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How the European Union is tackling the Year 2000 Computer Problem

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Executive Summary

The Year 2000 (Y2K) computer problem represents one of the largest single challenges faced by businesses, citizens and administrations within the European Union and the broader international community. This apparently trivial "technical problem" has within it the potential to cause disruption on a massive scale, threatening the functioning of economics as well as the safety and well being of individual citizens.

At this stage, with the deadline of 1st January 2000 looming ever closer and with the clear realisation that not all of the computer-driven systems upon which we all rely can be corrected, the issue to be addressed is how best can the problem be managed such that it causes only moderate annoyance rather than large scale damage. In this respect, an understanding of the overall state of preparedness within the EU becomes essential, so that risks can be assessed and the appropriate contingency plans put in place.

Following its earlier Communication COM(1998)102, the Commission was requested in the conclusions of the Cardiff Council held in June 1998 to report on the state of preparedness in the EU to the European Council of 11th and 12th December in Vienna. Therefore, the Commission has surveyed preparations in Member States, collecting information from relevant Ministries and European and international associations. Specific attention has been paid to actions concerned with raising awareness and stimulating action, with the preparedness of central and local administrations and with work undertaken to secure the continuing functioning of key cross-border infrastructures - transport, energy, finance, and telecommunications.

The resulting picture shows that efforts are ongoing in central administrations, although it would be desirable to obtain objective confirmation of the claims made concerning the status of their Year 2000 compliance. However, it is evident that the progress of regional/local administrations, and the need to address embedded systems and supply chains, are areas of shared concern. Furthermore, those Member States that seem to be more advanced in handling the problem consider their level of progress to be less satisfactory and have started to plan for potential disruptions to normal operations.

The decentralisation of administrations and the privatisation of many national infrastructures and utilities continues to make the collection of information very difficult for most governments. Where information is not available, the level of concern increases accordingly.

The financial sector is exemplary in its progress and in the level of national and international co-ordination taking place: the combined effect of proactive supervisors and the attention that has been stimulated by the introduction of the euro has played an important role. The telecommunication sector is also progressing, although the low profile of regulators may be a point that deserves further attention.

The air transport sector is active and providing information, whereas similar information is not forthcoming from the rail, road and maritime sectors. Even in those sectors in which significant advances have been made, not all EU

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countries are fully participating in international initiatives and the level of progress is not consistent throughout the EU.

The **situation in the energy sector is of greatest concern**, since very little information is available on the status of energy transportation and distribution systems. In view of the vital role they play for a country's economy, **the mutual dependencies between infrastructures**, and for cross-border interconnections, this is an area where great improvements in terms of information disclosure and direct action are necessary. Furthermore, although there seems to be little cause for concern regarding nuclear safety in the Member States, there is a need to continue information exchange with regulators in the Central and Eastern European Countries (CEEC) and Newly Independent States (NIS).

Although not discussed in this report, areas such as **water and waste management, health, and the food supply chain are also being highlighted as potential problems**, particularly with respect to the welfare of citizens.

In terms of providing support to the private sector and information to the public, **an increasing number of Member States are taking action**. However, there appears to be insufficient focus on consumer issues and evidence suggests that **SMEs continue to be slow in taking appropriate action**, while remaining particularly vulnerable to major business risks with their relatively low level of in-house technical capability and dependence upon IT suppliers.

In line with its **role to promote awareness of the problem and encourage the spread of best practice**, the Commission is actively pursuing the initiatives announced in its previous communication COM(1998)102. These include political discussions within and outside the EU, the operation of a mixed EU public/private network of experts to share information and approaches, contacts with international regulators in critical sectors, and the creation of a well-reputed web site.

Recently, countries and companies considered to be in the forefront are expressing concerns about their own exposure to problems of trading partners. Government investigations of other countries and reviews of key suppliers and customers are starting to take place, with the intention of assessing the progress **of others in addressing the issue and minimising investments and trading with those partners who are believed to represent significant risks.**

The time remaining is short, all problems cannot be solved. **Priority must now be given to protecting the health, welfare, and safety of citizens.** Efforts should now be focused primarily on contingency planning, with particular attention being given to the co-ordination of contingency planning between organisations in vital infrastructure sectors and utilities, in order to establish national and, where necessary, international contingency plans. With the appropriate plans in place, organisations can then afford to continue their internal efforts to address the Y2K problem itself.

Governments must recognise that, regardless of the privatisation of key industries, their citizens expect them to ensure that national infrastructures will continue to operate normally. Few companies are willing to provide absolute guarantees of business as usual, and it is dangerous to depend upon their individual self-interest to protect society as a whole from harm. Only governments are in a position to ensure that sensible precautions are taken.

The Commission urges all Member States to take action to:

- *Accelerate preparations in public administrations*, with particular priority given to the readiness of local and regional administrations, and to *establish mechanisms for the co-ordination and monitoring of progress*, recognising the need to disclose information to other Member States or third countries having legitimate economic interests in that country; as well as their own citizens;

- *Develop sound contingency plans* to ensure the business continuity of vital public sector operations, and ensure that similar plans are established for infrastructures and utilities;

- Advise relevant authorities to *encourage the active participation of their industry sectors in international Y2K initiatives*;

- *Exchange information about the readiness of all transport sectors*; ·

- Ensure that relevant authorities in Member States *monitor and report upon the progress of the energy sector*, with a view to assessing the cross-sector and cross-border impacts;

- Encourage further efforts by all relevant parties in the areas of *information provision to and protection of consumers, co-operation within and between industrial sectors, and between private and public sectors*, and *the disclosure of information about the Year 2000 readiness* of products, services and organisations through leading by example;

- Advocate the *use of common reporting templates* to form part of a country-wide strategy for communicating readiness, tracking progress, and promoting public confidence;

- Recommend to European public and private sector organisations to *participate in external testing*, particularly national and global tests, in order to reassure the public, partners, customers and suppliers.

Finally, the Commission proposes the immediate establishment of an ad-hoc **Council Working Group** on this topic in order to provide high-level policy co-ordination in the European Union.

