts	N/A	Clearing house (fixed)	clearing house only (and donor if controlled by regulator)	Donor and Clearing house

End of Statement