

**THE HASHEMITE KINGDOM OF JORDAN**  
**TELECOMMUNICATIONS REGULATORY COMMISSION**



**INFORMATION MEMORANDUM RELATED TO THE  
IMPLEMENTATION OF MOBILE NUMBER PORTABILITY  
IN JORDAN**

**TRC Board Decision No.( 1-1/2005 ) Date( 5/1/2005 )**

**TELECOMMUNICATIONS REGULATORY COMMISSION**

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1. The Telecommunications Regulatory Commission of Jordan (TRC), pursuant to the Government's Program for Further Licensing within the Mobile Telecommunications Sub-Sector (Program for Further Licensing), has determined that Mobile Number Portability (MNP) implementation in Jordan will enhance the development of competitive markets and expand customer choice in the mobile sub-sector. This Information Memorandum takes into account comments received pursuant to the Notice Requesting Public Comment on the Implementation of Mobile Number Portability in Jordan (Public Notice) issued on December 14, 2003. It serves as a companion document to the Instructions for Implementing Mobile Number Portability in Jordan (Instructions), issued by the TRC concurrently with this document.

**I. Background**

**A *Program for Further Licensing in the Mobile Telecommunications Sub-sector***

2. The TRC has embarked on a program for the liberalization of mobile telecommunications services in Jordan in accordance with policies established by the Government of Jordan. Over the last three years, the presence of a second operator has brought about some change in the market with more services and lower prices becoming available. The market, however, was not highly competitive and, as a result, Jordanian users of mobile service were not receiving the benefits of enhanced competition that are available to users in many other countries.

**B *Mobile Number Portability***

3. The licenses of the mobile operators require the licensees to implement number portability "subject to operational practicability, commercial viability, and the development needs of Jordan". In order to establish market conditions that provide maximum choice, consumers should be able to switch operators in order to take advantage of attractive service offerings. A major drawback to switching mobile operators at present is that customers must change their mobile telephone numbers if they change operators. The TRC's initial analysis of the technology available demonstrates the operational practicality of MNP, and the Government's Policy with respect to economic development points clearly in the direction of the kind of competition among telecommunications service providers that MNP is intended to foster. The TRC, based on its review of the technology costs and the experience in other markets is of the opinion that there are no impediments to introducing MNP based on concerns of "commercial viability". In fact, such concerns are addressed in this document and the associated instructions in which the TRC states its intent to work with an Industry Forum to define and recommend technological and operational solution for MNP and to establish an equitable means of allocating the costs of portability.

4. Mobile Number Portability ensures that customers can keep their current mobile number when switching from one service provider to another. From the user's perspective, number portability offers a great advantage in giving users the ability to switch mobile networks without the inconvenience and costs of changing their number. From the regulator's perspective, Mobile Number Portability should enhance competition among the network operators, create downward pressure on prices and facilitate participation by new market entrants.
5. The TRC's goal is to work through an Industry Forum to determine an approach to Mobile Number Portability that will expedite deployment of portability, minimizing modifications to an operator's switching equipment. The Mobile Number Portability should be easily implemented and not create any disruptions to an operator's network. From a practical perspective, operators would be required to make some modifications to their current billing systems and procedures to exchange billing information from one operator to another.

### ***C Issuance of Public Notice***

6. Pursuant to the "Program for Further Licensing", the TRC has determined that Mobile Number Portability will be introduced in accordance with the instructions that are to be issued by the TRC following public consultation.
7. As a first step to address the best method of implementing Mobile Number Portability and targeting implementation as early as possible, the TRC issued a public notice on December 14, 2003 seeking comment and inviting interested parties to file their written comments with the TRC on a number of issues related to the implementation of Mobile Number Portability in Jordan. All comments filed have been taken into account in the formulation of the final instructions for implementing Mobile Number Portability.
8. The deadline for submitting comments to the TRC was January 25, 2004. Comments were received from five interested parties: Fastlink, MobileCom, New Generation, Ciscom and Khaled Hudhud.

