The Year 2000 Computer Problem and Japan

By Yoshikai Masanori

I. Japan's Efforts Toward Resolving the Year 2000 Computer Problem

Japan's efforts toward the resolution of the Year 2000 computer (Y2K) problem have advanced rapidly since the adoption of the "Y2K Action Plan" in September last year. There has been a particularly comprehensive response from both the public and private sectors in five critical fields: finance, energy, transportation, telecommunications, and medical care. Remediation and testing of their critical systems are scheduled for completion around June 1999. In addition, contingency plans are currently being drawn up by most of the organizations. To promote the drafting of such plans, the government prepared the "Guideline for Businesses to Draft a Crisis Management Plan" in April.

Japan is also making a positive contribution internationally by introducing its own experiences and know-how. As a result, Japan's efforts toward resolving the Y2K problem are rapidly gaining approval from other countries.

II. Overview of Y2K Action Plan (Governmental Promotion Organization)

On September 11, 1998, the Y2K Action Plan (henceforth referred to as the Action Plan) was adopted by the Advanced Information and Telecommunications Society Promotion Headquarters under the strong leadership of Prime Minister Obuchi. An overview of this Action Plan is given below.

[Overview of Government Action Plan]

A) Thorough Dissemination of Information Regarding Y2K Readiness

 * Thoroughly disseminate information regarding Y2K readiness through such media as government bulletins and newspapers.

B) Measures to be taken by Central Ministries and Agencies

 * All Ministries and Agencies will take necessary measures, including the drafting of crisis management plans and the implementation of final comprehensive inspection and testing to include simulation tests (deadline for vital systems is June 30, 1999).

 * Urge special corporations and local public bodies to take measures in conformance with Ministries and Agencies.
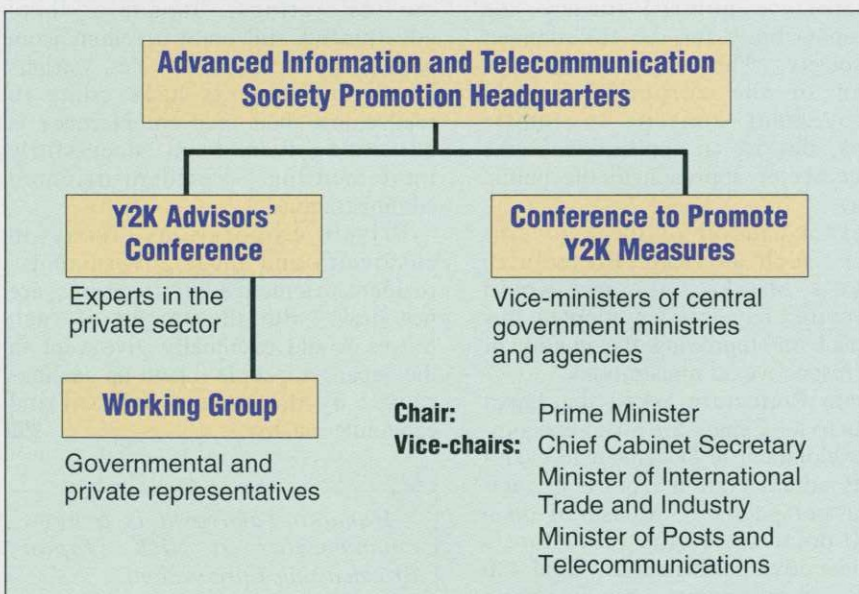
C) Measures for the Private Sector

(1) Measures for Critical Fields in the Private Sector

 * Encourage critical fields such as the finance, energy, telecommunications, transportation, and medical care sectors to thoroughly address the Y2K problem, while at the same time reporting the status of independently-conducted comprehensive inspection and testing to the competent Ministries and Agencies. Urge these sectors to complete simulation tests by the end of June of this year, insofar as this is possible.

(2) Thorough Dissemination of Information to Industry

 * Along with seeking to ensure that the industries under their jurisdiction are fully aware of the Y2K problem, Ministries and Agencies will encourage all corporations to conduct independent inspections at their own initiative.

 * The competent Ministries and Agencies will encourage the vendors of computers, software and products with built-in microcomputers to provide

Advanced Information and Telecommunication Society Promotion Headquarters

Y2K Advisors' Conference
Experts in the private sector

Working Group
Governmental and private representatives

Conference to Promote Y2K Measures
Vice-ministers of central government ministries and agencies

Chair: Prime Minister
Vice-chairs: Chief Cabinet Secretary
Minister of International Trade and Industry
Minister of Posts and Telecommunications

information as to how they are responding to the Y2K problem to the Japanese public and, when appropriate, to the international community.