1.   INTRODUCTION

The Council highlighted the importance of a report on EU readiness

On February 25, 1998 the Commission adopted a Communication on the Year 2000 computer problem (COM(1998)102), highlighting the risks and the urgent need to take action as well as delineating the scope of action for the private and public sectors. Further to this, the Council has reviewed the issue at several meetings (Telecommunications, Industry and Internal Market), agreeing with the importance of the matter and supporting the Commission's proposal to issue a report on the state of preparedness of Member States in tackling the problem.

Information has been provided by relevant Ministries in the Member States, by European and international associations, and by regulators and supervisors in the financial and air transportation sectors.

The quality and timeliness of responses from Member States was variable.

All Member States initially reported in July on the basis of a template suggested by the Commission services. The template covered the public sector and essential utilities and infrastructure networks with cross-border activities where public authorities have a supervisory role, as well as measures to increase awareness and tackle the problem in the private sector.

Subsequent to this initial information collection exercise, additional information was obtained during a Commission Y2K workshop in September, and countries were requested to provide further updates during October. To accommodate the wishes of several countries who asked for a concise means of reporting, a questionnaire was issued. As of the end of October, Belgium, Ireland, Sweden, Finland, Austria, Italy, Greece, Spain, Denmark, Luxembourg, and the Netherlands had provided additional information which has been taken into account. It should be noted that Norway has also actively provided information, although their situation falls outside the scope of this report.

An operational report on the EU situation in Q1 1999.

Since most questionnaires have yet to be completed and returned, the results cannot be included in this report. However, the Commission will continue to collate the replies with the intention of publishing another, more operational analysis of Member State performance during the first quarter of 1999. The Commission will monitor the situation closely during 1999 and further reports may also be produced.

The depth and breadth of the reports, as well as their quality and level of detail, varies considerably and, as such, makes a sound and exhaustive comparison difficult. The Year 2000 problem is a horizontal issue, pervading almost all areas of economy and society, with the result that the scope of responsibilities crosses different ministries and agencies. In cases where Year 2000 co-ordination has not been assigned to a specific entity, reporting was more difficult and considerably less informative. Where information is not available, this in itself becomes a matter for concern. However, the exercise has already proved itself to be very effective in stimulating further reflection and, in the case of some Member States, initiating further actions.

2.   MAIN ISSUES WITH THE YEAR 2000

Fewer resources, more work to be done... with no possibility of rescheduling

In the IT domain, few systems function flawlessly when first implemented and late delivery is the norm. It is unlikely that Year 2000 projects will be an exception to this rule. Delays in starting and completing internal Y2K activities are expected to create an increasing demand for scarce human IT resources, and force the deferment of other valuable IT projects. Few organisations now believe that they will be able to ensure full compliance in all their systems in time.

Greater management responsibility and the need to ensure business continuity

The recognition of this situation is leading many organisations to evaluate the potential risks and consequences of the failure of their critical systems and to put in place business continuity plans. The problem no longer rests with IT departments. contingency planning for vital business functions requires management control and responsibility at the highest level of an organisation.

No longer a business risk for individual organisations...

It has also become increasingly evident that the Year 2000 problem has an impact beyond information systems or other computer-based equipment owned by individual organisations. Its implications may also affect the supply chain, credit ratings, stock values and expose executives and senior officials to substantial legal risks.

.. but a world-wide economic and systemic risk

Whichever measure an organisation has taken to become "Year 2000 compliant", it remains vulnerable to the potential non-compliance of its trading partners. Both in public administrations and in the private sector, a high proportion of IT systems support processes which depend upon the continuous exchange of information between organisations, creating the potential for corruption of compliant internal systems. Similarly, the inability of a supplier to provide a particular component, or of a customer to purchase a specific product, could have serious consequences on an organisation's ability to continue trading.

Amplified by the reluctance of enterprises to disclose information about their own state of preparedness, customers (business and consumer alike), investors, employees, and supervisors, rightly fear for the possible non compliance of these enterprises. The Year 2000 has clearly turned into a systemic risk that may have substantial repercussions.

The costs – whatever it takes!

The costs of solving the problem are enormous, and yet, such is the threat perceived by business, that most organisations are indicating that they will spend whatever is necessary. Those EU governments who have already replied to our questionnaires indicated that they expected to spend amounts between 1 and 25% of their overall 1999 IT budgets on Y2K activities for central governments. The overall budget allocation for Y2K in the UK central government is currently £430 million. The costs to the private sector are equally substantial. US multinationals Chevron and Motorola recently reported in filings to the Securities and Exchange Commission that they expected to spend between $200 - $350 million to solve the problem, and yet were unable to guarantee uninterrupted service. It is not surprising therefore, that estimates of the worldwide costs are in the order of trillions of dollars.

The Year 2000 represents a significant threat to which most organisations will be exposed at the same time. In an overall risk analysis, the risk of a single major system experiencing problems on the 1st of January 2000 is thus

significantly higher than the risk to which an individual organisation is exposed. Of vital importance is the extent to which disturbances at a single organisation may affect others. A recent analysis carried out by the UK's Action 2000 initiative has revealed the complex integration and mutual dependency of modern country infrastructure processes.

Priority must be given to ensuring the continuity of vital infrastructures

This is why the relevant organisations in both the private and public sectors must give priority to ensuring the continued functioning of the basic infrastructures and services upon which our society relies, particularly in those areas where the health and safety of citizens may be at risk. These include utilities, such as energy, telecommunications, water, and waste management, but also our financial and transportation systems, the food supply chain, social security payments, and, of course, healthcare.

As recalled in COM(1998)102, the responsibility for tackling the Year 2000 problem and minimising risks clearly lies with suppliers and users of computer-based systems, although the size of the problem and its wide-ranging impact. justify awareness and support initiatives by governments in all Member States. Central and local governments have the primary responsibility of ensuring that their information systems will be ready for the Year 2000.