## **II. Legal Authority**

### ***A. Statutory Duties and Responsibilities of the TRC***

9. Pursuant to the Telecommunications Law of 1995, as amended by Law No. 8 in 2002 (hereinafter "Telecommunications Law"), the TRC was established and operates as a financially and administratively independent telecommunications regulator.<sup>1</sup> The Telecommunications Law assigns to the TRC specific responsibilities, including requirements that the Commission "stimulate competition," "ensure that its regulation[s] is effective and efficient," "forbid anti-competitive behavior or practices," and "forbid actions by any person to abuse a dominant position in the sector."<sup>2</sup> Article 6 of the Telecommunications Law specifically provides that the TRC

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<sup>1</sup>Telecommunications Law of 1995, as amended, at Chapter III, Article 4(a).

<sup>2</sup>Id. at Article 6(e).

has the following duties and responsibilities:

(a) To regulate telecommunications and information technology services in the Kingdom in accordance with the established general policy so as to ensure the provision of high quality telecommunications and information technology services to users at just, reasonable and affordable prices; and, by so doing, to make possible the optimal performance of the telecommunications and information technology sectors.

(b) To establish the basis for regulation of the telecommunications and information technology sectors, in accordance with the approved general policy, in such a way that services meet the comprehensive developmental needs of the Kingdom; in accordance with Decisions and Instructions issued by the Board for this purpose.

(e) To stimulate competition in the telecommunications and information technology sectors, relying on market forces, and so regulating them as to ensure the effective provision of telecommunications and information technology services and to ensure that its regulation[s] is effective and efficient; to forbid anti-competitive behavior or practices; to forbid actions by any person to abuse a dominant position in the sector, and to take all necessary actions in this regard.

(g) To encourage self-regulation by the telecommunications and information technology sectors.

(o) To assess the need for the adjustment of the level of, regulation of any telecommunication service, or specific type or group thereof, with regard to competition or any other factor that may require such adjustment or forbearance, and to recommend the same to the Board for approval.

10. The language of Article 6 specifically calls for the TRC to “regulate” or adjust its regulation to forbid anti-competitive behavior, stimulate competition and to protect users in the telecommunications sector. The implementation of Mobile Number Portability is crucial to ensuring competition among the service providers in the mobile sector and to protecting the user’s right to choose among the different service providers. The TRC, therefore, has the power to take any action necessary to carry out the duties and responsibilities detailed in Article 6 for the implementation of Mobile Number Portability in Jordan.

#### **B. Specific Powers of the TRC to be Exercised in Furtherance of its Statutory Responsibilities and Duties**

11. Article 12(a) of the Telecommunications Law lists the types of regulatory actions available to the TRC in carrying out its duties. It states: “The Board (of Commissioners) shall exercise all the necessary powers to carry out the duties entrusted to the Commission by virtue of this Law...”<sup>3</sup> The TRC has the authority, among others, to:

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<sup>3</sup> Telecommunications Law of 1995, as amended, Article 12(a).

(1) Study plans and proposals concerning the implementation of the general policy in the telecommunications sector, as approved by the Council of Ministers,

(2) Prepare programs and issue instructions and decisions, and to take the necessary actions in this regard.

12. Therefore, it is within the Commission's power to study proposals, prepare programs and issue instructions and decisions regarding the implementation of Mobile Number Portability in Jordan in furtherance of its duty to stimulate competition in the telecommunications mobile sub-sector.

### **III. Issues Related to the Implementation of MNP in Jordan**

#### ***A. Role and Involvement of the TRC***

13. The TRC believes it shall play a visible and active role in the implementation of Mobile Number Portability. This means that the TRC will oversee the establishment of an appropriate method to implement Mobile Number Portability and ensure the deployment of portability by setting reasonable deadlines for implementation. As the implementation of MNP evolves, the TRC will continue to maintain oversight over any procedural or technical issues and disputes that may arise. The TRC will also establish an independent Industry Forum to ensure neutrality in defining and recommending technological and operational solution to the TRC and to monitor technological developments with respect to Mobile Number Portability.

