

TELECOMMUNICATIONS NUMBERING ADVISORY COMMITTEE

Direct-Dialling-In (DDI) Circuit-to-Number Ratio for IT-based Value-added Services

Purpose

This paper invites Members to consider the circuit-to-number ratio for the assignment of Direct-Dialling-In (DDI) numbers by Fixed Telecommunications Network Services (FTNS) operators to IT-based applications, such as Unified Messaging Systems (UMS), fax gateway, etc. These services are normally characterized by the provision of value-added telecommunications services to the customers by using their existing PABX equipment and specialized IT systems through dedicated DDI numbers.

Background

2. The assignment principles of fixed network numbers to DDI services to customers of PABX systems are specified in the Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan. The salient points are:

- i) To cater for DDI numbers requirement of a customer installed with a PABX system, FTNS operators will assign DDI numbers in a basic quantum of 100.
- ii) If customers have actual requirements of using more than 100 DDI numbers, the FTNS operators can assign in multiple of 100 DDI numbers to the customers according to the circuit-to-number ratio of 1:12.5.
- iii) For exceptional cases where customers (such as hotels) with relatively low traffic volume per PABX extension compared with the ordinary office operation, the FTNS operators can assign DDI numbers (in multiples of 100) to cater for the users' requirement according to the actual number of installed extensions.

3. Recently, OFTA has received several enquiries on the possibility of obtaining more DDI numbers than what is permitted under the 1:12.5 circuit-to-number ratio. There are certain new applications that call for the assignment of more DDI

numbers. A proposed application is the fax gateway server. Some corporate customers would like to assign personal fax numbers to their employees through the existing DDI lines such that incoming fax calls can either be received by their personal fax machines, or can be forwarded to the respective email accounts of the employees through a fax gateway server.

4. Another application is the deployment of UMS in local area network. The UMS is an automated system that can handle voice messages, fax, and e-mails as objects in a single mailbox for retrieval by users through a regular e-mail account. Employees of a corporation can use their computers to play back voice messages and to view fax messages over LAN. In that case, assignment of additional personal fax/UMS numbers are required even if there is in fact not any physically installed customer premises equipment. The amount of DDI numbers required for these applications may therefore well exceed the number of equipment or even the number of users as each user may hold multiple accounts. In this connection, it is considered necessary to address the use of DDI numbers by these types of applications.

Considerations

5. The current circuit-to-number ratio of 1:12.5 was previously proposed in the NAC Paper No. 9/2000 and was supported by the Telecommunications Numbering Advisory Committee. The figure is derived from commonly accepted industry practices and also achieves a balance between the communications needs of corporate users and the efficient utilization of fixed number resources. As the adoption of any lower circuit-to-number ratio will have a direct impact on the rate of consumption of the fixed numbers, it is therefore crucial for OFTA to ensure that the DDI numbers are assigned and utilized efficiently.

6. OFTA considers that some of the above-mentioned new applications may not attain efficient use of the number resource. Given that the traffic volume for fax calls can be much lower than voice calls, the personal fax numbers are likely to be under-utilized. Secondly, the personal fax numbers may be mixed with other numbers in the same DDI number block, thus making these number blocks difficult to recycle even if the personal fax numbers are to be relinquished. Thirdly, the use of UMS does not require the physical installation of any fax machines, but doubles the requirement for DDI numbers. The usage of the additional numbers assigned may then be difficult to control. Large scale deployment of the technology will impose a significant impact on the available number resource.

7. In order to conserve the number resource for fixed services, the corporate customers are encouraged to fully utilize the currently assigned DDI numbers. They can also employ other better technical solutions or internal administration methods to minimize the amount of DDI numbers required. As a matter of fact, some feasible methods that make better use of the DDI numbers are available. They include:-

- i) A prime number for fax calls, with extension numbers assigned to employees of a corporation, can be used. To send a fax message to an employee, the caller can dial to this prime number. When the call is answered, he will then be prompted to enter the respective extension number of the employee. The call will then be routed to the respective fax machines or the email accounts of the employee.
- ii) The personal fax numbers can be assigned only to secretaries who can then forward the fax messages or email messages to a group of employees.
- iii) Some manufacturers have developed specialized line cards for PABX systems that can automatically detect the type of incoming calls, i.e. voice or fax, and re-route the calls to telephones or fax machines/email accounts according to the call type.

8. With the above considerations, OFTA intends to maintain the current circuit-to-number ratio for the assignment of DDI numbers by the FTNS operators. It is understood that the common practice in PABX trunk dimensioning will render some spare DDI numbers assigned under the current circuit-to-number ratio. In this regard, OFTA appeals to the corporate users to fully utilized these spare numbers in their IT-based applications in order to making efficient use of the number resource.

Advice Sought

9. Members are invited to comment on the proposal to maintain the current circuit-to-number ratio for DDI number assignment.

Office of the Telecommunications Authority
August 2003