Nevertheless, governments must also recognise that, regardless of the privatisation of key industries, their citizens expect them to ensure that national infrastructures will continue to operate normally. Few companies are willing to provide absolute guarantees of business as usual, and it is dangerous to depend upon their individual self-interest to protect society as a whole from harm. Only governments are in a position to ensure that sensible precautions are taken.

More international activities...

Following the adoption of the Communication CQM(1998)102, there has been an increasing level of action at political level. In addition to the discussions in the European Council, other international organisations have stepped up activities on the subject.

...and foreign policy concerns.

Several countries, such as the UK and the Netherlands, have tasked their embassies to make contact with other countries and enquire about the state of readiness of infrastructures, in order to assess the risk exposure of their interests abroad. The Netherlands has

> **Activities at international level**
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> The G8 discussed the matter at summits in Birmingham and in London and established a network of year 2000 experts
>
> The OECD conducted a survey on the readiness of its member countries
>
> The United Nations Working Group on Informatics is concerned with the issue, a meeting in December will focus on international co-operation and contingency planning
>
> The World Bank has a programme to support developing countries

recently published a report[1] which analyses the international state of play and the risks to their country by region. The Dutch Secretary of State for Foreign Affairs will continue to brief the Lower House every 3 months on the

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[1] The Millennium Problem: A survey of the international dimension and the role played by the Netherlands

international situation. The Commission has raised the matter through its delegations in the African, Caribbean, and Pacific (ACP) countries.

The USA is starting to send out government investigators to make more detailed enquiries regarding Y2K progress in other countries, with the clear intention of reducing their trading dependencies upon partners whom they judge to be unreliable.

3. PUBLIC ADMINISTRATIONS

Preparations are on-going....

The public sector is indicated by many as being one of the most vulnerable. However there is evidence that an increasing number of Member State administrations are assigning top priority to Year 2000 projects and have established structures and methods to ensure an appropriate level of co-ordination and information exchange, as well as to highlight problems and take corrective measures where necessary. Each administration must

Co-ordinating Year 2000 effort in public administrations[2]
- *Netherlands:* Y2K Project Office (Ministry of Interior)
- *Sweden:* Agency for Administrative Development
- *United Kingdom:* Cabinet Office Year 2000 Team
- *Ireland:* Interdepartmental Year 2000 Monitoring Committee
- *Denmark:* Ministry of Research and IT
- *Belgium:* Programme Admi-2000 (Ministry of Civil Service)
- *Spain:* Ministry of Public Administration
- *Austria:* Office of the Federal Chancellor
- *Germany:* Co-ordinating and Counselling Agency for Information Technology in the Federal Administration
- *Italy:* Authority for Informatics in PA (AIPA)
- *Finland:* Ministry of Finance
- *Portugal:* Mission Team for the Information Society
- *Greece:* The Informatics Development Agency
- *France:* Interministerial Year 2000 Group
- *Luxembourg:* State Informatics Centre

naturally retain responsibility for fixing its own systems.

Reports identify that co-ordination is implemented either by means of newly appointed structures or by assigning responsibility to an existing structure.

...with different emphasis and co-ordination structures ...

It is interesting to note how co-ordination and monitoring responsibilities are assigned to different Ministries (Interior, Civil Service, Science and Research), IT agencies, or directly to the Prime Minister's Office. This depends partly on how responsibilities for IT are shared, but also on a different level of confidence and awareness of the issues at stake. Similarly, the terms of reference for the co-ordinating offices vary considerably and range from providing a forum for information and experience exchange between administrations to ensuring close monitoring and frequent reporting to government and parliament.

Member States in which the Year 2000 offices or programmes appear to play a more explicit co-ordination role include the Netherlands, the United Kingdom, Sweden, Denmark, Ireland, Belgium and, more recently, Spain, France, Greece, and Italy.

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2 As reported by Member States

Member States where appointed ministries play mostly an information exchange role include Germany, Finland, Austria, Luxembourg, and Portugal. .

...but only a minority report regularly to government or parliament

Quarterly or even monthly progress reports to the relevant authorities (Prime Minister, Council of Ministers, Parliament) are prepared in some countries as a way to monitor the progress. The only countries that provided progress information in some detail were Belgium, United Kingdom, Italy, Finland, Sweden and Spain. Belgium has already established a very detailed list of the strategic services of their public administrations.

Independent verification is starting to be introduced...

Several countries expect to produce their first reports at the end of 1998: the General Audit Bureau in Germany will report in early November, Greece will receive an assessment of the situation of the 60 most important IT centres at the end of November. Italy has recently procured an external auditor to carry out a quarterly assessment of progress and risk assessment in central government agencies. Denmark is also arranging an impartial investigation of the public sector Year 2000 status. For Belgium, the Project Management Office monitors the situation in public administrations.

...and some countries communicate results to citizens through the Internet

In the UK, The Cabinet Office Year 2000 team reviews progress in central government and key public sector organisations on a quarterly basis, publishing the results in the House of Commons and on the Internet. Public sector organisations, including local government and the National Health Service, are reviewed by the Audit Commission. Central Government organisations are also scrutinised by the National Audit Office. In general, however, few European governments are transparently publishing regular statistics on their progress.

The UK, Denmark, Sweden and Finland provided limited information about the progress in local administrations, while the Netherlands, Italy, Germany and Spain mentioned contacts between central Year 2000 activities and relevant associations of local authorities and municipalities. In Germany, an "informal working group" with representatives from each of the Laender and several Federal ministries has been formed. Some local authorities make use of shared data processing facilities, making the task of ensuring Y2K compliance of IT systems much easier.

Levels of confidence differ

It is difficult to compare relevant information provided by each Member State, given the major differences in detail and the different attitudes adopted with regard to monitoring their progress in the public sector. Expressed levels of confidence vary from "high" in France, Spain, Germany, Luxembourg, and Denmark to "lower" in the Netherlands or Sweden. At this stage no reliable measure is available to judge whether these differences in confidence are well founded or not.