(3) Support for Small and Medium-sized Enterprises (SMEs)

  * Guidance, advice and other services will be provided in order to encourage responses by those SMEs that might otherwise find it difficult to respond in a timely manner, while at the same time providing support to the extent possible.

D) Establishment of a System to Provide Information

  * Widely publicize information regarding the efforts of the government as a whole, with an eye toward establishing a system to provide information utilizing the Internet and other media.

E) Follow-up to the Action Plan

  * Progress reports on the implementation status of the Action Plan will be submitted quarterly to the Y2K Advisers' Conference and to the Conference to Promote Y2K Measures.

III. Japan's Readiness on Y2K

1. Government
(1) Central Ministries and Agencies, and Special Corporations (a total of 555 critical systems)

* Simulation tests of critical systems which are to be completed by June 30, 1999 are currently under way.

[March 1999]

Completion of remediation, etc.,
of critical systems: 67% (373 systems)
Of these, simulation tests for critical
systems have been completed: 45%(251 systems)

(2) Local Public Bodies

[March 1999]
Prefectural Bodies
Progress rate of critical system remediation
operations 60% or higher: 94%
Progress rate of critical system simulation
testing 60% or higher: 85%

Municipal Bodies
Progress rate of critical system remediation
operations 60% or higher: 66%
Progress rate of critical system simulation
testing 60% or higher: 49%

2. Critical Fields in the Private Sector
(1) Energy:

[March 1999]
Electric Power
Progress rate of simulation tests for
important computer control systems: 85%

City Gas
Progress rate of simulation tests for
important computer control systems: 83%

Petroleum
Progress rate of simulation tests for
important computer control systems: 73%

  * In the electric power sector, it is estimated that measures will be completed for 95% of important computer control systems by June 1999. Note that systems which control the supply of electricity, including those of nuclear power plants, do not utilize year date information for their control functions. Since all microchips contained within these systems have been determined to be unaffected by the Y2K problem, there will be no incidents resulting in power supply failures, such as power outages or voltage abnormalities. It has also been confirmed that there will be no safety problems caused by abnormal voltage.

  * It is estimated that in the city gas sector the measures for almost all the important computer control systems will be completed by June 1999, although progress differs from company to company.

  * The situation for the petroleum sector is nearly the same as for the city gas sector.

(2) Finance:

[December 1998]
Nationwide Banks
Progress rate of simulation tests
for critical accounting systems: 48%

Insurance Firms
Progress rate of simulation tests
for critical accounting systems: 51%

Securities Firms
Progress rate of simulation tests
for critical accounting systems: 16%

  Japanese financial institutions implemented a certain portion of Y2K preparations ahead of schedule, during the third major on-line boom of the early 1990's.

  In addition, joint industry-wide tests for banking and securities settlement systems, including the Bank of Japan Network System, were carried out in December 1998, February, April and May 1999. Basically, there were no problems found during these tests. Two more such tests are planned.

(3) Info-telecommunications and Broadcasting:

【 March 1999 】
Telecommunications
Progress rate of simulation tests for
critical systems: 69% (communications-related)

Broadcasting
Progress rate of simulation tests for
critical systems: 53% (control-related)

   * NTT, the largest telephone service provider in Japan, has already converted all switching and customer service systems to a 4-digit year format.
   * Of NHK and five other major urban broadcasting stations, NHK has already completed all remediations; two private providers had already completed their modifications by the time they changed their headquarter buildings; and the other three have either nearly completed their modifications or are now carrying them out.

(4) Transportation

【March 1999】
Civil Aviation
Progress rate of simulation tests for
important computer control systems: 79%

Railways
Progress rate of simulation tests for
important computer control systems: 49%

   Simulation tests for air traffic control systems were completed by the end of March 1999.
   According to surveys made by the major passenger aircraft manufacturers (Boeing and Airbus), there are very few systems on the aircraft which will be affected by Y2K problems, and every air carrier has already been informed of the measures to be taken. The air carriers are now working to include adequate measures, such as software modification.
   There has been overall progress in the railway sector, but some companies are behind in the implementation of compliance measures. Such companies are strongly encouraged to promote preparations.

(5) Medical Care:
   In order to promote readiness, concerned enterprises were urged to complete the simulation testing of medical equipment which could effect patients' lives by the end of last year, and that of other equipment by the end of June this year. According to a survey conducted last year, no problems have been found which could directly cause death or serious harm to a patient.
   All medical institutions are currently being thoroughly instructed to carry out self-examination, including such measures as confirmation of the safety of medical equipment and medical information systems, and the drafting of contingency plans. At Ministry of Health and Welfare hospitals and other medical institutions in particular, all medical equipment is marked as to whether a simulation test has been carried out by such means as affixing stickers to equipment after testing is completed.

3. Ordinary Industries
   Overall, Y2K readiness measures are progressing in all industries. Many enterprises are currently implementing these measures. In addition, most enterprises plan to complete contingency plans by the end of June or the end of September.

