



Communications News

Vol. 19 No. 17
December 5, 2008

Biweekly Newsletter of the Ministry of Internal Affairs and Communications (MIC), Japan

ISSN 1349-7987

Please feel free to use the articles in this publication, with proper credits.

STATISTICS

Results of FY2007 Survey on Price Variances in Telecommunications Services between Japan and Foreign Countries

MIC has been conducting each fiscal year a survey on price variances in telecommunications services between Japan and foreign countries, in order to get an appropriate grasp of the situation concerning pricing for telecommunications services. The results of the FY2007 have been recently compiled and are introduced below. Further details concerning the survey results can be found (in Japanese) at http://www.soumu.go.jp/s-news/2008/080801_html.

Outline of the Survey

Prices were compared for services including Internet, fixed telephones, mobile telephones, international telephones, and domestic leased lines in the 7 cities of Tokyo, New York, London, Paris, Dusseldorf, Stockholm and Seoul as of the end of March 2008, using a TTS (Telegraphic Transfer Selling) foreign exchange rate. Those covered by the survey were, in principle, the operators with the highest market share in each city. Comparisons were made based on individual charges and model rates (a hypothetical usage model was

set up the number of calls by time band and distance, with the charges necessary when using the telecommunications services according to this model. For fixed telephones and leased lines, a model set up by the OECD for comparative purposes was used, and for mobile telephones the Tokyo model based on usage conditions in Japan was used). Basically, the charges as of the end of March 2008 were used for the comparisons, and in cases where charges were subsequently revised, every effort was made to reflect these changes.

CONTENTS

STATISTICS

Results of FY2007 Survey on Price Variances in Telecommunications Services between Japan and Foreign Countries

1

TOPICS

Report on the Start of the MASTAR Project, a Cooperative Effort by Industry, Academia and the Government for Research and Development of Integrated Technologies for Speech and Text Processing

6

**International Policy Division,
Global ICT Strategy Bureau
Ministry of Internal Affairs and
Communications (MIC)**
1-2, Kasumigaseki2-chome, Chiy
odaku, Tokyo 100-8926, Japan
Fax: +81-3-5253-5924
Tel: +81-3-5253-5920

We welcome your comments via:
http://www.soumu.go.jp/joho_tsusin/eng/contact.html

MIC Communications News is available at:
http://www.soumu.go.jp/joho_tsusin/eng/newsletter.html

Presentation materials of MIC are available at:
http://www.soumu.go.jp/joho_tsusin/eng/presentation.html

E-mail distribution of this newsletter is possible if desired.

Results of the Survey

(1) The Internet (comparison of individual charges)

As far as the Internet is concerned, charges for regular monthly usage were compared for DSL and CATV Internet. The results of the

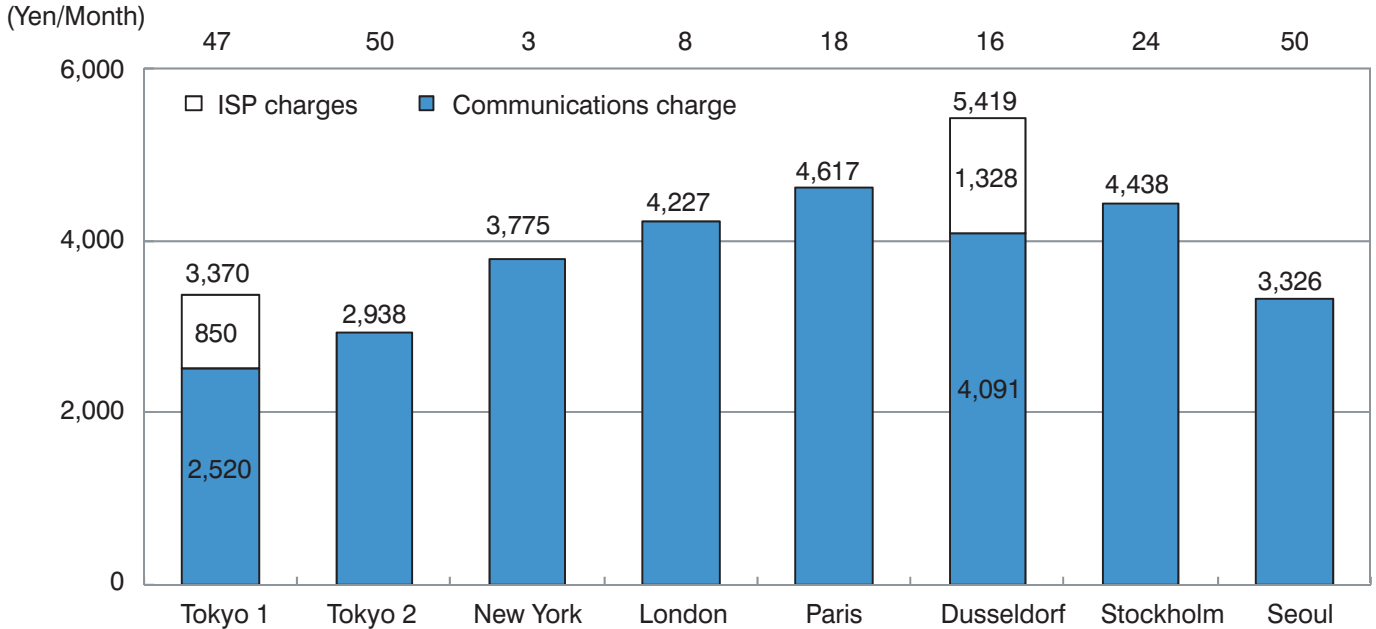
comparison in DSL charges are introduced below.