#### ***B. Definition of Mobile Number Portability***

14. The initial implementations of Mobile Number Portability shall refer to the ability of users to retain their mobile telephone numbers when switching between wireless mobile operators. As such, the concept of Mobile Number Portability is initially restricted to Service provider portability<sup>4</sup>, not Service portability<sup>5</sup> nor Location portability<sup>6</sup>.

#### ***C. Costs***

15. Implementing Mobile Number Portability will involve some costs. These costs generally include set-up costs, which comprise network and equipment upgrades to establish and implement number portability. There are also migration and administrative costs that may occur when a number is ported or when migrating from one carrier to another along with costs resulting from the establishment of a numbers database. The system set-up, additional conveyance, and per-subscriber set-up costs best reflect the range of costs associated with implementing Mobile Number Portability in Jordan. The TRC will work with the concerned parties through the

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<sup>4</sup> Service provider portability: The ability of an end user to retain the same E.164 international public telecommunication number when changing from one service provider to another.

<sup>5</sup> Service portability: The ability of an end user to retain the same E.164 international public telecommunication number when changing from one type of service to another.

<sup>6</sup> Location portability: The ability of an end user to retain the same E.164 international public telecommunication number when moving from one location to another.

independent Industry Forum to ensure that the cost recovery process is equitable in terms of ensuring the appropriate allocation of costs resulting from the introduction of Mobile Number Portability between operators.

16. All mobile users should share in the costs of the system set-up and additional conveyance, and that the cost allocation principle of “distribution of benefits” is based on grounds that economic efficiency is enhanced when parties benefiting from a feature share in bearing its costs.

#### **D. *Tariff Transparency***

17. Mobile Number Portability may reduce Tariff Transparency<sup>7</sup> for mobile users because of the tariff difference that often exists between on-net and off-net calls from mobile networks. In a portability environment, users lose the capacity to distinguish between on-net and off-net calls based on the initial digits of the number.
18. It will be useful to users to be able to predict the price of calls to mobile numbers even when mobile numbers are ported.
19. In the United Kingdom, Portugal and other European countries, the tariff transparency problem has generally been addressed by ensuring that mobile users have access to information (which may be provided via a recorded or live telephone information service or an SMS service) that enables them to identify that a number now belongs to another mobile network. Finland requested the establishment of a free phone number “from where customers can ask which network the number in question belongs to.”<sup>8</sup>
20. An alternative approach, currently being considered in Ireland, is to provide an audible warning (a tone alert or announcement) at the beginning of a call when the number is dialed to indicate that it will be charged at an off-net rate. This could potentially give the caller the option to abandon the call at no charge. Under the tone alert approach, the aural signal would be generated and inserted by the originating mobile network and receipt would not be dependent on the functionality of the originating customer’s handset.
21. Another approach is to restrict the tariffs charged. With tariff constraints, all calls to mobile numbers with the same initial digits as those of the caller’s number are charged at the on-net tariff to the caller, including those that have been ported to other networks. This approach may work well during the initial period when MNP is introduced when the volume of numbers ported is small, so restricted tariffs is very restrictive, particularly when starting from huge on-net/off-net differentials.
22. The Industry Forum shall consider an approach to reduce the Tariff Transparency problem for mobile users. However, the information services approach or the aural signal approach would offer better solutions than tariff restriction, where as tariff restriction is an issue suitable for the Industry Forum to decide.

