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**E Pluribus ENUM!**

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First of all, I want to thank Dan Berninger and the Pulver organization for sponsoring this Telecom Policy Summit.

Bringing all of us together in one place is both important and appropriate ... but it's a task made much more difficult under the unfortunate circumstances that we now face together as a nation.

One of the overarching issues we're addressing at this Summit -- how the Internet will affect telecom policy -- is especially urgent in light of the tragic events of September 11<sup>th</sup>. These two enormous global networks ... so critical to national and international economic activity ... were set up for different reasons at different times ... and they tend to operate quite separately.

But that's beginning to change. And it *should* change if we're going to leverage both networks to their fullest potential in terms of e-commerce, consumer convenience *and* national security.

I'm here, of course, to talk specifically about ENUM -- otherwise known as Electronic Numbering.

What is ENUM? First off, ENUM is clearly a convergence technology. It brings together the Internet and the public telephone network in completely new and exciting ways.

ENUM is what I call hype-free convergence.

We've heard so much about convergence for many years now ... but so much of that turned out to be a lot of talk, but not much action in the marketplace.

Well, ENUM is the real deal.

The problem with convergence attempts in the past was figuring out how to "operationalize" convergence in a practical sense.

With regard to converging the circuit switched telephone network and the Internet, we had to figure out how to pass messages between the two.

The ENUM solution is to establish a master registry of telephone numbers and associated Internet addresses.

ENUM will enable us to go online ... type in a friend's phone number ... and make his or her telephone ring. Or we'll be able to use a telephone to send a message to a friend's Palm Pilot.

The point is ... with ENUM we'll be creating a seamless translation between switched telephone networks and IP networks so that people can communicate regardless of the technology or services involved -- wireless, Internet (including email and instant messages), telephone, or even PDA.

ENUM also facilitates Voice over IP by providing a mechanism that enables callers on the public telephone network to easily connect with IP Telephony users ... and vice versa.

These first steps we're taking with ENUM have the potential to usher in and facilitate truly dramatic changes in the Internet and in telephony -- perhaps the biggest changes we've ever seen.

Given the fact that ENUM unites so many different applications in this way, you can probably guess what the ENUM motto is:

"E Pluribus ENUM." From many ... ENUM!

Naturally, responsible industry participants realize that the deployment of ENUM raises several important policy issues ... Issues that should be addressed sooner rather than later to ensure that ENUM most effectively serves the public interest.

The first issue I want to touch on concerns the international arena. To ensure a successful national ENUM capability ... we need to embark on an international approach.

The ENUM standard is designed to create a global structure that works within existing national and international telephone numbering administrative contexts.

This means that ENUM must be coordinated with rules and provisions set forth both internationally and nationally to ensure the integrity of both the Internet Domain Name System -- known commonly as the DNS -- and the international telephone numbering plan.

A Lone Ranger approach to ENUM is dangerous and irresponsible ... and simply doomed to failure.

That's why many of us in the industry have worked extensively with the U.S. government, as well as relevant international and national standards and regulatory bodies, in developing the necessary coordinated protocols.

Without such coordination there will be no assurance that a U.S. implementation of ENUM would be compatible with other international implementations and that companies will be able to develop effective market strategies for ENUM on the global Internet.

Beyond the international component, there are three additional policy areas I'd like to address briefly with you.

Is there a need for governmental participation? Which government agencies should participate? And how, if at all, should ENUM services be regulated?

Let's start with the question of governmental participation. The short answer is yes.

I'm not talking about extensive government involvement ... but the public interest will be best served if certain aspects of ENUM's implementation are conducted with some guidance from our government.

The primary need for government participation is in the selection of a Tier 1 administrator. This is the entity that will run the master registry of national numbers in ENUM.

The logic and design of both the DNS and the international telephone numbering system dictate that ENUM will most efficiently be deployed by means of a single, authoritative, global ENUM DNS domain – often referred to as the “Golden Tree.”

Put simply ... there must be one place for an ENUM user to look to find the proper mapping of a unique telephone number to a set of IP services.