Tokyo remains at the lower level of pricing for DSL (see Graph 1). For communications speed, whereas Tokyo offers a maximum of 50Mbps, North American and

European cities offer between 3M and 24Mbps. When the comparison was made based on the charge per Mbps, Tokyo was at the lower end of the scale (see Graph 2).

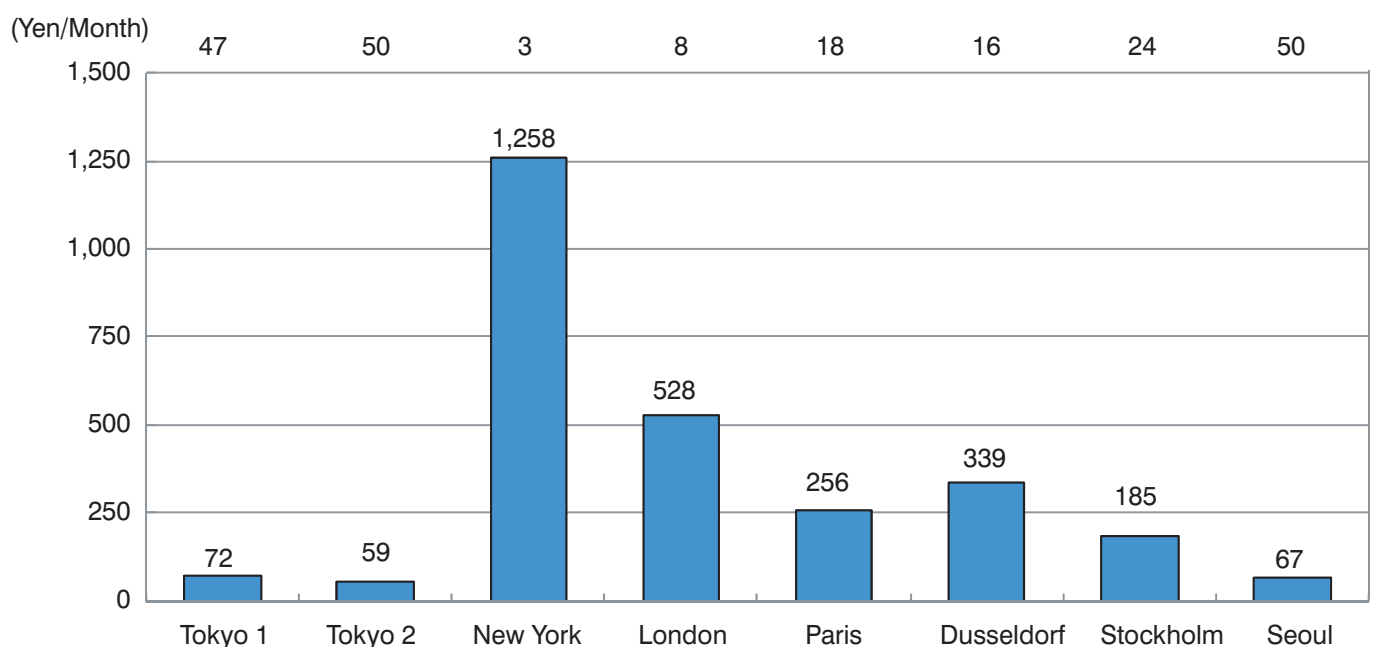
Graph 1: DSL charges

(Download speed: Mbps)



Graph 2: DSL charges (charges per Mbps)

(Download speed: Mbps)



(2) Fixed telephones

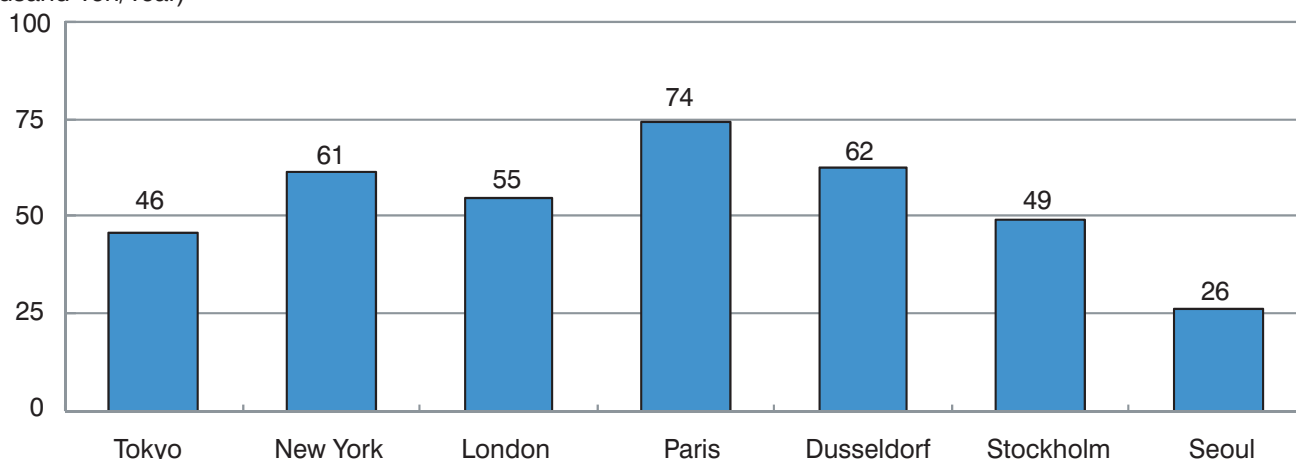
For fixed telephones, in addition to conducting a comparison of individual charges such as basic charges, charges for starting up a service or transferring it as well as local communications charges, an OECD model was used to compare