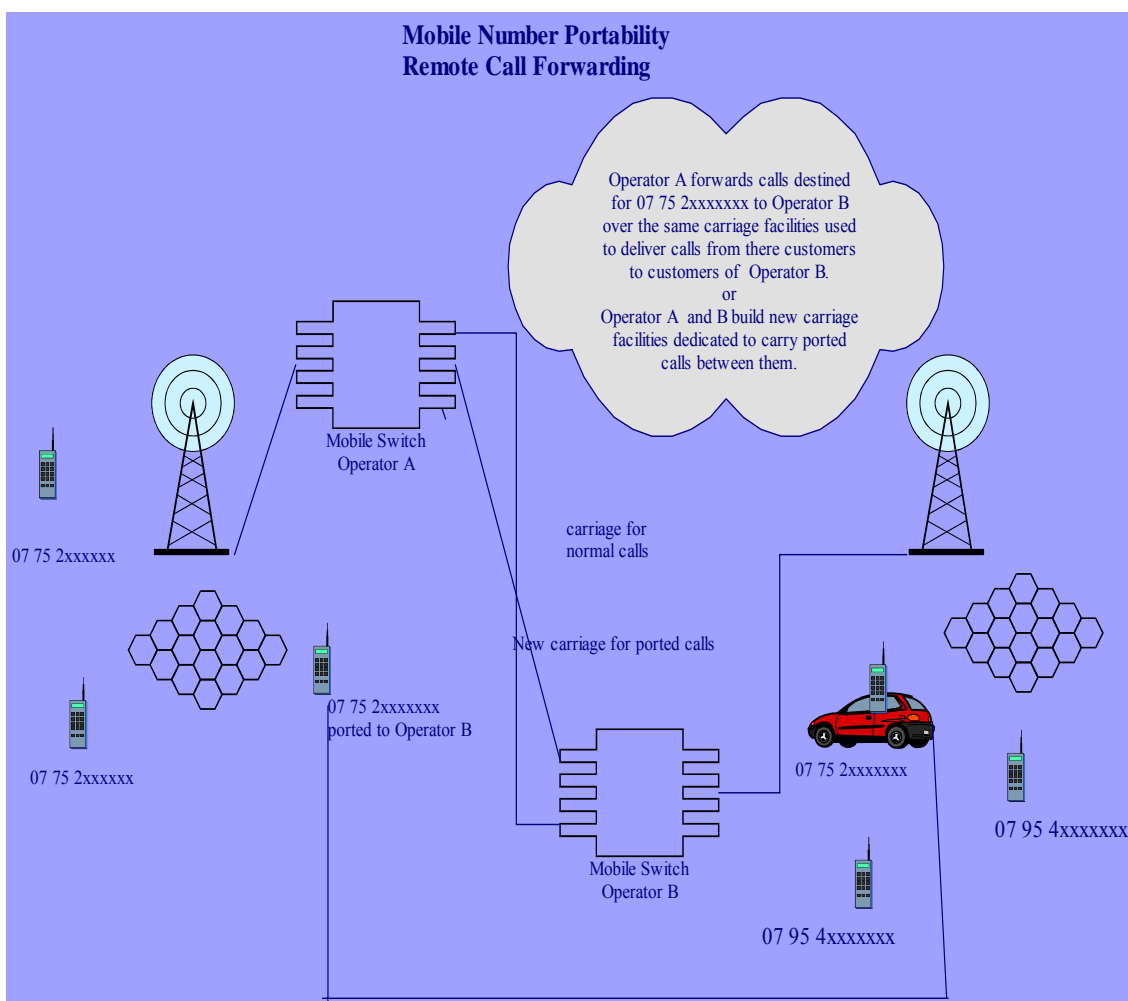
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<sup>7</sup> Tariff transparency: The ability of a caller to determine the price of individual calls accurately and easily in advance of making them.

<sup>8</sup> Comment submitted by Khaled Hudhud to the TRC pursuant to the Notice Requesting Public Comment on the Implementation of Mobile Number Portability in Jordan (Public Notice) issued December 14, 2003.

### E. Interconnection

23. Interconnection between carriers allows the delivery of calls or messages between carriers. For the purpose of delivering a call destined to a number ported from the donor carrier to the recipient carrier, the donor carrier will deliver the call on the same carriage medium as all other calls destined for that carrier. The Figure below provides a high-level pictorial of Remote Call Forwarding solution. Depending on volume and engineering decisions carriers may decide to create new carriage (trunk) to determine cost causation and cost recovery between them. This option should be explored in an Industry Forum and a recommendation made as to how this should best be implemented for Jordanian carriers. Carriers will want to choose a method(s) of call delivery appropriate for their situation and the final solution chosen for porting.