To ensure this unique mapping globally, the U.S. government must identify the authorized Tier 1 administrator to the international ENUM administrator – which is also called the Tier 0.

Without some form of governmental Tier 1 designation, the international -- Tier 0 -- administrator would have no basis or right to choose one U.S. operator over another for implementation into the authoritative ENUM structure.

This governmental involvement -- while not precluding competition in Tier 1 ENUM services -- will encourage domestic and international ENUM development by ensuring that originators of ENUM queries can direct those queries to at least one trusted entity and recognized domain.

Government participation in the selection and oversight of a Tier 1 operator also will provide the necessary legal basis for effectively addressing policy and legal issues associated with ENUM service.

This arrangement is similar to the governance model established for top-level Internet domains.

As with Internet registries and their customer registrars, the Tier 1 administrator would have authority to contract with Tier 2 operators and establish provisions needed to protect customer data, ensure Internet and telephone network stability, abide by privacy protection requirements, and ensure vigorous competition and a level “playing field.”

Tier 2 operators, by the way, are the entities responsible for registering a customer’s telephone number with the Tier 1 and providing the mapping to IP services.

Without government participation and approval, the Tier 1 operator would have little or no ability to impose such requirements ... and might not have the necessary means for dealing with policy issues in general.

So that covers the question of governmental participation. Let’s turn to the next issue: Which government agencies should participate?

Our view at NeuStar is that several U.S. government agencies should play distinct roles in the design and oversight of Tier 1 operations.

The Department of Commerce has unique qualifications in this area, it has had the historical jurisdiction authority and experience in DNS related issues and inspires confidence among industry parties in the Internet space.

The DoC’s broad authority includes, for example the development of policy for and implementation of the U.S. domain name system.

Just as important -- and perhaps more important -- as the DoC’s authority in this area is its experience in the administration and oversight of the commercial Internet and the DNS. This experience is second to none in the world.

Needless to say, other Federal agencies can and should play critical roles in ENUM. For instance, the Department of State will need to continue to work on areas such as international treaties related to ENUM.

The Federal Trade Commission will need to address privacy and consumer protection issues posed by the accumulation of customer information in ENUM.

And the FCC will need to monitor ENUM services for any impact on matters within its jurisdiction, such as numbering administration.

Which brings me to the next issue: Should ENUM services be regulated?

Again, the short answer is a qualified yes.

I don't see any need for ENUM to be extensively regulated.

One area that has been of particular interest lately involves the question of privacy protection. Some parties are concerned that ENUM somehow threatens privacy rights.

But I think this essentially is a red herring. There really isn't a privacy issue here.

The Tier 1 ENUM service provider will collect and disclose very little information regarding a particular consumer. In fact, it doesn't need to collect any information specifically identifying a particular end user beyond the registered phone number itself.

The Tier 2 ENUM service provider will need to collect a greater amount of information regarding the individual assignees of the registered telephone numbers.

The information collected likely will include important contact and billing information necessary to maintain the customer relationship between the Tier 2 provider and the registered telephone number assignee.

This kind of data collection and disclosure can be and should be subject to strict fair information practices.

In addition to contact and billing information, Tier 2 providers also need to collect the URLs -- such as e-mail or VoIP addresses -- for the various services that the registered telephone number assignee seeks to associate with the telephone number.

Obviously, these URLs will be disclosed as a result of an ENUM query. Far from threatening privacy, this is in fact the precise service that ENUM provides.

It's simply a fact of the electronic world that, in order to take advantage of any number of advanced communications services people need to disclose a limited amount of contact information.

E-mail, for example, isn't useful unless the sender actually has the recipient's e-mail address. Similarly, you can't make a telephone call unless you know the telephone number of the person you want to call.

The key to privacy is that the decision to disclose such personal information must be a reasoned and informed decision – and it should be a voluntary decision on the part of the consumer, one that is freely made with complete and full understanding of the purpose behind it.

When an ENUM user chooses to load his or her telephone number into the ENUM Golden Tree, he or she completely controls what information will be associated with his or her telephone number, as well as its manner of use.