charges based on a whole year of usage. The results of the comparison using the OECD model are introduced here. In the comparison using the OECD model, for residential use, Tokyo was the second cheapest after Seoul both for standard rates and

discount rates, with standard rates at an average level and discount rates at mid-level (see Graph 3). Also, for business use, Tokyo was the third cheapest after Seoul and New York, with charges at mid-level (see Graph 4).

Graph 3: Residential use fixed telephone charges (discount plans applied)

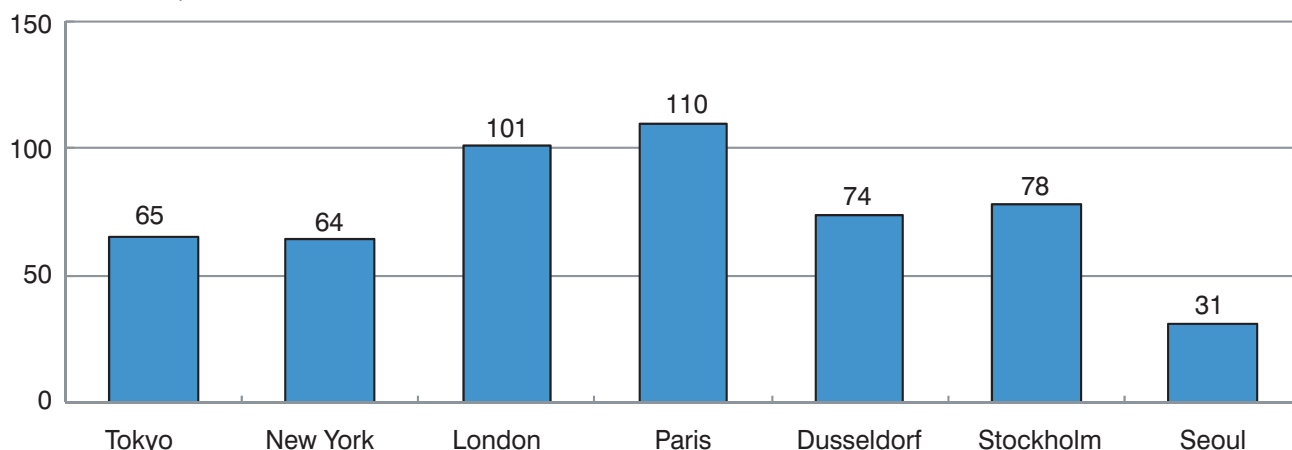
(Thousand Yen/Year)



* Annual charges were calculated based on: average daily local calls: about twice a day totaling 8 minutes, long-distance calls: 0.5 times a day totaling 3 minutes, mobile call reception: about 0.8 times a day totally 1.5 minutes

Graph 4: Business use fixed telephone charges (discount plan applied)

(Thousand Yen/Year)



* Annual charges were calculated based on: average daily local calls: about 5 times a day totaling 9 minutes, long-distance calls: once a day totaling 3 minutes, mobile call reception: about twice a day totally 3 minutes

(3) Mobile Telephones

For mobile telephones, Japan's usage records were used as a basis to set up three models (the Tokyo model) of low-volume, mid-volume and high-volume users and

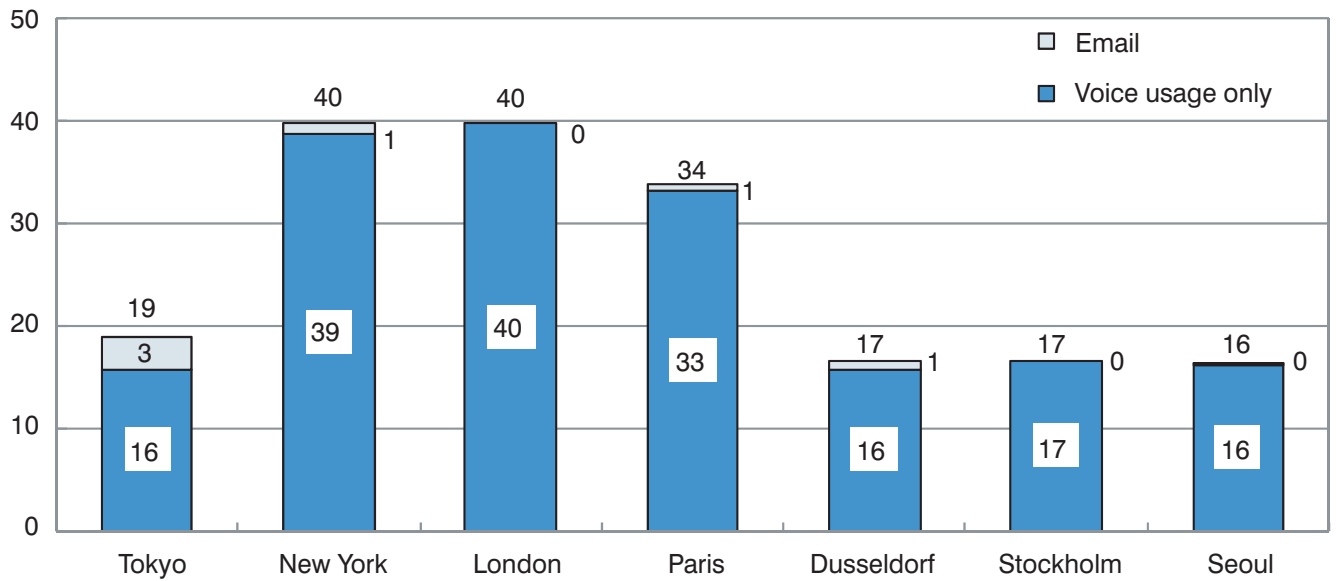
compared the lowest rates for those using mobile telephones.

