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## INTERNATIONAL PREPAREDNESS

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Assessing the Y2K preparedness of the international community has presented a special challenge to the Committee. While the Committee can call on federal regulators and industry representatives to report on the status of their respective areas, it is very difficult to get acceptable assessments from foreign countries.

The Committee has legitimate and compelling reasons to seek information regarding the status of its neighbors and trading partners. Besides the interdependent nature of the U.S. and world economy already emphasized in multiple sections of this report, the U.S. has a responsibility as a world leader to encourage a politically and economically stable environment.

Alerting countries to potential Y2K danger by encouraging the exchange of information is one way the U.S. fulfills this role.

Furthermore, the nation may be called upon to assist its neighbors in cases of severe Y2K impact. The U.S. has traditionally been one of the strongest supporters of humanitarian aid around the globe. It is unlikely that we will turn our back on the international community in the aftermath of Y2K. Therefore, the Committee advocates a proactive approach now so that Y2K-related repercussions are reduced later.

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### OVERVIEW

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The Committee has tapped a number of sources for information on international Y2K preparedness. Within the government, agencies such as the State Department, Department of Commerce, Department of Defense, U.S. Information Agency and Central Intelligence Agency, have access to international information via their respective overseas operations. International organizations, such as the World Bank, United Nations and NATO, have provided varying degrees of insight. Finally, some private sector consultants have released reports rating the preparedness levels of certain countries.

With the exception of private sector consultants, most sources have hesitated to divulge specific information about foreign countries. The reasons for this are numerous. In many cases, the least prepared countries are those that depend heavily on foreign investment and multinational companies to supplement their economies. Panic over Y2K concerns may cause investors to withdraw financial support. Lack of confidence in a country's infrastructure could cause multinational companies to close their operations. The results could topple a fragile

***THE U.S. HAS A RESPONSIBILITY AS A WORLD LEADER TO ENCOURAGE A POLITICALLY AND ECONOMICALLY STABLE ENVIRONMENT.***

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economy or a struggling foreign government.

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### MAJOR INITIATIVES

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The State Department recognizes the potential difficulties that embassies and foreign posts may face come January 1, 2000. As a result, the State Department sent a survey to 260 posts around the world, the results of which will be used to pinpoint troubled areas. The Y2K situations will be monitored throughout the duration of 1999, and, in cases of severe problems, the State Department will issue travel warnings, or encourage American nationals living abroad to return home. The State Department has already issued an edict stating that all embassies must be prepared to be self-sufficient for 30 days by January 1, 2000. More afflicted areas may necessitate longer-term plans.

In addition, the State Department chairs the International Relations Working Group of the President's Y2K Council. This working group plans to engage the U.S. embassies in Y2K assessments of their host countries and summarize results in a database that has been established by the U.S. Information Agency (USIA). Other federal agencies and the private sector are also expected to contribute to this assessment database, but the State Department is still working out a process for gathering and synthesizing all of this information.

The Department of Defense has concerns similar to those of the State Department, since many military personnel are stationed abroad and are dependent on their host countries' infrastructures. The Department of Defense, in conjunction with the State Department, is communicating with its foreign counterparts to raise awareness and generate international forums to address the Y2K problem. This includes such possible actions as inviting Russian and Chinese representatives to witness the millennium change from monitoring stations within the U.S.

The State Department Office of the Inspector General (OIG) is also engaged in Y2K assessments of selected countries. Countries covered to date include the following:

*Latin America:* Mexico, Chile and Panama;

*Africa:* South Africa, Gabon, Cameroon and Ethiopia;

*Southeast Asia:* Thailand, Hong Kong, Singapore and the Philippines.

The OIG has planned the following assessments for the upcoming months:

*December:* Mumbai and New Delhi, India;

*January:* Europe—Frankfurt, Bonn, Berlin, Rome, Paris, Athens, London, Moscow, Kiev and Warsaw; and

*March:* To be confirmed later, but may include China, Japan, Korea

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and Vietnam, as well as Bolivia, Paraguay and Brazil.

International organizations such as the World Bank and the United Nations have also engaged in Y2K outreach programs. From June through October, the World Bank conducted high-level national and regional seminars in developing countries. The World Bank is providing planning and implementation grants, as well as a tool kit for managing the Y2K problem. Besides issuing a June resolution encouraging international Y2K cooperation, the United Nations hosted a program in New York City with representatives from close to 100 countries on December 11, 1998. In order to encourage participation, as well as induce countries to appoint Y2K project managers, countries too poor to send a Y2K coordinator could receive World Bank funding for travel expenses.