4. Small and Medium-sized Enterprises (March 1999 survey)
   Although it is estimated that small and medium-sized enterprises (SMEs) are making progress toward Y2K readiness, about 20% of all SMEs have still not taken any measures or are currently studying the problem. In addition to intensive dissemination and education activities, the following comprehensive assistance policies are being developed.

[Small and Medium-sized Enterprise Assistance Policies]
* Low-cost leases and discounted sales by prefectural lending institutions, targeted at small business operators.
* Low-interest financing by government-affiliated financial institutions (Development Bank, North East Finance of Japan, Japan Finance Corporation for Small Business, and People's Finance Corporation).
* Tax breaks for SMEs, etc.
* Immediate depreciation of computers, etc. for under 1 million yen
* Payment of expenses for modifying computer software
* Free consultation with system engines on site
* Establishment of a consultation system for SMEs (toll-free number for expert advice)
* Traveling consultants sent from SME guidance organizations (e.g. commerce and industry associations, chambers of commerce and industry, and small business associations).
* Loan guarantees (IPA).

5. Manufacturers and Distributors (Vendors) of Computers, Software and Products with Embedded Microcomputers (March 1999 survey)
   The majority of companies have made progress in ascertaining which of their products are in need of Y2K measures. The following three industries reported that none of their products had a need for Y2K measures: the household electric appliance ("white goods") industry; industrial vehicles, transportation equipment and engine

industry; and the toy industry. In addition, the major companies have in general finished providing information to Japanese users concerning the Y2K compliance of their products, and are currently working to provide information to overseas users.

In January this year, circulars were sent to 112 vendor organizations urging them to further encourage the provision of information and other measures.

IV. Future Measures

1. Further Promotion of Comprehensive Checkups

Continue to promote the implementation of comprehensive checkups, including simulation tests. Specifically, this will consist of the following:

(a) *Aim to encourage continued measures in order to, as a rule, complete simulation tests by the end of June of this year for important central Ministry and Agency systems and for the systems of critical fields in the private sector.*

(b) *Aim to encourage measures by those SMEs that might otherwise find it difficult to respond in a timely manner through the utilization of assistance policies and other means.*

(c) *In accordance with a circular issued in January this year, measures such as the provision of information by vendors will be encouraged even further.*

2. Promotion of the Drafting of Contingency plans

Enterprises and other organizations are encouraged to draft contingency plans based on the government action plan. Most enterprises are currently drafting such plans, aiming for completion dates of around June or September. The government promulgated its Guideline for Businesses to Draft a Contingency plan on April 11; through this, it is promoting even further the development of Contingency plans by private businesses.

V. International Efforts

1. Multinational Conferences

(a) *Joint Statement at the Birmingham G8 Summit (May 1998)*

Agreement on the importance of measures in critical fields such as national defense, transportation, telecommunications, financial services, energy, and the environmental sector.

(b) *Global Year 2000 Summit (October 1998, London; March 1999, Manila)*

Confirm the importance of international information exchange and cooperation.

(c) *APEC Informal Leaders' Meeting (November 1998, Malaysia)*

Unanimous agreement on the need to implement measures necessary for the improvement of problem awareness. Prime Minister Obuchi proposed an APEC Y2K Week, during which all members would jointly implement such activities as intensive campaigns. This was supported by all countries.

(d) *Global Implications of the Year 2000 Date Conversion Problem of Computers, Held by the UN General Assembly (December 1998)*

One-hundred thirty countries participated, including many developing countries. First assembly in which the United Nations showed serious efforts toward resolving the problem. Argued for the need for serious efforts and information exchange in an environment of international cooperation.

2. Bilateral Conferences

(a) *United States*

In a Japan-U.S. leaders' summit held in September of last year, both countries agreed to work toward resolving the present problem in joint coordination. One part of this cooperation is the exchange of information between governments concerning critical fields such as finance and energy.

(b) *Republic of Korea*

In a joint statement issued in October last year, both countries affirmed that they would actively cooperate within an international framework.

3. APEC Y2K Week

(a) *During the 12 days, from April 19th (Monday) to April 30th (Friday) 1999 the following events were held: 1) Ad campaigns by all APEC members; 2) An APEC/Y2K Symposium; and 3) Seminars aimed at SMEs held by each member country.*

(b) *APEC/Y2K Symposium: Sponsored by Japan, Canada and Singapore; held in Singapore from April 22 to 23. The symposium highlighted international problems with vital economic infrastructure, including contingency planning, as well as problems facing small and medium-sized enterprises. Japan presented its positive efforts toward resolving the problem; these efforts won high praise.*

(c) *Sending instructors to seminars in various countries: experts were sent to these seminars in five APEC member economies.* **JJTI**

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