For low-volume users, New York and London were expensive whereas Tokyo was in the lower range (see Graph 5). For mid-

volume users, New York was expensive and Tokyo was in the mid-range (see Graph 6). For high-volume users, Paris was expensive and Tokyo was in the average range (see Graph 7).

Graph 5: Mobile telephones (Low-volume users)

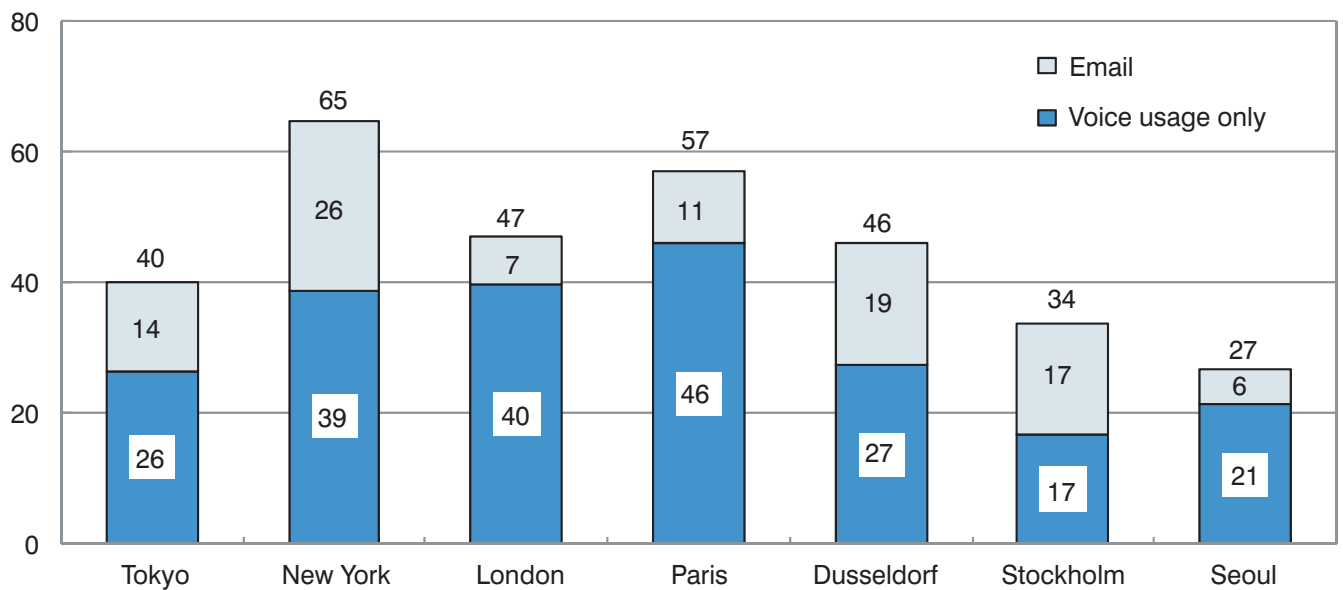
(Hundred yen/Month)



* Monthly charge for the following usage: voice: 44 minutes, email: 6 messages, no data usage

Graph 6: Mobile telephones (Mid-volume users)