Private sector consultants have used a range of data to speculate on the Y2K status of countries. Consultants often have special relationships with corporate clients, including access to proprietary data from multiple industries within a country. As a result, they can create models based on assumptions supported partially by hard numbers and partially by insider experience, and make fairly credible estimates. However, most consultants will not reveal specific client information, making model verification difficult. Additionally, even the most well-thought-out assumption can prove incorrect. In

short, the Committee has interpreted forecasts with some skepticism.

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### ASSESSMENTS

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The Committee feels comfortable commenting on the preparedness of countries only in general terms. As a result, the Committee plans to focus its attention on international preparedness in the upcoming session.

#### Top-Tier Countries

At present, Canada, Australia, and the United Kingdom have consistently appeared on the top of preparedness lists.

*Canada:* In 1997, Canada established a government-industry task force to address Y2K issues across key sectors of the economy. Canada is encouraging compliance by providing small business tax relief for Y2K repairs. Additionally, a September Organization for Economic Co-operation and Development report stated that:

- 70% of businesses are taking action,
- 94% of medium and large firms are addressing the problem, and
- Close to one-third of Canadian businesses indicate that their systems are ready.

*Australia:* Besides an internal Year 2000 Project Office, the Australian government established the Year 2000 National Strategy with \$6 million (U.S.\$) to alert private sector

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businesses to Y2K danger. Australia also took a strong position on Y2K disclosure for public companies, insisting on Y2K disclosure for all public Australian companies by June 30, 1998. As of July 1998, the following percentages of critical systems have been repaired<sup>1</sup>:

- 60% of underlying delivery of health and national services,
- 48% of social welfare and employment,
- 33% of revenue collection,
- 40% of national security (not including defense) and
- 34% of business critical functions in defense.

*The United Kingdom:* The U.K. has put considerable effort into convincing its European neighbors that the Y2K problem needs attention. In March of this year, Prime Minister Tony Blair stated that the U.K. was dedicated to bringing Y2K to the top of the international agenda. Besides conducting surveys through its embassies, the U.K. pledged \$16.7 million (U.S.\$) to the World Bank to support Y2K efforts in developing countries.

Even among the most Y2K conscientious countries, problems exist. Canadian Auditor General Denis Desautels submitted a report to his government on December 1, 1998. The report acknowledged improvement since a 1997 audit, but expressed concern that work still lagged in areas. As of June 1998,

only four departments and agencies, responsible for 7 of the 48 mission-critical functions, had made "good" progress.

In Australia, PriceWaterhouse Coopers reported recently that while business and government Y2K spending had increased 47% in the past year, average expected project completion dates slipped from December 1998 to May 1999.

The U.K. also faces problems. Prime Minister Blair's attempt to raise an army of 30,000 "bugbusters" fell short by 29,900 bodies, as of a mid-September report. The low turnout throws doubt on the U.K.'s Action 2000 project's ability to galvanize the private sector.

This information on Canada's, Australia's and the U.K.'s Y2K programs cannot begin to represent the substantial efforts that these and other countries have made. Unfortunately, even countries that have received the best rankings still carry considerable Y2K risks, including the U.S.