Concerns about local authorities and embedded systems

Regardless of the different levels of confidence, the reports expressed a common concern for the preparedness of regional/local administrations and about how all administrations are tackling the problem of embedded systems. Even those who seem more optimistic, such as Germany and France, admit that there are differences in the readiness of public administrations and do not exclude possible problems. Financial administrations seem to be in a better shape, possibly due to the need to revise their IT assets in view of the introduction of the euro.

Will human resources be sufficient?

Certain countries are also concerned about the resourcing problem. In order to retain its existing IT personnel, the Belgian government is offering financial bonuses as an incentive to retain their current staff for the next few years. The Netherlands has launched a successful recruitment campaign to attract retired programmers to briefly rejoin the workforce and students to temporarily break their studies in order to satisfy the increasing demand for IT personnel. This is complemented by an IT job vacancy matching service.

The more advanced, the more worried

It is interesting to note that those Member States that developed an early concern for the problem and analysed the national situation in more detail (such as the Netherlands, Sweden and the United Kingdom), are now drafting contingency plans to ensure the continuity of critical functions supported by public agencies.

4.   INFRASTRUCTURES

Critical infrastructures were a target of the enquiry but...

The Communication COM(1998)102 highlighted a number of critical sectors, where cross-border effects may be detrimental to the entire economy and society, and which also depend on each other. They are the financial industry, telecommunications, transportation and energy. Other equally important sectors, such as water and waste management, the food supply chain or health care, have a less evident cross-border dimension, except as a consequence of problems in the sectors noted above. Defence falls outside the scope of competence of this report, although it obviously remains as an important concern.

...information on infrastructures is still incomplete...

Responses from Member States to questions on the status of their infrastructures and on the role of the relevant supervisory authorities were again of varying quality and very few were complete. Their replies were complemented with information obtained from some of the consultative groups of the Commission services and from relevant European and international organisations and associations.

...although more information should be forthcoming shortly.

In the Netherlands, a National Minister for Millennium problems has been appointed, with the responsibility to report to Parliament every 3 months. Separate Millennium platforms have been established for Healthcare, Basic Utilities, Government, Transport and Logistics, and Financial Services, Telecommunications and certain regional platforms are in a preparatory phase. Spain has created specific monitoring bodies for transport, energy, water, telecommunications, the environment, and the financial sector. The UK has implemented a National Infrastructure Forum to monitor the Year 2000 programmes of infrastructure providers.

In Ireland, each agency/public body responsible for critical sectors of infrastructure has been requested to establish an internal, formal monitoring committee to oversee compliance. Denmark has established special working groups in sectoral areas including the health sector, infrastructure and public service, and traffic structure, as well as on horizontal aspects such as consumer conditions and contingency planning. Sweden has requested central agencies in the areas of rescue services, health and medical care, postal and telecommunications services, air and rail traffic, shipping, financial services, water and power supplies, and nuclear power plants, to assess risks and take steps to minimise the disruption of essential functions in society.

4.1. FINANCE

The most advanced sector...

It appears that the financial sector, representing the banking, insurance and securities markets, is the most advanced in its preparations. This is primarily due to the role played by the relevant supervisors (these bodies differ in each Member State). They have exhorted financial institutions under their supervision to take concrete action not only to fix their systems, but also to take into account their dependencies on trading partners and their exposure to the possible non-compliance of debtors and investors.

...with supervisors taking a high profile...

The excellent work done by the Basle Committee on Banking Supervision and carried on by the Joint Year 2000 Council, grouping the international associations of financial supervisors, has been a driving factor for the progress in the sector, ensuring a consistent international approach by providing general guidelines for supervisors, and developing a country Y2K information database. Another contributing factor has been the need for early preparations for the introduction of the euro.

In all Member States, supervisors have addressed banks and other financial institutions which are under their control. They are monitoring their progress and requesting auditors of these institutions to take Year 2000 aspects into account. In some countries, target dates for completion of Year 2000 work have been set[3], in most cases for December 1998: these countries include Sweden, Denmark, Germany, the Netherlands and the United Kingdom. Where firm targets have been established, greater action is taking place.

... and associations variously active on an international scale.

The Global 2000 Co-ordinating Group, an informal grouping of banks, securities firms and insurance companies in many countries created with the objective of "identifying and resourcing areas where co-ordinated initiatives will facilitate efforts by the financial community to improve the readiness of global financial institutions to meet the challenges created by the year 2000 data change", acts as an international co-ordinator for Y2K work in the sector. Currently 10 out of 15 EU countries are represented in the group. The European Commission is kept informed of the work being carried out by this organisation and contributes where appropriate.

Global 2000 is comprised of working groups on country and firm readiness, testing, contingency planning, and administration. Its interests are not confined solely to the financial sector, it also conducts and publishes objective and subjective assessments of the readiness of utilities and of countries generally. Their work on defining assessment and reporting standards represents best practice in the industry. Country liaison members are appointed for each participating country to co-ordinate the global concerns of the Group with national initiatives.

Banking associations have been variously active. Some have set up working groups and committees (Netherlands, Ireland, Denmark, Finland, Sweden), others simply provide information or fora for exchange of experience (Germany, Greece, Spain) and others are monitoring progress and helping with contingency planning.

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[3] Source European Banking Federation, "Survey on Domestic Preparations for the Year 2000 problem" (April 1998)

Concrete progress is starting to be demonstrated through testing. Extensive point to point and bilateral testing has already taken place in the US and UK through the Global 2000 Co-ordinating Group, other European countries are expected to participate next year. The Bundesbank has recently announced a date in May 1999 when all German banks will carry out compulsory testing of the payments system.

Concerns remain for smaller operators and counterparty risks...

Nevertheless, while there is confidence expressed in the efforts of the larger banks, concern remains for smaller regional and local operators, which tend to be more reliant on the need for their IT suppliers to provide guarantees of compliance. Overall, many financial institutions have yet to complete an analysis of counterparty risks arising from customers having difficulty in adjusting to the changeover.

... and the greatest threat is to the processing of debt contracts.