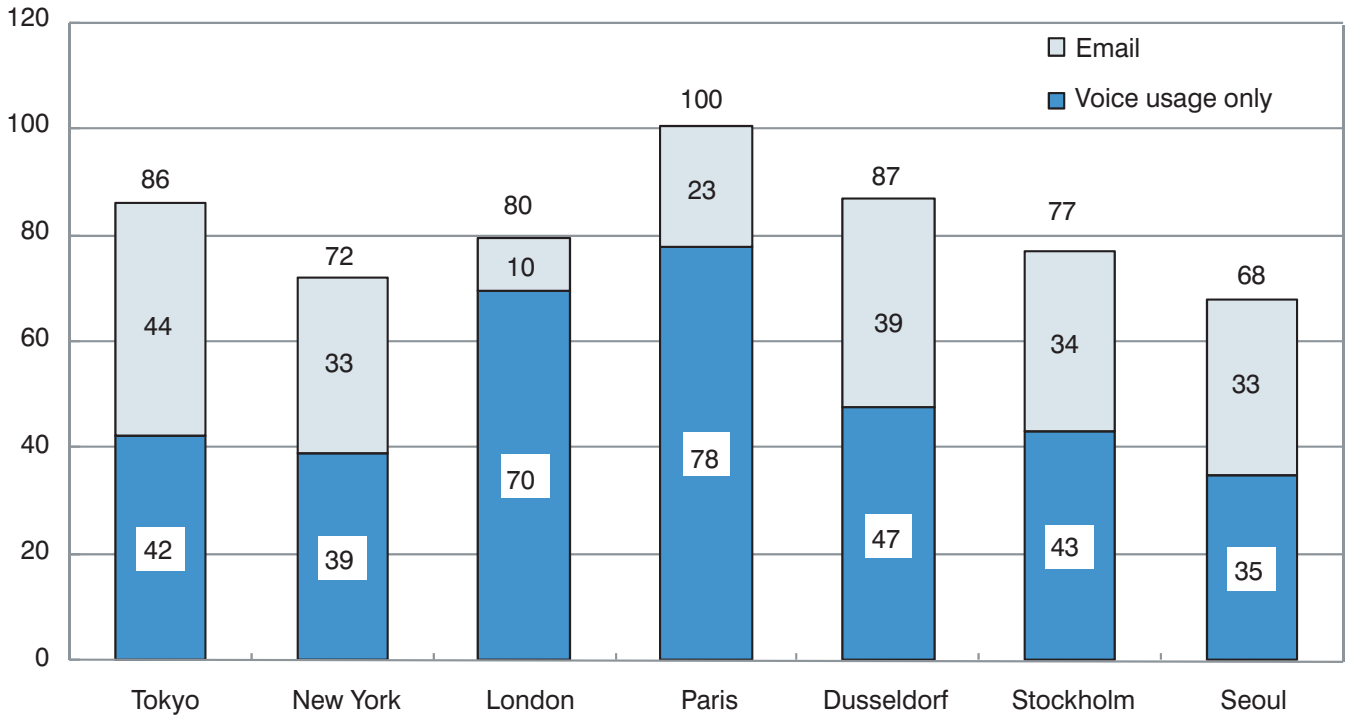
(Hundred yen/Month)



* Monthly charge for the following usage: voice: 96 minutes, email: 100 messages, data: 16,000 packets

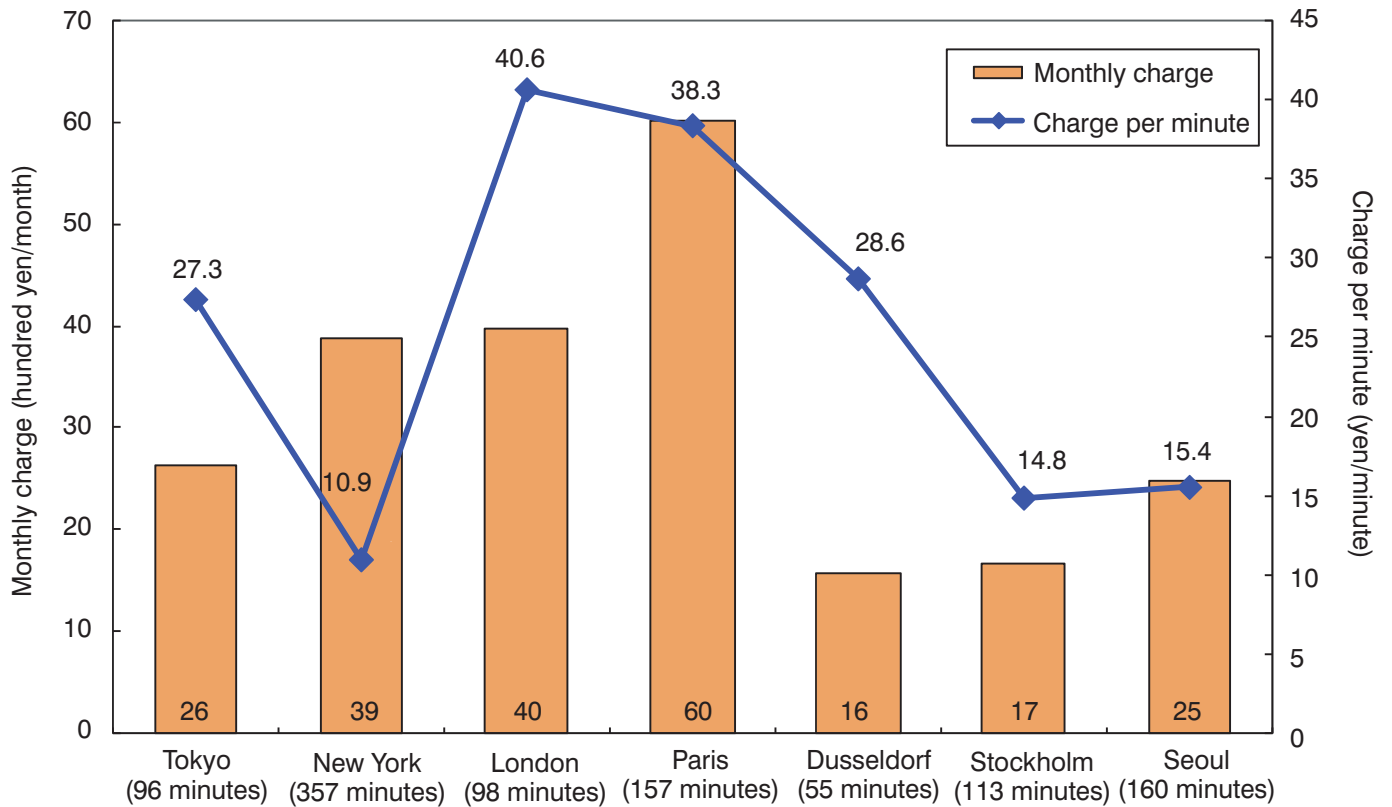
Graph 7: Mobile telephones (High-volume users)