### Europe Overall

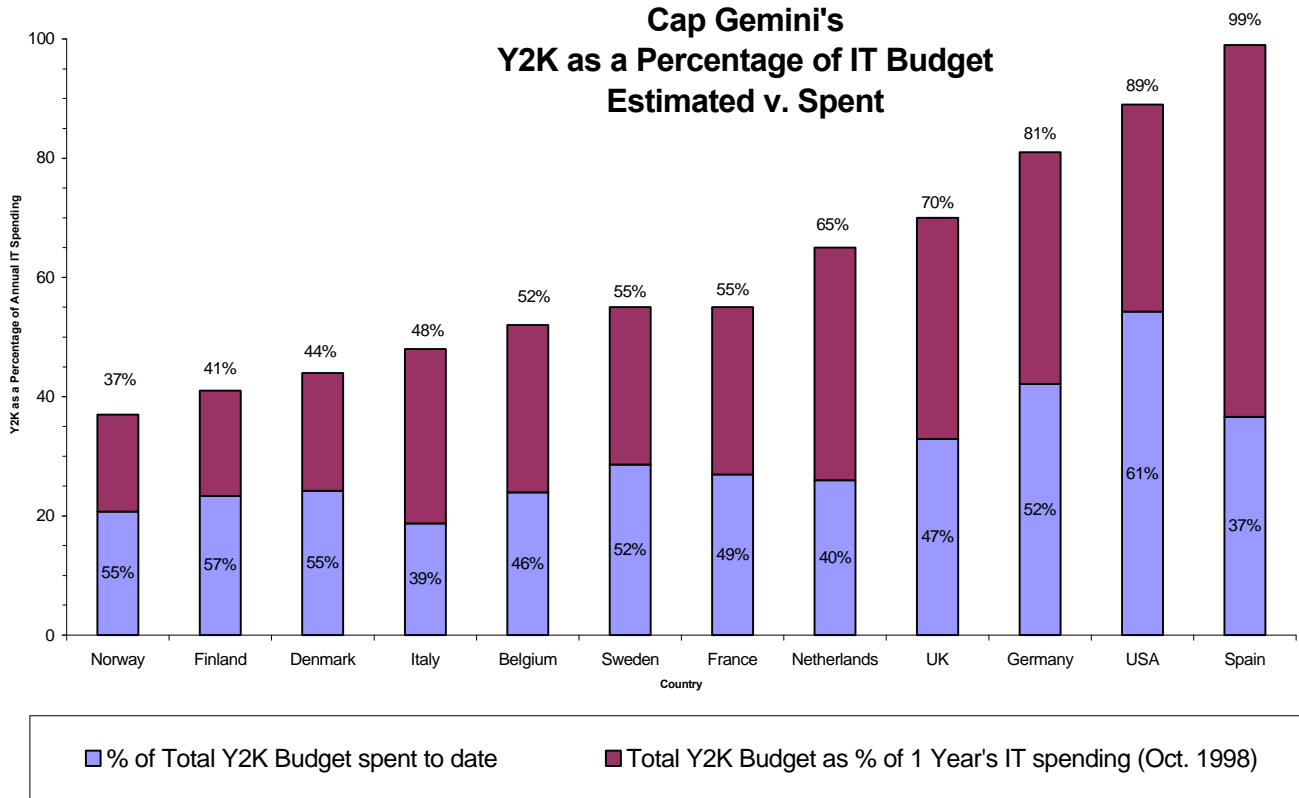
Cap Gemini, a consulting group with a strong business relations throughout Europe and the U.S., conducts regular Y2K assessments of Norway, Finland, Denmark, Italy, Belgium, Sweden, France, the Netherlands, the U.K., Germany, the U.S. and Spain. Cap Gemini has taken the task of sizing the Y2K problem, using self-reported estimates of anticipated costs versus dollars spent. To compare countries of vastly different size, Cap Gemini reports data as

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percentages of annual information technology spending.

Cap Gemini's October data indicate that the U.S. still leads in remediation efforts as a percentage of estimated Y2K budget spent (61%). While the Committee is pleased to

The Committee is not convinced that American companies have not overestimated their preparedness as well. According to Cap Gemini, 5 out of 6 U.S. organizations express confidence in their business critical systems. Somewhat disturbingly, virtu-



see this indication of progress, we recognize that dollars spent do not necessarily equate directly to completed work.

For example, Cap Gemini has expressed concern that some European countries have underestimated Y2K, and therefore have completed a smaller percentage of the necessary Y2K work than suggested by Cap Gemini's research.

ally all European countries express confidence in their systems. Fortunately, 98 % of surveyed American companies are creating contingency plans, versus only 60% of European companies. These numbers do not, however, include companies with fewer than 100 employees.

Further bad news was released in December 1998 from the European Commission. The report warned

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member countries that efforts to bring systems in line with Y2K are not sufficient. The Commission also criticized the lack of information available about certain sectors and administrations, with the exception of the U.K.

### Worldwide Comparison

Data become increasingly speculative outside of the previously discussed countries. Forecasts leverage such techniques as estimating computing personnel within a given

country, projecting a country's volume of Y2K repairs based on the make-up of a given country's economy and estimating preparedness levels through in-country interviews, surveys and personal contacts.

