T-Systems response to request for comments on Number Portability in Singapore

Info-Communications Development Authority of Singapore

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T Systems

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1. Introduction

T-Systems is submitting this document of comments to the Info-Communication Development Authority of Singapore (iDA) in response to its request for Public consultation on the review of Number Portability in Singapore.

The purpose of this document for iDA is

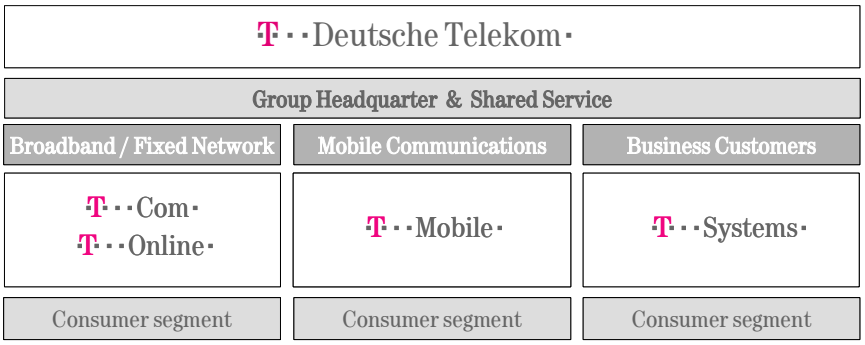
1. to comments on the questions raised by iDA based on the views and experience of T-Systems.
2. to provide views on the proposed approach by iDA to improve portability in Singapore.

2. T-Systems Profile

2.1. T-Systems within the Deutsche Telekom Group

T-Systems is one of three pillars of the Deutsche Telekom group, the others comprising T-Com & T-Online, and T-Mobile. T-Systems is the ICT arm of Deutsche Telekom group. It provides Managed Services to the wireless and fixed line business of Deutsche Telekom, its affiliates, and its Telco partners cum customers. It is a Euro 10.5 Billion revenue company with 44,000 staff. In Asia Pacific, we currently have 400 employees and expanding. We are present in both North and South Asia, Singapore being the regional headquarter for the South Asia region.

The parent company Deutsche Telekom is one of the largest companies in the world, with Euro 63 billion revenue, 256,000 employees, approx. 130 million customers, and international subsidiaries and affiliates in over 60 countries. Deutsche Telekom owns Telekom Global Net a network infrastructure available in all major global centers of business and >150,000 km land/submarine cables. Supported by T-System, it has a follow-the-sun approach for control centers on three continents to ensure smooth 24/7/365 operation.



Our Group offers integrated solutions from its core business areas - mobile communications, Internet, fixed-line networks and system solutions - from a single source. Worldwide, more than a hundred million private subscribers and business customers profit from our innovative products and services.

3. iDA Document - PART VI

INVITATION BY iDA TO COMMENT

IDA would like to seek the views from the industry and members of the public on the issues and proposals raised in this consultation paper. This will allow IDA to have a better understanding of the issues and the needs of the interested parties. The questions are listed again below:

3.1. Questions (1)

IDA has identified that developments in the info-communications sector, namely the development of technologies, increasing competition within the same markets, and fixed–to-mobile substitution, warrant a review of our existing number portability implementation for fixed and mobile services.

IDA welcomes views and comments on whether the existing number portability implementation for fixed and mobile services remains relevant and able to support future industry and market needs.

Comment:

FNP: In certain circumstances the existing QoR-solution could be operated in parallel with the intended QoD-solution. This could be the case if the QoD is only applied to a dedicated range of destinations, i.e. to all calls within one exchange area. All other calls then would use the existing QoR-mechanism. For both the QoD and the QoR solution the IN query mechanism will be similar. Hence the decision for one of the above methods is actually up to the network providers and should be made with regard to the ratio between the number of queries and number of calls to ported destinations. Based on these assumptions the existing number portability implementation could be kept and simply extended by means of a centralised database. This centralised database should be accessible to all network providers in order to update their own databases or query servers.

MNP: Because of the number of disadvantages of the existing call forwarding method in combination with using additional telephone numbers for portability purposes this solution is not expected to be relevant in the future. The use of a centralised database in conjunction with the ACQ method delivers a better resource utilization and higher potential for adherence to future market trends. By usage of the ACQ method, the responsibility for all network switching activities is with the recipient network operator who will consequently take all necessary provisions for market penetration with any innovative service. In the current CF scenario, there still resides part of the switching activities with the donor network operator, which can potentially lead to suppression of competition.

Abbreviations:

QoR Query on Release: The query for new destination is done upon reception of release-message from the original addressed destination.

QoD Query on Digitanalysis: The query is done for a dedicated range of destinations upon initiation of call.

ACQ All Call Query

CF Call Forwarding

3.2. Questions (2)

IDA notes that there are several shortcomings within the existing MNP solution. While the penetration rate is high in the mobile telecommunication market, IDA believes that these shortcomings need to be addressed so that the barriers to switching (with the MNP solution) will be lowered and end-users will further benefit from enhanced competition.