A recent assessment by the Swedish Finansinspektionen[4] suggested that operative disturbances to the processing of debt contracts (borrowing, lending, and payment facilities and insurance undertakings), giving rise to liquidity problems for an institution or its customers, represented the most serious potential threat for financial markets. The report also mentions the need for liquidity planning by the central Riksbank and individual institutions to meet possible additional requirements by customers for cash.

Who will be liable and will your insurance cover Y2K?

In the insurance sector, large companies are preparing seriously and expect to be ready in time. The smallest commercial companies, who provide insurance policies for individuals, are possibly in a less comfortable position, although the majority make use of third-party products and will rely on their suppliers. In six Member States, specific awareness campaigns have provided information for insurance companies on Year 2000 issues, and in several countries, insurance companies have decided to publish statements on their own Y2K compliance.

The other issue of the changeover to the new millennium for the insurance sector concerns the coverage of Y2K-related risks for businesses. Generally, the insurance sector assumes that the issue will not have a significant impact on individuals, but primarily on companies. Therefore, insurance federations have adopted the stance that businesses should have been aware of the Y2K problem for some time. Being a predictable event, it therefore cannot be insured against. Exceptions may be made in cases where businesses can prove that they did everything possible to prepare, but that certain incidents attributed to the problem were unpredictable. This will be assessed on a case-by-case basis by the insurers themselves. Certain insurers have even developed specific policies covering the Y2K risk, but these require a strict investigation of the Y2K activities of their clients.

In all Member States, supervisors have advised companies to examine their major contracts and to inform their larger customers of the fact they are not covered for Y2K-related risks. Exclusion clauses may be inserted in new contracts and in others which are being renewed. The liability of suppliers for product malfunctions, of consultants or auditors for giving incorrect advice, and company directors for failures within their organisations are other important issues.

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[4] Finansinspektionen, "The Finance Sector, Information Systems and Year 2000" (October 1st, 1998)

Stock exchanges are expected to be well prepared

National stock exchanges began their Y2K adaptation efforts several years ago. Given the high level of dependency of financial market operators on technology, IT, and communication systems, stock exchanges have met regularly on a private basis to ensure their readiness. Additional public, national or European attention was therefore not required. The only possible source for concern would be whether private investment companies in the EU will be equally well prepared.

The introduction of the euro will require all EU banks to adapt their IT systems in order to be able to operate in euro from the 4th January 1999. Financial institutions and investment companies will then be able to fully devote their attention during 1999 to Y2K revisions. This should therefore give the financial sector in the EU an advantage over other sectors, and indeed over the financial sector in other countries, as they will already have experienced the difficulties of implementing significant, widespread changes to their IT systems.

4.2.   TELECOMMUNICATIONS

Activities are in hand,...

Member States that reported about work in the telecommunication sector indicate that Year 2000 projects are in hand. Austria, Finland, Italy, the Netherlands, Denmark and the UK referred to the progress of their major operators, whereas only Finland and Sweden mentioned the role of supervisory authorities in monitoring progress and encouraging the development of contingency plans. In France the situation is currently under review.

From the available responses it is not possible to conclude whether both information systems and embedded systems are being tackled with the same priority, nor whether progress is satisfactory.

...international testing is taking place...

The International Telecommunications Union (ITU) Year 2000 Task Force, grouping 5000 operators and regulators in many countries world-wide, has been active in raising awareness and sharing information, as well as addressing cross-border issues through its inter-carrier testing working group. Recent successful inter-carrier tests in June and September 1998 involved Norway, America and the United Kingdom, and Sweden's Telia and Germany's Deutsche Telekom with Hong Kong Telecom respectively. Further tests will extend the range of vendors and switch types being tested.

... but not all EU operators appear to be equally prepared.

However, not all major EU operators are fully co-operating with this group as yet, responses to the global ITU survey of telecom operators by European companies indicate that some are better prepared than others, and regulators and relevant ministries do not appear to be significantly involved. The ITU has published information about the dates when companies expect to complete and test their compliance, more sensitive information is shared within the group but not provided to the public. Telecommunication operators are being advised to get their networks ready and then "freeze" them from November 1999, and make no further changes until after January 2000.

4.3   TRANSPORTATION

Work is progressing for the adaptation of air traffic control systems. All countries for which information is available[5] report satisfactory progress and show how safety-related concerns are being taken into serious account. The role of civil aviation authorities is more proactive than in other transport sectors, probably due to the more immediate safety implications. However, Italy presented information on the progress of their national carrier but not on their air traffic control systems. No information was available from Greece and Luxembourg.

*...and information is
exchanged...*

With respect to cross-border issues and air traffic control services, EUROCONTROL, the European Organisation for the Safety of Air Navigation, has been charged to co-ordinate and facilitate the exchange of information on Year 2000. Its role includes encouraging the development of contingency and test plans as well as co-ordinating work with other international civil aviation organisations, such as IATA, ICAO, ECAC, FAA, etc. Among these organisations IATA has been very active and, in co-operation with ICAO and ACI and others, it has developed and piloted a standard methodology to assess Year 2000 readiness.

*...but reliable
information is not
always available.*

Despite the work carried out by EUROCONTROL, airlines are not always satisfied with the replies to their queries about the status of air traffic control systems throughout Europe.

*And what about rail,
road and sea?*

Much less information is available about other transportation areas. It is vital to obtain information concerning radio-navigation systems for coastal shipping and rail traffic management, for example. Only Finland, Sweden, UK, Netherlands and Ireland have reported about activities of rail companies or regulators, and only Ireland mentioned any cross-border or contingency planning concern.

4.4   ENERGY

*Nuclear risks seem
under control...*

In countries operating nuclear reactors (Belgium, France, Germany, Finland, Sweden, the Netherlands, UK, Spain) regulators are all taking appropriate steps to ensure that licensees will be compliant. These include addressing licensees to obtain detailed plans for compliance; mandating them to review computer systems for Year 2000 compliance according to safety concerns and planning shut-downs in case information is not satisfactory; monitoring progress and establishing working groups.

