What is ENUM?

Brief Overview of ENUM:

ENUM is a technology and software that essentially converts a telephone number into a domain name. For example, my phone number in Washington, DC is 1 (the U.S. country code)-202-123-4567. If someone trying to contact me was on ENUM-capable equipment (either on the telephone if it is connected to the internet, or on the internet), he or she would type in my telephone number and the ENUM application would automatically convert the telephone number into a domain name. ENUM would do this by reversing the numbers and inserting a "dot" between each number, as follows: 7.6.5.4.3.2.1.2.0.2.1. Then "e164.arpa" is added onto the end, so the domain name is as follows: "7.6.5.4.3.2.1.2.0.2.1.e164.arpa." "E164.arpa" is the ENUM standard used to translate telephone numbers into IP addresses.

The user only needs to enter the telephone number — the software will automatically reverse the digits and convert it to a domain name. Essentially, the phone number is made into an Internet address that accesses a database of information related to that phone number. The "record" that is found at the domain name will include contact information for the person whose telephone number was entered — described as a "giant business card." The record that is pulled lists contact information, such as my e-mail addresses, home and cell telephone numbers, fax numbers, best hours to reach me, preferred method for reaching me ("call cell phone first"), etc. Thus, someone could access my "giant business card" by having only one telephone number (202-123-4567).

> — *Excerpted from March 6, 2003 Memorandum From*
> *Rebecca Duke to Eric Fishman, Holland & Knight*

The Basic Concept:

ENUM is a proposed international public database that links telephone numbers to Internet names and other Internet related destinations and identities. Any party can interrogate the database with the telephone number of an ENUM subscriber and the database will return a list of identities and Internet related destinations that are associated with the subscriber; examples are the subscriber's email address, mobile telephone number or web page. These identities can then be used to establish various forms of communications with the ENUM subscriber, e.g. the party could send an email to an ENUM subscriber having initially known only their telephone number. The ENUM database can be used both by human users and by electronic processes (applications) that are providing other forms of communications services.

Figure 1 shows how ENUM works. Caller A (the ENUM End user) wishes to communicate with Called B (the ENUM Subscriber). Caller A knows B's telephone number and interrogates ENUM with the telephone number. The ENUM database holds information about B's communications facilities and optionally his current preferences for receiving incoming communications. The ENUM database returns this information to Caller A and then A decides

how to communicate with B and initiates a normal form of communication using whichever of the identities and forms of communications seem most appropriate. For example, Caller A could use ENUM to find out B's email address and then send an email.
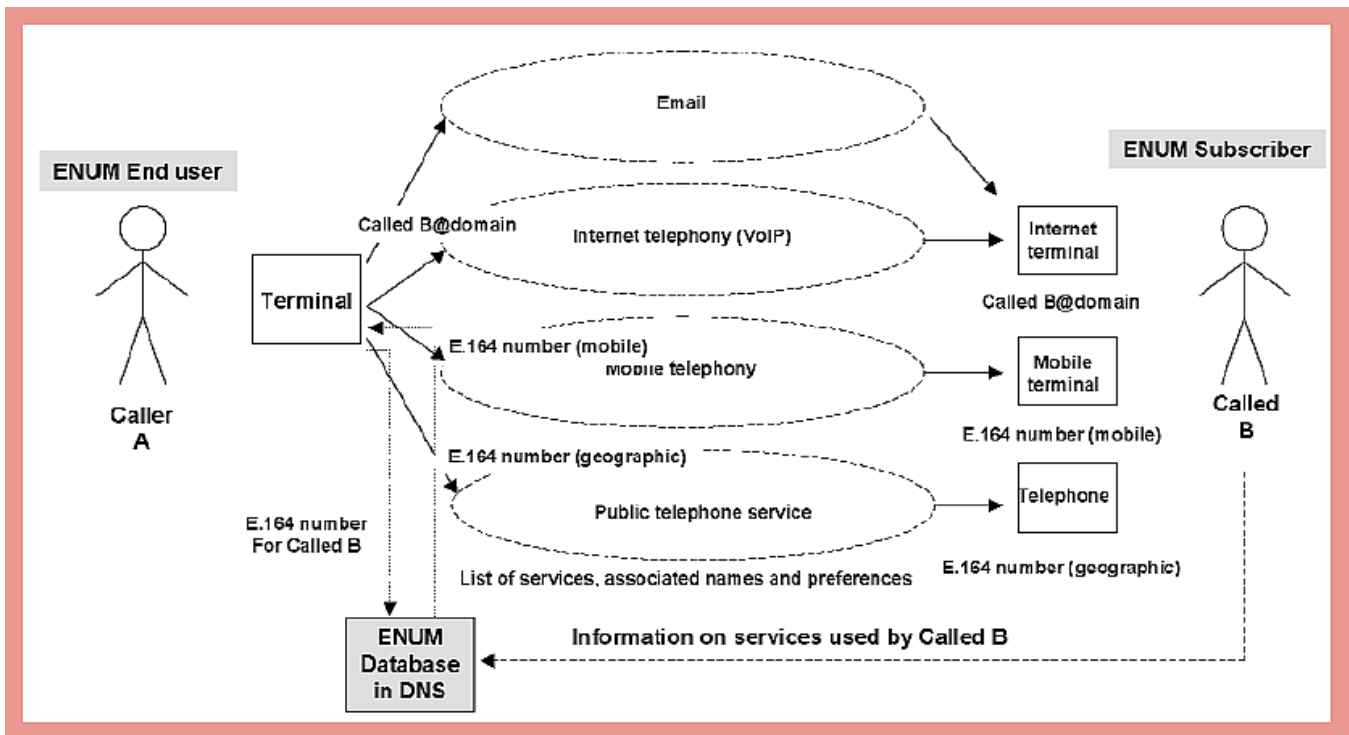

Figure 1: The basic ENUM concept

Although Figure 1 shows an end user interrogating the ENUM database, this is only one of various possibilities. The ENUM database could be interrogated automatically by software in the end user's terminal, or by an entity in a system that is used to provide a service to an end user. In the latter case, the end user may not be aware that ENUM is being used by the service provider. An end user does not need to be an ENUM subscriber.

The potential significance of ENUM is that it provides a bridge between the disparate systems of telephone numbers and Internet identities. Although there is a wide range of views on the prospects for ENUM, such a bridge could become important as telco networks and the Internet "converge" in the future.

— Excerpted from UK Department of Technology and Industry, "Consultation on the Proposed Arrangements," August 4, 2004