(Hundred yen/Month)



* Monthly charge for the following usage: voice: 246 minutes, email: 300 messages, data: 670,000 packets

Graph 8: <Reference> Comparison of charges by average number of minutes using in each country



* Monthly charges using the monthly average number of minutes per contract in each country (voice only)

In addition, since there was a considerable difference in actual usage conditions for mobile telephones in each city, the charges calculated using a model that determines a set number of minutes (the Tokyo model) occasionally led to a gap with the average user's charge burden in the various cities. Therefore, in order to compare the charge levels of standard users in each country, the lowest charges needed for usage of the monthly average number of minutes per contract in each country were compared (see

Bar Graph 8). In that case, Dusseldorf, which has the lowest average minute usage, was at the cheapest level, followed by Stockholm as the second cheapest, with Tokyo also in the lower range. If this is converted into charges per minute, New York, Stockholm and Seoul are cheap, with Tokyo in the mid-range (see Line Graph 8).

Furthermore, with regard to the price gap for telecommunications services between Japan and foreign countries, each country offers a variety of pricing systems, starting

with the separation of standard and discount rates, and it is possible that the charges involved differ according to the type of use, and that there are regional discrepancies within the same country. Also, since the influence of fluctuations in the exchange rate is great, one cannot necessarily make generalizations about whether the charges are high or low. Consequently, it would be appropriate to keep these points in mind and consider the results of this survey as one indicator.

TOPICS

Report on the Start of the MASTAR Project, a Cooperative Effort by Industry, Academia and the Government for Research and Development of Integrated Technologies for Speech and Text Processing

Introduction

Japan has for some years promoted the research and development of automated speech translation technology at research organizations run by industry, academia and the government. Government-related research organizations, starting with the National Institute of Information and Communications Technology (NICT) as well as universities have been carrying out fundamental research on voice recognition, natural speech processing and machine translation. In addition, the government has been lending its support to research and development in areas such as automated speech translation technology through commissioned research and development and competitive funding of private sector corporations and universities, and creating a support system for research and development at private sector corporations based on the Act on

Facilitating Research and Development in Basic Technology.

NICT recently embarked on research on "The realization of voice communication technology to break the speech barrier," a project for accelerating social returns that was selected by the Cabinet Office's Council for Science and Technology Policy, and is concurrently conducting research and development on speech and text resources and processing, such as machine translation, speech conversation, text resources etc, and has started out on a new framework that is promoting long-term results, called MASTAR (Multilingual Advanced Speech and Text Research Project).

Background

NICT bases itself on the "u-Japan Policy" ahead of the realization of a ubiquitous network society to think about ICT that is easy on people so that all people, regardless of time or place or other conditions, can

communicate and has been promoting since 2006 research and development of "universal communications technology" in order to build a society that can create new types of "wisdom" and "value."

Additionally, research and development on "The realization of voice communication technology to break the speech barrier," one of the themes of the Cabinet Office's Innovation 25 long-term strategic plan to create innovation with a perspective until 2025, and a project for innovation to accelerate social returns that was selected by the Cabinet Office's Council for Science and Technology Policy, has started.

Then, the "MASTAR Project" started anew in Keihanna Research Laboratories for integrated research and development on speech and text processing, such as multi-lingual speech translation, machine translation, and speech conversation and to promote the