Certain countries, for example the UK, are particularly advanced, but there does not seem to be any specific reason to be concerned about the situation in any Member State. European Union regulators also exchange information with their counterparts in central and eastern Europe and the newly independent States, with a view to encouraging them to take the appropriate steps regarding their licensees. Initial contacts have shown that some CEEC and NIS regulators are as well prepared as EU regulators, while others are just beginning to consider the problem.

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[5] Information on air traffic control systems has also been provided by EUROCONTROL

...although the situation in CEEC and NIS countries is less clear

Within Europe, the previously mentioned Dutch report on the international situation views Eastern Europe as the area with the greatest chance of serious problems occurring at the turn of the century, and identifies nuclear power stations as a particular concern. The Commission will encourage CEEC and NIS regulators to act in this area by continued exchange of information on preparedness.

The OECD Nuclear Energy Agency (NEA) has just announced the launch of a comprehensive action plan, which includes the systematic collection of information on the status of Y2K preparedness of its Member countries; the establishment of an international network of national co-ordinators, using an electronic "mail-box" to facilitate regulatory exchanges of information; and the organisation of an international workshop which will take place in February 1999. This plan will be fully co-ordinated with - and complementary to - those being carried out by other international organisations.

...but little information is available on the whole energy Infrastructure...

Apart from nuclear energy, Italy gave an overview of activities in the electricity production, transmission, and distribution sectors and Ireland gave an overview of the progress of their electricity supply boards, but only the latter reported about cross-border issues and contingency plans. In the Netherlands, a specific co-operation platform has been established where players from electricity, gas and oil production and distribution participate together with the relevant regulator (Ministry of Economic Affairs). Sweden mentioned the role of the National Grid in a co-operation project involving operators of generation, transmission and distribution infrastructures. Finland described how their umbrella organisation for utility companies producing, distributing, and selling heat and electricity had established a Millennium Working Group in March 1998, indicating that testing was expected to be completed by the end of this year.

Who is overseeing energy exchange issues?

In general, little information has been provided on the preparedness of this sector, especially as far as transportation and distribution aspects are concerned. Addressing the Y2K problem has been made more difficult by the current legislative requirement for the energy sector to unbundle in the EU, diverting attention from Y2K adaptation. Nevertheless, new systems are being implemented as a result of this unbundling activity, and these systems are more likely to be compliant.   •

Unlike other sectors, where European and international organisations are addressing the cross-border aspects, relevant organisations in the electricity sector have only recently focused on the Year 2000. A questionnaire on Year 2000 readiness was circulated to members of UCPTE, NORDEL and CENTREL: results show that, on average, completion is scheduled for mid 1999, regardless of the considerable variation in the timing of project start dates, with half of respondents reporting having already put contingency plans in place. Cross-border issues do not appear to have been taken into account, with the exception of Ireland.

Although the substantial exchanges of energy between countries are planned and controlled by computer systems, there is no evidence that the cross-border testing of those systems or the exchange of information about contingency plans are taking place. Financial and telecommunications operators continue to express their frustration at the lack of reliable information on the progress in this sector, upon which all depend.

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5.   PRIVATE SECTOR AND PUBLIC AT LARGE

The reports indicate that there are very different views about the role to be played by Governments and public administrations beyond the responsibilities for the systems supporting their operations or under their regulatory or supervisory authority.

More Member States have taken initiatives...

However, the size of the challenge for the private sector and the concern for possible repercussions on the economy and society have induced a more proactive role on the part of a number of public authorities.

Ten Member States have now established specific structures to provide assistance to the private sector and to communicate with the public. They all involve representatives from both the private and the public sector, although funding and guidance come almost

Specific organisations in Member States[6]
— UK: Action 2000
— Netherlands: Millennium Platform
— Denmark : Year 2000 Forum and Secretariat
— Belgium: Millennium Forum 2000
— France: Mission "Passage an 2000"
— Sweden: Millennium Commission
— Ireland: Y2K National Committee
— Spain: National Year 2000 Commission
— Italy: Year 2000 Committee
— Finland: Y2000 Co-operational Working Group

exclusively from public authorities. Certain organisations also provide advice and assistance to the government, in a similar manner to the President's Council in the US.

They differ in terms of structure and level of ambition...

Portugal is assigning responsibilities to its mission for the information society. In Germany and Austria, awareness actions have been carried out by the Ministry of Economic Affairs: in both countries, the aim has been to complement and, where necessary, support activities already performed by chambers of commerce, industry associations, etc. In Germany, the Ministry for Economic and Technological Affairs (BMWi) organises meetings of a Panel of Experts, a group of forty representatives coming from the public and private sectors. The German government collects and compiles information coming from the private sector. Greece and Luxembourg are not taking any action so far, although Greece recognises the need for an overall co-ordination of public and private sector activities.

...but they share a focus on embedded systems, legal issues and SMEs.

In spite of the difference between the structures, terms of reference, and level of funding for these operations in different Member States, there is a common focus on raising awareness, helping small and medium sized enterprises and supporting information provision and exchange. Both Denmark and the Netherlands are conducting pilot projects to provide demonstrable results aimed at SMEs, the UK has just announced the "Bug Park" initiative, where 15 small and medium sized businesses in a single city have agreed to act as live case

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[6] It is possible to connect to the Websites of these and the other infrastructure organisations mentioned in this report through the Commission Y2K Website at *http://www.ispo.cec.be/y2keuro*

studies and report on their progress in tackling the Y2K problem over the remaining months. Spain is providing subventions for their SMEs.

In light of these activities, it is surprising that so few SMEs are taking action. Surveys carried out throughout Europe continue to indicate that although SMEs are generally more aware of the problem today than they were 6 months ago, many simply refuse to believe that it could affect them directly. If they do accept that it may have an impact on their own business, they rely upon governments or large software providers to solve it for them. They may believe that their systems are problem-free because they were recently purchased, without appreciating that some of the PCs sold during the first half of 1998 were not yet compliant. If this situation continues, the consequences are likely to be severe indeed.