IDA welcomes views and comments on IDA's assessment of the shortcomings on the existing MNP solution. Are there other shortcomings that need to be addressed?

Comment

Since actually two calls are established for one ported destination, a higher effort for the mobile network providers in their charging, accounting and interconnection processes is caused. Furthermore, the current CF solution requires a higher amount of innovation resources especially with the smaller service providers as they have to make provisions for every newly developed service to comply with the existing MNP solution.

IDA also welcomes industry and in particular, consumers' feedback on their views and experience with the existing MNP services in Singapore. Specifically, IDA requests feedback on the following:

Is the ability to retain your telephone number a critical consideration for switching from your current service provider to another service provider? What other factors would you consider before switching to another service provider?

Comment:

For questions (i) – (iii): Not commented on this since these questions are directed at the consumers.

Have you considered obtaining MNP service when switching to another service provider but have been

reluctant or discouraged from doing so? What are the reasons for not using MNP service?

Comment:

For questions (i) – (iii), Not commented on since these questions are directed at the consumers.

Do you think the existing MNP solution is adequate, e.g., pricing, porting timeframes, settlement of outstanding charges and other performance experience? What aspects of the MNP solution could be improved upon?

Comment:

For questions (i) – (iii), Not commented on since these questions are directed at the consumers.

Consumers may provide feedback to IDA by email to: info@ida.gov.sg

3.3. Questions (3)

IDA welcomes views and comments on the impact of the entry of IP Telephony and WBA players on the existing FNP implementation. Will the FNP solution be able to support these players effectively? What are the areas that IDA needs to consider and address in the FNP implementation?

Comment:

The FNP solution which is based on a centralised number portability database will fit also the needs of IP Telephony and WBA players. The centralised database should be accessible by all of the network providers in order to update their own databases and put changes on the centralised database. So this solution is independent from underlying network technology as long as public telephone numbers are used for instance for VoIP-accounts.

IDA also welcomes industry and in particular consumers' feedback on their views and experience with the current FNP services in Singapore. Specifically, IDA requests feedback on the following:

Is the ability to retain your telephone number a critical consideration for switching from your current service provider to another service provider? What other factors will you consider in switching to another service provider?

Comment:

For questions (i) – (iii), Not commented on since these questions are directed at the consumers.

Have you considered obtaining FNP service when switching to another service provider but have been reluctant or discouraged from doing so? What are the reasons for not using FNP service?

Comment:

For questions (i) – (iii), Not commented on since these questions are directed at the consumers.

Do you think the existing FNP solution is adequate, e.g., pricing, porting timeframes, settlement of outstanding charges and other performance experiences? What aspects for FNP solution should be improved upon?

Comment:

For questions (i) – (iii), Not commented on since these questions are directed at the consumers.

Consumers or members of the public may provide feedback to IDA by email to: info@ida.gov.sg.

3.4. Questions (4)

IDA has identified various areas for review with regard to the existing number portability implementation. These include administrative arrangements, technical solutions and commercial arrangements. IDA notes that a centralised database approach has been adopted in many countries due to benefits it offers. IDA also notes that with respect to the technical routing solutions, the Direct Routing/ACQ method has been adopted as the preferred method, as it provides a long-term, optimised call routing solution.

IDA welcomes views and comments on the use of a centralised database approach in implementing number portability and the Direct Routing/ACQ for routing calls. Specifically, IDA welcomes views and comments on the following:

The advantages and disadvantages of implementing number portability using a centralised database approach;

Comment:

Advantages:

- all network providers use the same database
- centralised DB is kept up to date by the network providers
- all network providers have maximum flexibility in implementing number portability solutions in their networks

- deployment of a centralised database facilitates independence of NP solution from switching and signaling technology which is used in the networks
- no data inconsistencies between the ported number databases of different service providers
- minimized effort for operation of ported number database as a single instance

Disadvantages:

- high effort for negotiations between the service providers on central database design and communications interfaces

Please note: - synchronisation / comparison of NP-databases of the network providers is probably not done in real time

Should the centralised database be run by the operators (e.g. a consortium of the operators) or by an independent and neutral party (e.g. a third party vendor)? What are the pros and cons of each option identified or proposed?

Comment:

A centralised database operated by only one operator (network provider) would concatenate the business risks of this operator with the operation of the database.

A consortium of operators would at least weaken the above issue, but still involves some risks concerning the prevention of discrimination of particular operators. Furthermore bilateral agreements are time consuming and therefore not recommended.

The likely cost components and cost estimates in implementing a centralised database in Singapore? What are the commercial or charging arrangements that can be considered when implementing a centralised database, e.g., should the charges be apportioned or recovered from operators based on equal sharing, usage, market share etc? What are the pros and cons of each of these options identified?

Comment:

- server hardware
- server software and licences
- specification, implementation and testing
- operation (resources and locations)

The CDB operation could be outsourced to a ICT service provider, that could be charged on a per-transaction basis. The transaction cost could be attached to the recipient network operator, as this is the one who has most interest in successfully completing the porting operation. The donor network operator, on the other hand, will most likely charge his transaction cost from the

ported-out customer in the form of a one-time charge for the porting. The charging on a per-transaction basis contains a certain risk for the ICT service provider as the cost depends strongly on the transaction volume which generally is not known in advance.