### F. Third Party Clearinghouse

24. For effecting a port from the donor to the recipient carrier, communication of pertinent customer and carrier information is necessary. Some countries call this the Inter-carrier Communication Process (ICP) not to be confused with Interconnection for call or message completion. Several methods are available to accomplish inter-carrier communication of business information about a ported customer. The most

straightforward method is direct communication between the carriers. This method typically requires additional staff, new processes and manual methods such as paper, facsimile, or phone call. Another method is to engage an intermediary third party clearinghouse to allow the passing of customer identifying and carrier data. Types of data for example could include customer name, billing address, mobile number and carrier routing, time frames, business hours and other carrier specific information. The purpose of the clearinghouse is to provide a mechanized method to allow the donating carrier to confirm back to the recipient carrier that the customer is valid, be advised that the customer is changing carriers, protect certain restricted accounts, and allow status tracking during the port set up period.

25. The interconnection solution should be an industry-wide solution, subject to discussion within an Industry Forum<sup>9</sup>.
26. The establishment of a third party clearinghouse could facilitate the implementation of Mobile Number Portability in order to make it more administratively efficient. A third-party ICP clearinghouse could minimize the number of different processes a service provider would require to communicate with every other carrier. The ICP clearinghouse method is less manually intensive for a carrier, however the start up and ongoing fees are a consideration. Among the benefits of a clearinghouse are management and maintenance of current and historical information of all associated trading partners and all ported numbers, reduction of service provider operational costs, and additional services such as message validation and reporting. Additionally, a third party clearinghouse might employ the expertise it gains in Jordan to export its services and Jordanian human resources to the whole region.<sup>10</sup>

#### ***G. Technical/Architectural Solutions***

27. For the implementation of mobile provider portability, several technical solutions exist, including Call Forwarding, Intelligent Network and Database, Signaling Relay, and Call Diversion.
28. The licensed operators are required to study and address in the Industry forum the available solutions such as Signal Relay Function (SRF), Intelligent Network (including the option of centralized database model) as well as others to reach an agreement as soon as possible.

#### **H. Number Databases**

29. As a long-term solution, a centralized database model would be the most suitable for Jordan. The observation that the technical solution also depends on the take up rate by clients is correct.<sup>11</sup> A greater degree of mobile competition is expected, making the

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<sup>9</sup> Comment submitted by Fastlink to the TRC pursuant to the Notice Requesting Public Comment on the Implementation of Mobile Number Portability in Jordan (Public Notice) issued December 14, 2003.

<sup>10</sup> Id.

<sup>11</sup> Comment submitted by New Generation to the TRC pursuant to the Notice Requesting Public Comment on the Implementation of Mobile Number Portability in Jordan (Public Notice) issued December 14, 2003. "If the take rate is low, then a common managed number range may be the best solution. If the take rate is high, then a centralized database will be mandatory."



centralized database the best long term solution. The database can be set up at a central location for all operators, or it can be central with a replica at each operator.<sup>12</sup>

### ***I. Procedural Issues***

30. There are several procedural issues involved in the implementation of number portability, including authentication, refusal to port, time to port and bulk porting.

#### ***a. Authentication***

31. The authentication procedure in the porting process ensures that the person requesting that a number be ported is authorized to do so. It also serves as a safeguard to consumers against the unauthorized transfer of customers through misleading behavior. Some important considerations are: whether authentication is to be performed via reference to account records or other documentary evidence; who performs the authentication; how the parties involved in the authentication can communicate to each other; and the level of trust between the parties involved. Some of the methods used by mobile operators in Europe include:

- The donor operator verifies that the person requesting a port is the same as the assignee of the number mentioned in the request, using the customer's account number, name etc. as key.
- Same or similar authentication methods as those used for new mobile services.
- Call made to the number to be ported to minimize risk of fraudulent requests.

32. It is likely that the Industry Forum could serve an active role in determining the technical long term solution to be implemented and developing an accompanying timeline and procedures for porting. The operators must all agree on the authentication process to be used by the clearinghouse. The process should be discussed and agreed to at the Industry Forum.