The consequences for laggardly SMEs may be severe

Large companies are already in the process of identifying alternative suppliers. Banks are assessing their credit risks. During the coming year, companies that are unable to provide satisfactory reassurances about their Y2K situation may soon find themselves either losing customers or being denied credit. Financial markets are also starting to react; a lack of Y2K information will begin to affect stock valuations. Those who suddenly realise that they have work to do may be unable to find, or afford, the necessary resources. For those who have simply regarded Y2K as a computer problem, disruptions to their own supply chains at the beginning of 2000 may come as a shock, one for which they have not planned. Company managers who have not acted with due diligence may find themselves held personally liable for damages to other companies. The ultimate consequence may well be bankruptcy.

What about consumers and the public at large?

Awareness raising now seems more focused on issues such as embedded systems and legal aspects, but still little attention as yet is being paid to consumer issues (which were mentioned only by Spain, Finland and the UK) and how to address potential public concern.

More is being done to support information disclosure…

More countries are now considering measures aimed at improving the transparency and availability of information about the readiness of products and enterprises. Auditors in most countries have been asked to report upon the status of Year 2000 compliance of companies when auditing 1998 year end accounts.

…such as Year 2000 compliance labelling …

The self-certification schemes ("Year 2000 compliant" labels) originated in Sweden and Denmark and are now supported by the Netherlands and France. Although the applicable definition of compliance may differ slightly, they are equivalent in terms of their objectives (inform customers and consumers) and nature (they are non-binding). Interestingly, Spain has adopted a different approach, the default assumption is that products without any label indicating non-compliance are therefore compliant.

…or status reports and codes of conduct.

Sweden has adopted a Status Report[7] which has raised the interest of other countries, at least in specific sectors. Belgium is now adopting a code of conduct, developed by IT industry associations together with Forum 2000: its signatories are ethically obliged to disclose information to their customers about

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[7] The Status Report consists of 14 questions, relating to various aspects of year 2000 preparedness. It is intended to be provided with quarterly or annual financial statements.

the readiness of their products and to apply a fair and proactive conduct while supporting their customers in the Year 2000. A Year 2000 pledge with similar objectives has been recently adopted by Action 2000 in the UK. Although these measures are not legally binding, they may contribute to creating a climate of mutual trust.

There is very little on the regulatory front....

Very few regulatory measures have been taken, as one might expect in view of the little time left. More attention to the impact on IT systems will be paid when proposing new legislation both in the Netherlands and in Denmark. As far as public procurement is concerned, in addition to the common requirement for Year 2000 compliance in newly purchased computer-based systems, two Member States (Belgium and Portugal) have reported the adoption of simplified procedures to secure the provision of Year 2000 repair services.

...and minimal appreciation of the potential litigation problem.

Unlike the US, there is less evidence of concern in the EU for the potential impact of widespread Y2K litigation. However, France is in the process of establishing a platform grouping insurers, lawyers, and technicians to handle future Y2K claims. The potential impact of the new US "Good Samaritan" legislation, designed to increase information disclosure by reducing liability for Y2K readiness statements made in good faith, on EU companies must be rapidly assessed. EU companies operating in the US must be made aware that they have only a very short timescale in which to benefit from this legislation. Furthermore, if companies are prevented from pursuing litigation in America as a result of this law, they may attempt to sue European subsidiaries instead.

Additionally, a new bill entitled the "Commerce Protection Act" is now being proposed in the Florida Senate as another legislative approach to the Y2K problem. The bill prescribes exclusive remedies against individuals, businesses, and governmental agencies for damages caused by the failure of their information technology resources to function properly regarding date data. Amongst many items, it also expands the waiver of sovereign immunity; imposes insurance and warranty requirements on persons who undertake to assess whether information technology resources are year-2000 compliant or make such resources so compliant, bars certain class actions; and provides immunity from personal liability for directors and officers of businesses under specific circumstances.

6.   PROGRESS WITH COMMUNITY ACTION

The Commission is actively pursuing the initiatives announced in its Communication COM1998(102).

Overseeing our own Year 2000 project

First of all, the Commission continues to give top priority to making its own systems compliant. Regular meetings involving the Secretary General and Directors General keep progress under review through the Co-ordination Group on Organisation and Management.

Since 1996, all DGs have been asked to include in their annual information plan a specific plan to adapt their information systems to the Year 2000 and priority has been given in the budget allocations to executing them. Approximately 63% of the Commission's strategically important information systems are already

compliant, 24% are currently being adapted, and for the remaining 13% continuing investigations are under way.

Particular attention is being paid to ensuring that work in progress on those mission critical systems not yet compliant is completed in time. The underlying infrastructure (hardware, systems software, packages) is also being verified so as to ensure that it is compliant.

An inter-service group with representatives of all DGs oversees the ongoing technical activities within the Commission. The Commission is carrying out a comprehensive review of the liability aspects of Y2K. Work is also in progress to ensure that the general infrastructure (including buildings, security systems, lifts, and all related supplies) will not be affected by the changeover to the new millennium.

As regards the other European institutions, the inter-institutional committee for informatics (CII) is coordinating year 2000 compliant activities so as to ensure a common approach to the problem. The Commission has also organised a symposium with Member States and a joint conference with the Portuguese Government to discuss the adaptation of European information systems to the year 2000. Similar actions are planned with other Member States and for SMEs.

Support to Council and other international organisations	At the political level, the Commission has stimulated discussions on the Year 2000 in several Council meetings and has supported a high-level Presidency event held in May.