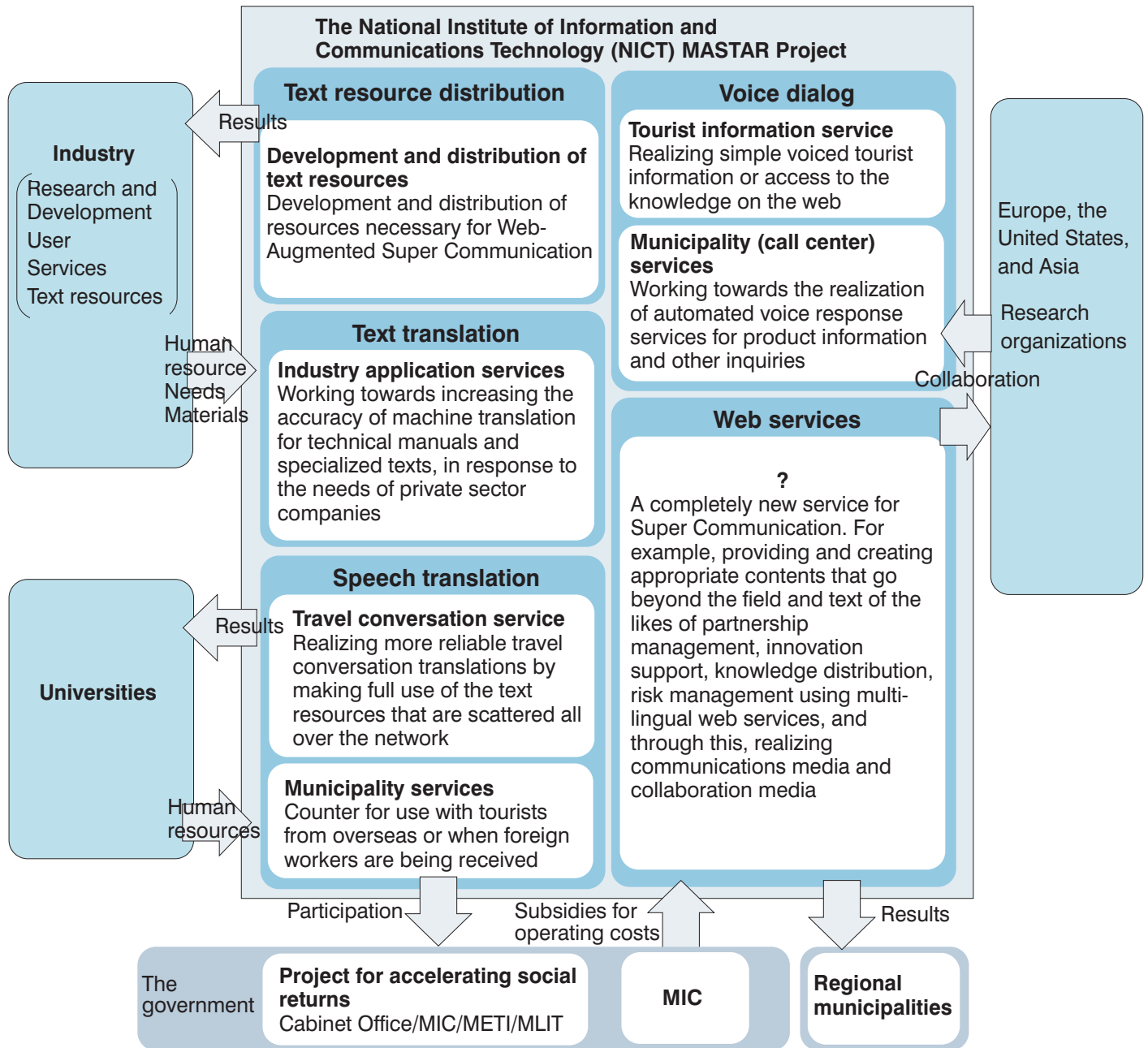
development of results. This project is a cooperative effort between industry, academia and the government bringing together researchers from Japan and overseas on text resources, text translation, and speech communication as a core base representing Japan, is working in a

cross-sectoral way on research and development and human resource cultivation in multi-lingual speech translation, multi-lingual text translation and multi-lingual conversation systems technologies. By gathering and preserving speech and text resources, which until now was difficult for a single

organization, the aim is to provide services, based on these, that tie in to actual operations through cooperation between industry, academia and the government.

The structure of the project is as shown in Figure 1.

Figure 1: The structure of the MASTAR Project



The aims of the MASTAR Project

This project is aiming for the realization of a society as described below. Figure 2 shows the research and development roadmap.

- To enable conversations between people who speak different languages using speech translation technology. In particular, using networks to realize high-level speech translation that is appropriate to each individual, expanding locations and topics, and encompassing all kinds of proper names such as various place names, restaurant names, etc.

- For the translation of manuals and corporate publications which has

necessitated considerable outsourcing costs per company for translation, using the MASTAR Project as an axis, to make it possible for companies in similar fields to share dictionaries and Corpus* resources, and by using machine translation, to enable them to produce translations of their documents more cheaply.

- By having automated voice response systems to deal with inquiries concerning products at call centers, a larger number of customers can be handled 24 hours a day, and operating costs can also be cut. It will also be possible to apply multi-lingual response and response beyond working hours at municipalities.