What are the pros and cons of Direct Routing/ACQ versus Indirect Routing? What issues and factors need to be considered in deciding which method to adopt? What are the likely cost components and estimates in implementing a Direct Routing/ACQ in an operator's network?

Comment:

Using ACQ causes one NP-query per call. In case only a low number of destinations in the network are ported the ACQ method doesn't work very efficient. Using ACQ is sensible if a high number of ported destinations is given or expected in the future. Likely cost components are: deployment of network operator specific NP-databases (usually IN-SCPs or NAR - network address register) if necessary and hardware-extension due to increasing query-load.

abbreviations:

IN-SCPs Intelligent Network – Service Control Point

What impact would the use of a centralised database and change in technical routing solutions have on other industry players, such as the mobile content and application service providers,? IDA notes that currently some mobile content and application providers rely on the phone numbers N1 (the ported customer's original phone number in the Donor Network) and N2 (the new phone number assigned to the ported customer in the Recipient Network) of a ported customer for proper authentication and billing purposes. Will mobile content and application providers benefit from a centralised database approach?

Comment:

Since the second phone number is not longer needed for the new solution a positive impact on the implementations of these providers is to be expected. Since only one phone number is relevant the authentication and billing processes could be simplified.

What is the impact on downstream markets, e.g. telecom equipment dealers and existing ported customers? If so, who are the affected parties and what are these impact?

Comment:

Actually no impact is expected. In the case telecom equipment dealers offered solutions which ease the perceptible shortcomings of existing NP-solutions to ported customers there might probably be a positive impact because of lower efforts for these workarounds

Are there other implementation issues IDA should consider in its number portability review?

Comment:

For the time being, we don't see any other issues.

3.5. Questions (5)

IDA notes that in Singapore, the number levels have been associated with the particular type of service. However, the association of number levels with a particular service may no longer be sustainable due to technological and market developments. Therefore, it may not be critical or useful for end-users to identify a particular number with the type of service. IDA welcomes views and comments on possible implications of allowing inter-modal number portability (i.e., porting numbers between different services) and the delinking of a particular number level with a type of service.

Comment:

Some of the service numbers imply the costs which are to be expected for using the service. (i.e. freephone, premium rate, network internal ...). The delinking of a particular number level with a type of service could deter customers from using these services. Number portability and especially inter-modal NP will automatically lead to a dissolution of the existing association of number levels and service types. From the customer's point of view, the negative effects on cost transparency could be diminished by a centrally provided service that offers the costing information to the customer. Such a service could be implemented e.g. via the web on the basis of a central database approach.

3.6. Questions (6)

IDA notes that in addition to having a centralised database infrastructure for number portability, such infrastructure can be expanded to support other common platform services. IDA welcomes views and comments on how the centralised database infrastructure can support and develop other aspects of the info-communications market, in particular content development. Are there other services and applications that can leverage on such infrastructure?

Comment:

We do not think that telecom network operators will give up control over network resources or even customer data to third parties e.g. content providers. This leads to business scenarios where telecom network operators build up complex billing and revenue sharing mechanisms prior to making business critical data directly available to third parties.

3.7. Questions (7)

IDA has proposed to adopt a centralised database approach for implementing number portability. The implementation of number portability must fulfill the number portability requirements set out by IDA. IDA also requires that mobile operators resolve all shortcomings in the MNP solution identified above. As a start, all existing fixed line operators (including IP Telephony service providers allocated with number level "6") and mobile operators should interface with the centralised database to implement FNP and MNP.

IDA welcomes views and comments on IDA proposed approach set out above to implement the number portability in Singapore. Specifically, IDA welcomes views and comments on the following:

The feasibility of using a centralised database approach for fixed and mobile number portability services in Singapore, in light of technology and market developments;

Comment:

The feasibility of a centralised database for number portability is given. Since this concept is independent from underlying network technology it equally covers all the current requirements and the future needs.

IDA's proposed number portability requirements to achieve the desired outcomes of number portability as set out in Annex 3; and

Comment:

The requirements of IDA stated in Annex 3 can in T-Systems view only be fulfilled by the planned combination of a centralised database approach in conjunction with ACQ/Direct Switching.

IDA believes that 9 months is a reasonable and adequate time for implementation of a new number portability solution. If respondents feel otherwise, please justify in detail why the timeframe is insufficient.

Comment:

9 month would be a realistic timeframe for the implementation within one network or the implementation of the centralised database itself. But some of the vendors of telecommunication equipment might have predefined release intervals to provide technical updates to existing equipment. With regard to such restrictions the needed timeframe for complete support of the solution by all network operators should be negotiated and agreed. Furthermore, a timeframe of 9 months might not be sufficient if the administrative procedures and commercial frameworks between the service providers still have to be negotiated.