It is a sophisticated and time-consuming process that results in imprecise data, at best. However, the Committee feels that even imperfect data provide more benefit now than perfect data 12 months from today.

Country	Estimated Y2K Software Repair Cost	Estimated Y2K Total Repair Cost (% 1996 GDP)	Percent of Systems "Work in Progress"	Robbins/Rubin Y2K Schedule Indicator
<i>The USA</i>	\$187,921,430,000	2.5%	0.83	0.87
<i>Sweden</i>	\$ 6,191,702,000	2.5%	0.78	0.86
<i>The UK</i>	\$ 42,931,317,000	3.7%	0.82	0.85
<i>Canada</i>	\$ 18,129,243,000	3.1%	0.81	0.85
<i>Japan</i>	\$105,964,254,000	2.3%	0.78	0.85
<i>France</i>	\$ 42,379,656,000	2.8%	0.78	0.84
<i>Germany</i>	\$ 60,544,165,000	2.5%	0.79	0.84
<i>Belgium</i>	\$ 7,232,049,000	2.7%	0.78	0.84
<i>India</i>	\$ 4,037,957,000	1.2%	0.75	0.84
<i>Russia</i>	\$ 32,246,348,750	7.3%	0.58	0.83
<i>Netherlands</i>	\$ 10,199,431,000	2.6%	0.77	0.83
<i>Australia</i>	\$ 9,894,632,000	2.5%	0.73	0.81
<i>Italy</i>	\$ 33,731,929,000	2.8%	0.77	0.79
<i>Portugal</i>	\$ 4,899,455,000	4.9%	0.69	0.79
<i>Argentina</i>	\$ 8,292,548,000	2.8%	0.58	0.79
<i>China</i>	\$ 4,442,256,500	0.5%	0.55	0.78
<i>Korea</i>	\$ 22,614,322,500	4.7%	0.68	0.78
<i>Brazil</i>	\$ 35,832,775,000	4.8%	0.61	0.78
<i>Spain</i>	\$ 17,328,201,000	3.0%	0.72	0.77
<i>Mexico</i>	\$ 19,250,198,000	5.7%	0.62	0.76
<b>AVERAGE</b>	\$ 33,703,193,508	3.3%	0.72	0.82
<b>TOTAL</b>	<b>\$674,063,870,150</b>			

Using such techniques, Dr. Howard Rubin, Chair of the Computer Science Department at Hunter College and Research Fellow for the Meta

Group, has put together a table that provides an indicator of Y2K progress. The Robbins/Rubin Y2K Schedule Indicator quantifies the

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current level of progress versus the projected state of progress. A score of 1.00 indicates that a country's Y2K progress is on schedule. A value over 1.00 indicates that a country is ahead of schedule and a value of less than 1.00 indicates that a country is behind schedule. By Dr. Rubin's calculations, no country is ahead of or on schedule. The U.S. score, 0.87, still indicates that the U.S. is 13% behind schedule. On average, the countries included in this study scored 0.82, indicating that they have made 82% of their projected progress in addressing the problem. According to Dr. Rubin, 0.75 is an important cutoff score—after a project falls 25% or more behind schedule, it becomes virtually impossible to bring it back on schedule.

The Robbins/Rubin Indicator supports the Committee's sense that the U.S., the U.K., and Canada are in relatively good shape to face the millennium. Results from other countries are more surprising, especially when compared to the results of the Gartner Group's research.

The Gartner Group leverages its worldwide business network to collect information from 87 countries and 15,000 companies. In the Gartner Group's third quarter estimates, countries that ranked in the top of Gartner's four tiers will see at least one mission-critical failure in 15% of all companies and government agencies. Third- and fourth-tier countries are predicted to see over 50% of their systems experience some level of interruption.

### Comparing Results

*Japan:* While scoring a respectable 0.85 on the Robbins/Rubin Indicator, Japan has placed far lower on other rankings, such as the Gartner Group rankings.

Despite significant improvement in the past year, Japan may have underestimated the scope of the Y2K problem. According to a Bank of Japan survey, the majority of Japanese banks have neither engaged in contingency planning, nor checked the Y2K exposure of customers and counterparties. Since banking has proved to be one of the most aggressive sectors in addressing the Y2K problem around the globe, underestimation on the part of the Japanese banking sector may indicate even less awareness in other sectors.

