November 29, 2004

NTT Develops "privango" e-mail System
as Junk Mail Countermeasure

- Public tests begin on e-mail address service that enables settings of usage conditions -

Nippon Telegraph and Telephone Corp. (NTT; Head Office: Chiyoda-ku, Tokyo; President and CEO: Norio Wada) has developed a conditional ID technology called "privango,"[(*1)] which enables users to set usage conditions freely, as well as a "privango e-mail system," which achieves junk mail[(*2)] countermeasures through the application of this technology. It began public tests on November 29 to evaluate the effectiveness of mail addresses created using this system, using a test site on the Internet (http://www.privango.jp/).

Using an advanced ID technology developed by NTT Laboratories, "privango" makes it possible to protect mail addresses and a variety of other private information with encryption technologies. By applying "privango" to a mail address, this system provides conditional mail addresses in which the user sets the usage conditions based on the mail address that he or she is currently using. With this system, the user can easily set his or her own usage conditions for each application, for example to limit the term of validity or the parties from whom mail is received.

In this way, the user can use mail services with conditional mail addresses (see Fig. 1) in which the set usage conditions have been encrypted, so that any mail that does not correspond to those conditions can are automatically blocked by the server. As a result, even if the conditional mail address should be leaked, the system can prevent junk mail, such as fraudulent messages or persistent invitations to use unwanted services. Unlike conventional anti-junk-mail countermeasure technologies, this system uses encryption technologies, so there is no need to store usage conditions and other information for each mail address on a server. This means that mail addresses with different usage conditions can be provided easily depending on the user's requirements, so highly personalized mail address services can be offered at a low cost.

Background to Development

Currently, e-mail is being used in a variety of Internet-based scenarios, including PCs and mobile phones, and e-mail user needs are becoming increasingly advanced. The scope of e-mail interactions has expanded beyond families, friends, and coworkers, reaching out to unidentified users through websites and other media.

With this increase in opportunities to use e-mail, however, we have seen a growing number of incidents involving leaking of e-mail addresses and other personal information, as well as fraudulent invoices and other illegal applications. This has drawn considerable attention to users' anxiety regarding junk mail. Once such junk mail begins to arrive at a given address, it is extremely difficult to stop.

In order to avoid receiving junk mail, some users acquire several e-mail addresses (for example through free-mail services) and use different addresses depending on the receiver or the purpose of the mail. Acquiring each new address, however, requires a

user registration, and it can be difficult to keep multiple addresses organized, so this could not be considered an easy way for users to protect themselves.

In response to this situation, NTT developed the conditional ID technology "privango," which enables users to easily set usage conditions such as the term of validity or authorized senders based on the world's most advanced security technologies and encryption technologies, cultivated at NTT's Laboratories. "privango" is expected to offer highly effective security functions. NTT has also developed a "privango e-mail system," which applies this technology to actual e-mail addresses.

Outline of Public Tests

NTT will implement public tests of the privango mail service in order to enable a large number of users to access mail services via the privango mail system, and to evaluate the effectiveness of the service.

- Test period: November 29, 2004 - March 10, 2005
- Participant application URL(test site): http://www.privango.jp/
  Users can also link to the test site from the Web mail service "goo mail"
  (http://mail.goo.ne.jp/), which is operated by NTT-Resonant, Inc.

Image of Application

With the privango mail system, users can tell their address even to a new receiving party with confidence. To give a specific image of how the system is used, we will use an example of a user registering an e-mail address on a website (Fig. 2).

- There are many convenient websites that offer a variety of services such as mail magazines or draws for prizes, but each time you use these sites, you must register your e-mail address.
- First, the user acquires a conditional e-mail address from the privango mail system, after setting the desired usage conditions such as the term of validity and the e-mail receiver. The new address is generated by the issuing server.
- The conditional mail address is registered on the website.
- This way, even if the mail address is leaked from the website as a result of some unauthorized activity, once the term of validity expires, all mail sent to that address is blocked by the mail server, so there is no need for concern about receiving junk mail at that address.

Keys to New Technology

(1) User can set a variety of usage conditions
Following are the usage conditions that can be set for each new e-mail address.

- Usage expiry date (e.g., valid until Nov. 30)
- Designation of sender (e.g., only valid for messages from abcdefg@ntt.co.jp)
- Designation of sender domain (e.g., only valid for messages from ntt.co.jp)
- Specified keyword in Subject line (e.g., only valid for messages with "NTT" in the Subject line)

(2) Use of encryption technology in conditional e-mail address reduces address management costs

- By embedding the usage conditions in the mail address using an encryption technology, the system generates an address that combines a nickname with the usage conditions (e.g., yamada.ua4vwpfbtfzz2as@privango.jp) (Fig. 1).
- Because the usage conditions are encrypted, third parties cannot read or change the conditions, and unauthorized use is prevented.
- Because the mail server in the privango mail system acquires the destination mail

address and the usage conditions through encryption, there is no need to store this information in a database. In this way, safe mail addresses can be issued at a low cost, and in unlimited numbers.

Plans for the Future
Based on the results of the public tests, NTT will continue to promote the commercialization of the privango mail system in collaboration with NTT Group companies, and at the same time will undertake further R&D activities aimed at proposing new Internet usage styles that will enable anyone to use the Internet safely and comfortably, with a view toward a wide range of applications outside of the scope of e-mail systems.

Glossary
*1 privango
A name coined by NTT, combining the elements "priv" for "private," and "ango," which is the Japanese word for "encryption." Trademark registered.

*2 Junk mail
Also referred to as "spam." E-mail sent to a PC or mobile phone without the user's consent. Similar problems are being faced in countries around the world, where malicious mail, including fraudulent invoices, has become a major social problem.

- Fig. 1: Example of conditional e-mail address
- Fig. 2: Typical usage scene in an Internet draw for prizes

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