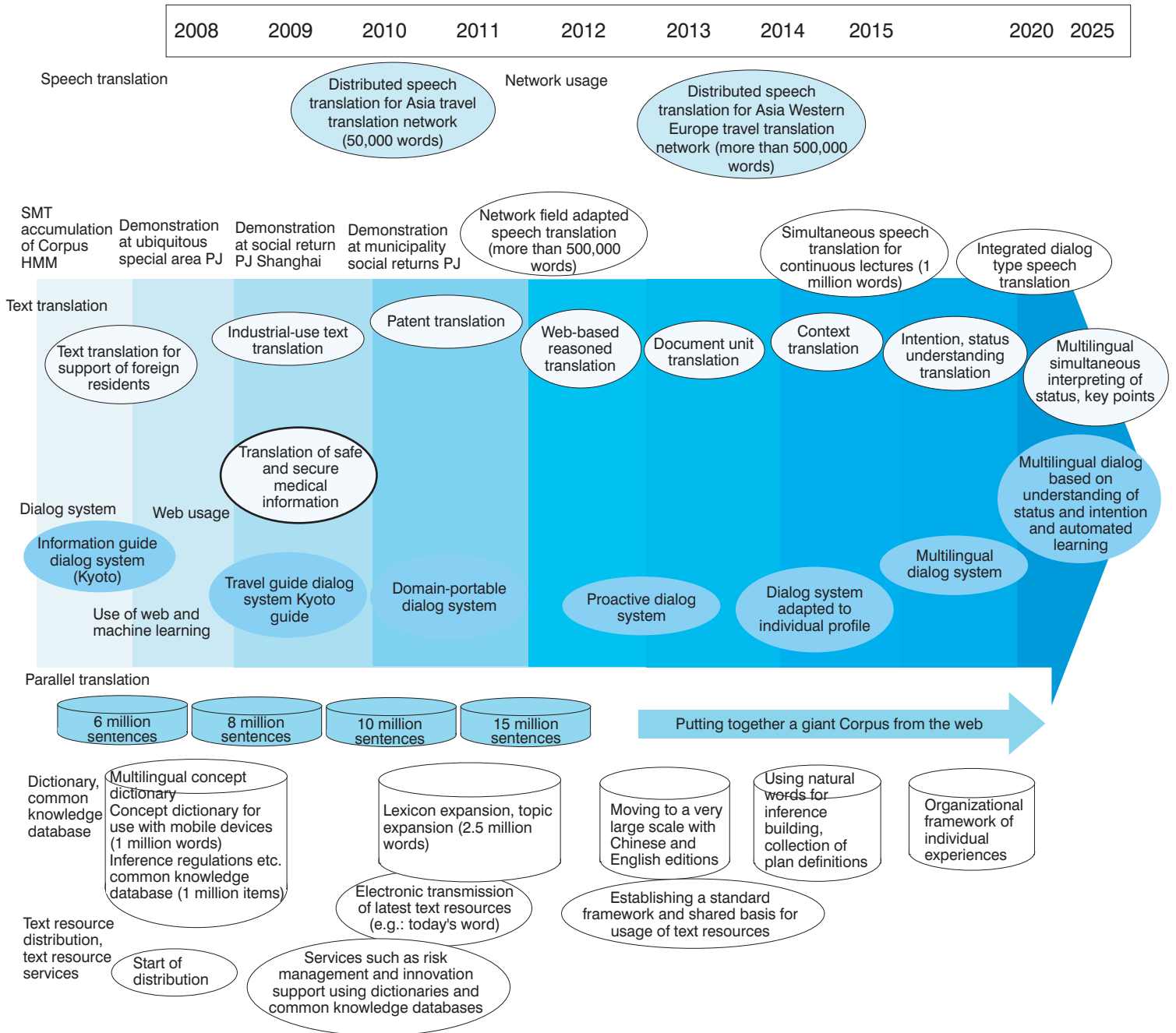
- Text resources such as

dictionaries and the like that form the basis of high-level information services such as machine translation, speech translation, information search, summarizing information, education and the like are clearly lacking in Japan from an international level. That is why services will be inaugurated that can be offered electronically such as world-standard text resources and the standard delivery of completely new up-to-the-minute text resources.

- Researchers and engineers will be brought in from industry, and there will be wide-ranging training of personnel.

* Corpus is a voice and text database that provides text information on nouns, verbs, etc.

Figure 2: Research and development roadmap for MASTAR Project



Kick-off symposium

With a view to making these societies into reality, the kick-off symposium was held in Tokyo on July 23, 2008. The symposium started with welcome addresses by SATO Tsutomu, former Senior Vice Minister for Internal Affairs and Communications, and OKUMURA Naoki, member of the Cabinet Office's Council for Science and Technology Policy. This was followed by a keynote lecture by NAGAO Makoto, Librarian at the National Diet Library, speaking on "Text processing topics for the future," followed by a panel discussion of experts from industry, academia and the government on "What should be changed in speech and text technology?" In addition, the latest research results from Keihanna Research Laboratories, such as multilingual translation systems, speech dialog systems, concept dictionaries and search support systems using these, and Japanese-Chinese speech translation systems using mobile telephones, were on display, and there was vigorous discussion between the many attendees, with the event concluding as a success.

On-site testing

The project conducted on-site testing of the speech translation technology using about 100 Japanese visitors and Japanese residents of Beijing over the duration of the Beijing Olympic Games, from August 7, 2008, until the end of September, as monitors. Japanese travelers were used who were taking part in tours such as visiting the Beijing Olympic Games, as monitors through their mobile telephones, asking them to use it as a communications tool for sightseeing, shopping, finding directions and the like, as well as using Japanese residents of Beijing to monitor "speech translation devices."

According to the results of a survey among users, expectations were great for speech to speech translation and people express the desire to see an automated speech translation device commercialized quickly, and people were also surprised that speech translation technology had come this far. On the other hand, opinions included that it would be good to have accurate speech recognition and translation of various turns of phrase, to have greater accuracy in names of restaurants and products, that greater speed was necessary for smooth conversation, and that

the interface should be easy to use, even for people using it for the first time. Work will be done in the future on improving software, and by conducting monitoring tests with Chinese visitors to Japan and Japanese visitors to China, it is planned to continue to verify capabilities. By combining these on-site tests and research and development, the aim is to develop system that is easier to use.

Conclusion

As is also shown in the survey results of the on-site testing, there are still many issues that need to be resolved with regard to automated translation systems. It is necessary to obtain a firm grasp of the issues, such as the expansion of topics concerned (from travel conversation to general conversation), the further improvement in translation accuracy, and the improvement of real-time functionality (from consecutive to simultaneous translation).

Looking ahead to the solving of these various issues, industry, academia and the government will cooperate even further, and are expected to adopt an even more strategic approach to research and development than in the past.