*France and Germany:* France and Germany share a relatively high 0.84 Robbins/Rubin rating, and both received praise in the Cap Gemini report for significant improvement over the past 6 months.

However, qualitative reports suggest that France and Germany have yet to espouse a risk management approach to Y2K. The Committee feels strongly that Y2K is not just a technology problem, and worries that countries that simply focus on fixing the problem will fail to assess Y2K in a broad enough scope, and may fail to engage in contingency planning.

France and Germany may also suffer from a preoccupation with the conversion to the euro. In spring 1998, a survey by Neaman

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Bond, a consulting group, reported that both French and German companies ranked the euro conversion as more important than Y2K preparations. As two of the most ardent supporters of a unified currency,

France and Germany may have led the way in euro conversion at the expense of Y2K remediation.

### Gartner Group Predictions of Failure for Countries

15%	Australia, Belgium, Bermuda, Canada, Denmark, the Netherlands, Ireland, Israel, Switzerland, Sweden, the U.K., and the U.S.A.	1
33%	Brazil, Chile, Finland, France, Hungary, Italy, Mexico, New Zealand, Norway, Peru, Portugal, Singapore, South Korea, Spain, and Taiwan	2
50%	Argentina, Armenia, Austria, Bulgaria, Columbia, Czech Republic, Egypt, Germany, Guatemala, India, Japan, Jordan, Kenya, Kuwait, Malaysia, North Korea, Poland, Puerto Rico, Saudi Arabia, South Africa, Sri Lanka, Turkey, U.A.E., Venezuela, Yugoslavia	3
66%	Afghanistan, Bahrain, Bangladesh, Cambodia, Chad, China, Costa Rica, Ecuador, El Salvador, Ethiopia, Fiji, Indonesia, Laos, Lithuania, Morocco, Mozambique, Nepal, Nigeria, Pakistan, Philippines, Romania, Russia, Somalia, Sudan, Thailand, Uruguay, Vietnam, Zaire, and Zimbabwe	4

*Note: Countries listed in alphabetical order*

**Spain:** Spain is behind in its Y2K remediation as indicated by all three research reports. Worth noting, however, is the pattern Spain's Y2K efforts seem to be taking.

Between April and October 1998, the percentage of Spain's estimated Y2K budget jumped from 22% to 99%, indicating a dramatic increase in awareness among surveyed institutions. Cap Gemini explained this tremendous change in terms of human nature. Companies are inclined to panic and overestimate expenditures when first faced with the scope

of the Y2K problem. As Y2K projects organize themselves, estimates tend to fall as managers realize that a focused approach can save time and money.

This phenomenon highlights the importance of managerial guidance. While a technology department can fix a Y2K problem, it usually cannot make decisions about work prioritization, end-to-end testing and contingency planning without support from high-level management. Spain's massive jump in anti-



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pated spending suggests that Spanish managers may have just discovered the Y2K problem and have yet to consider time- and resource-saving options, such as triage and contingency planning.

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### CONCERNS

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According to Gartner, the majority of disruptions will be minimal. Only 10% of failures are expected to last more than 3 days. The question then becomes, which areas will face disruptions longer than 3 days and how severe will the impact of these failures be? This is the overall question that the Committee hopes to address in the following months.

Specifically relating to the international sector, the Committee has a special concern for the status of critical U.S. trading partners. The top trading partner of the U.S., Canada, accounts for 20.5% of the U.S. world trade (imports and exports). Japan accounts for 12% and Mexico

10.1%. While Canada falls in Gartner's top tier, Japan and Mexico are in the second and third tier, respectively.

The Committee would also like to investigate the availability of critical imports, such as oil, in the light of potential Y2K disruptions. For example, the largest supplier of imported oil to the U.S. is Venezuela, which Gartner reports as 9 to 15 months behind the U.S. in its Y2K preparation. The Committee plans to seek more information on critical imports and trading partners.

As information on the impact of Y2K on the international front becomes more substantial, the Committee may consider the need to recommend certain governmental actions, such as targeted outreach programs, or post-Y2K recovery efforts. However, the Committee cannot know the direction that its involvement will take until it examines the international sector more closely.

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<sup>1</sup> OECD Report, The Year 2000 Problem: Impacts and Actions.