Consumer choice is and must be the hallmark of ENUM services.

In a report to Congress, the FTC recommended legislation to ensure that commercial operators follow widely accepted fair information practices with respect to personal information collected from or about customers.

NeuStar believes that these practices should apply to ENUM, even without any new legislation.

Specifically, ENUM operators should be required to follow four important information practices:

First ... **Notice.**

ENUM operators should be required to provide consumers with clear and conspicuous notice of their information practices ... including what information they collect, how they collect it, how they use it, how they provide choice, access, and security to consumers, whether they disclose the information collected to other entities, and whether other entities are collecting information through the site.

Second ... **Choice.**

ENUM operators should be required to offer consumers choices as to how their personal identifying information is used beyond the use for which the information was provided.

Third ... **Access.**

ENUM operators should be required to offer consumers reasonable access to the information that a Web site has collected about them ... including a reasonable opportunity to review the information and to correct inaccuracies or delete information.

And Fourth ... **Security.**

ENUM operators should be required to take reasonable steps to protect the security of the information they collect from consumers.

I believe these four requirements should be included in the agreements governing the relationships among various ENUM operators.

In addition, ENUM operators should be encouraged, where appropriate, to implement developing technical privacy standards such as P3P and CPExchange ... which are designed to give consumers greater information about, and control of, information collection and usage.

These regulatory and policy requirements need not be at all burdensome. These are common sense requirements.

In fact, I think it would be irresponsible to implement ENUM without putting these kinds of protections into effect.

Before wrapping up, I want to turn for a moment to a very big issue that goes beyond all of the points I've just raised. This issue was dramatically and tragically underscored with the devastating events of September 11<sup>th</sup>.

We believe there is a role for ENUM in supporting our national telecommunications infrastructure. You see, ENUM actually offers a very important benefit in these difficult times – a dynamic re-routing capability that can help to keep our communications systems running smoothly during disasters – whether natural or otherwise.

As you know, on September 11th many communications lines were cut, wireless services were overloaded and, as a result, it was very difficult for emergency crews to communicate and for worried loved ones to get information.

As the Number Portability Administrator, NeuStar dedicated teams of people working to port telephone numbers to alternate switches and networks to re-establish telecommunications following the disasters.

ENUM could have helped in this tragic situation. Let me explain how.

ENUM provides significant control over how communications are routed to and handled by telephone number holders. By changing preferences and information in ENUM, calls can be dynamically re-routed from crowded wireless circuits onto available circuits. Numbers no longer working could be re-routed to working numbers.

For example, emergency calls to a given hospital could be routed to another medical facility with working service.

In addition, emergency and law enforcement workers could have messages routed on a "follow-me" basis to any location at which they found themselves ... or for that matter to any communications device they might have available.

Calls to cell phones on crowded or non-working wireless networks could be routed to a less-crowded voice-mail system or information number – leaving critical wireless facilities open for emergency use.

A telephone number at a business affected by a disaster could be routed to an information line that provides information about Internet resources about loved ones, disaster recovery, and the like.

With ENUM in place, the same phone numbers that are part of the ENUM system could access these Internet resources.

Capabilities like these – and I've only cited a few examples – could be very effective in times of disaster.

So there you have it ... ENUM ... a new and exciting convergence technology that brings together the switched telephone and Internet networks.

ENUM offers enormous e-commerce possibilities for businesses ... a huge convenience factor for consumers ... and major benefits in terms of the safety and security of our communications infrastructure in emergencies.

In order to reap all of these ENUM benefits, we need to implement it in the right way ... with international cooperation and coordination ... with federal leadership in the selection of a Tier 1 administrator ... with the Department of Commerce as the most likely and appropriate agency with jurisdiction over ENUM.

Finally, to do it right, there will need to be some limited regulation of ENUM services.

I happen to think ENUM is exactly what the industry needs today -- hype-free, real-world convergence.

It's something that consumers want and the industry can readily supply. ENUM fulfills the promise of convergence, finally bringing many different and disparate services into a single, functioning unit.

And that's why I like to call it ... "E Pluribus ENUM."

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