33. To minimize the risk of "slamming"<sup>13</sup> and to avoid unscrupulous behavior by the operators in attempting to "recruit" customers to port, the TRC recommends that a Customer Transfer Code be developed by the Industry Forum to protect customers and to serve as a guide for acceptable industry practices in obtaining the transfer of a customer's service(s). Therefore, any licensed operator that commits a fraudulent port shall bear all the costs for reversing the port and shall be subject to penalty in accordance with the Telecommunications Law and TRC Regulations.

#### ***b. Refusal to port***

34. Mobile operators should institute "barrier free" porting obligations, and should not refuse a valid porting request except under specified circumstances as agreed and established by all operators in an Industry Forum. The institution of business

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<sup>12</sup> Comment submitted by Khaled Hudhud to the TRC pursuant to the Notice Requesting Public Comment on the Implementation of Mobile Number Portability in Jordan (Public Notice) issued December 14, 2003.

<sup>13</sup> "Slamming" is the illegal practice of changing a consumer's telephone service without permission

processes including special identifications, pins, and other methods to restrict a customer from porting are barriers. With a few minor exceptions to be agreed upon in the Industry Forum, all customers may choose to port without traversing unnecessary barriers. In determining what is a reasonable ground to refuse a port, the donor operators can still legally enforce breaches of contractual obligations such as early termination and outstanding debts while permitting a valid port request to proceed. Donor operators should not refuse a port request merely to settle a contractual dispute with the customer, which can be easily resolved pursuant to traditional contractual remedies. In this regard, the refusal to port is not an acceptable way to enforce contractual obligations, and as such, that it is not reasonable to refuse porting when the term of the user's service contract is not complete or an outstanding debt is associated with the user's account. Porting terminates a customer's existing contract with the donor operator, but a customer's contractual obligations with the donor operator remain until they are fulfilled or resolved.

*c. Time to port*

35. The porting or transfer period (the time lapse between the time of terminating the ported number by the donor operator and the time of connecting that number by the recipient operator) is an inter-carrier process whereby the donor and recipient operators perform the technical steps for porting. The customer may start the porting procedure by contacting the new (recipient) operator to authorize it to port. The customer should not terminate his or her existing service as the recipient operator uses the transfer period to verify the customer's porting application with the donor operator. Throughout the porting period, there is no interruption of service while the operators verify the customer information, and the customer can continue to use his or her mobile phone number. When the porting procedure is completed, the recipient operator will notify the customer whether the port was successful or when it will be successful.
36. Regarding the porting time, the TRC finds that up to one day is adequate timeline for porting. Once porting has commenced and if the process has been operating smoothly; a new time for porting shall determined by TRC after due consultation with mobile operators and clearinghouse.
37. Mobile operators shall issue customer education guidelines that outline porting procedures in order to better inform customers and to ensure a smooth porting transition.

*J. Scope of Mobile Services that will be Portable*

38. The Industry Forum shall decide on the range of mobile services that will be portable. In the beginning, the ranges of mobile services that will be portable shall be at least the mobile voice numbers. Once voice portability is achieved, the Industry Forum shall address the portability of other mobile services.

**IV. Implementation Plan**

39. All operators, including all new entrants, will implement Mobile Number Portability. Therefore, it is the goal of the TRC that a realistic implementation plan be established

by the Industry Forum and filed with the TRC for approval. While also recognizing that the expediency by which Mobile Number Portability is implemented will result in greater choice for consumers and enhancement of mobile competition.

## **V. Conclusion**

40. Based on TRC authority under Article 6 of the Telecommunications Law to stimulate competition in the telecommunications sector, to forbid anti-competitive behavior and practices, and to ensure that regulations are effective and efficient. The enforcement of Mobile Number Portability will ensure competitiveness in the mobile telecommunications sub-sector and allow consumers to take advantage of the benefits of competition. Mobile Number Portability is expected to substantially lower the costs of changing service providers by giving customers a greater choice of products and services from different providers.