On the international scene, the Commission is actively co-operating with both the G8 and the OECD, and is also discussing with the World Bank ways to support developing countries in tackling the problem. |
Year 2000 network	At an operational level, a mixed public/private network including officials in Member States and representatives of key European industrial associations has been established and meets in Brussels periodically. It has already achieved concrete results, such as the sharing of product self-certification approaches, the exchange and mutual adoption of awareness raising material, the increased focus on cross-border issues and the exchange of information on states of readiness - an essential basis for this report.
Contacts with organisations in infrastructural sectors	Discussions have taken place with organisations tackling the problem in infrastructure sectors. These include the Joint Year 2000 Council and the Global 2000 Co-ordinating Group in the financial sector, the ITU Year 2000 Task Force for telecommunications, EUROCONTROL, IATA, ICAO and ECAC for air transportation, EURELECTRIC/UNIPEDE and UCPTE for energy.
On-going concern inside consultative groups	Several committees and consultative groups of the Commission services regularly examine the Year 2000 problem. Issues under review are the interfaces between public administrations, the activities of financial sector regulators (banks, securities, insurance, payment systems) and of nuclear regulators, including those in central and eastern European countries.
The Consumer Committee Indications	The Consumer Committee (a body which advises the Commission services in the management of consumer policy) has recently adopted a report based on the findings of an ad-hoc working group. The Committee *inter alia* report has recommended:

- Adapting standards to the Year 2000 Problem by establishing one standardised way of using the date function in products and services;

- Fostering consumers' access to information on potential Year 2000 problems, including "self help" indications;

- Consumer information campaigns to be organised and/or supported by public authorities at all levels (local, regional, national, European), paying special attention to consumers with special needs (because of their physical condition and/or social situation);

- Co-operation of public authorities and consumer organisations in the establishment of positive and/or warning lists of Year-2000 compliant equipment; such lists could feed a database to be published on the Internet;

- Setting a number of minimal consumer protection requirements (e.g. a one year guarantee) for the labelling schemes used in some countries ("2000 Ready", Year 2000 Compliant", etc.);

- Examination of typical exclusion clauses in contracts by consumer organisations, with a view to taking legal action where appropriate.

Successful web site

The world-wide web site on the Year 2000 and the IT impact of the euro (*http://www.ispo.cec.be/y2keuro*), established in December 1997, has rapidly grown to half a million hits per month and has been recently voted as the best government site on the subject[8].

7.   CONCLUSIONS

There is progress but much remains to be done.

The information available shows that progress has been made since the adoption of the Communication COM(1998)102 and activities have gained momentum in the majority of Member States. However, there are many areas of considerable concern where further efforts are required.

Public administrations...

Member States have started preparations for their **central administrations**, although the level of co-ordination and monitoring is very variable. Nevertheless, the public sector remains vulnerable: this is confirmed by the fact that even in those countries where preparations seem more advanced, the agencies in charge of monitoring progress have warned about the slow pace in some areas and these countries have embarked on contingency planning exercises. There is concern about whether the problem is being tackled in its entirety, including the risks associated with embedded systems, as well as interdependencies between administrations and interfaces with the private sector. Furthermore, higher priority may need to be given to examining the progress of **regional, local administrations and municipalities**.

...should improve co-ordination and information exchange

> The Commission suggests that each Member State accelerates preparations in public administrations and establishes, where they do not yet exist, mechanisms for co-ordination and monitoring, particularly in view of the need to disclose information to other Member States or third countries having legitimate economic interests in that country, and their own citizens. The readiness of local administrations and the development of sound contingency plans represent urgent priorities.

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[8] Wall Street Journal, Convergence Europe, 30 June 1998

The financial sector is making good progress

The Commission notes the substantial progress made in the financial sector. Although there is no cause for complacency and failures cannot be excluded, the proactive role taken by supervisors as well as the necessity to revise IT systems to support the single European currency give confidence that these failures would be limited in scale. For this to be ensured, it is essential that the sector pursues the industry-wide testing activities pioneered by the Global 2000 Co-ordinating Group, that supervisors keep institutions under close monitoring, and that effective contingency plans are developed.

...as is the telecommunication sector...

The telecommunication sector also appears to be making progress, confirmed by the international testing which is starting to take place, although relevant supervisory bodies seem to have adopted a lower profile than those in the financial sector.

The ITU Year 2000 Task Force is playing a key role as a forum for international co-ordination and as an information clearinghouse.

> The Commission advises the relevant authorities in the telecommunications and financial sectors to encourage the active participation of their industry sectors in the international Y2K initiatives of the ITU and Global 2000 groups respectively.

...but much more is required from the transport sector...

Little information has been provided about the readiness of the various transport sectors, with the sole exception of air transport. In this case, various associations of authorities and industry are stepping up their activities. The Commission supports the efforts of EUROCONTROL, which has carried out periodic workshops on the subject and welcomes the establishment of a web site to provide information on the progress and issues in the sector. Nevertheless, detailed information is lacking about the status of air traffic control systems throughout the EU.

Possibly because the criticality of computer systems is less manifest in the rail, maritime and road sectors, only very few Member States have reported that they monitor progress and there is no evidence of cross-border co-ordination and information exchange.

> The Commission recommends that information about the readiness of air, rail, maritime and road transport sectors is made available and exchanged between Member States.

Among the various infrastructures, the situation in the energy sector causes most concern. Only four Member States provided information about the sector as a whole and mentioned the situation in respect of energy transport networks. Where Y2K projects are known to exist, the tight deadlines and lack of demonstrable results make it difficult to judge whether preparations are sufficient.

Although Member States' regulators and more recently, the OECD's Nuclear Energy Agency, are already taking steps as far as nuclear power generation is concerned, given the strong concerns regarding safety these actions should be more visible and there is a need to continue information exchanges with regulators in CEEC and NIS.

...and what is the situation for energy?

> In view of the flows of energy between neighbouring countries, the Commission urges relevant authorities in the Member States to monitor more closely the progress in this sector, to elaborate contingency plans and to exchange information with their counterparts in other Member States as necessary. Given the relevance of the sector for the entire economy, such information should be publicly disclosed.

Infrastructures are only as ready as their slowest constituent

It should be noted generally for all sectors that if regulators do not know the status of the underlying infrastructure, then they are not capable of judging whether any particular sector is in good shape. The mutual dependency between infrastructures has led the UK to create a national infrastructure working group, where the financial, gas, water, telecommunications, and energy sectors are all represented.

Most governments in Member States have taken measures to help the private sector with awareness and positive actions. In some cases this has led to the establishment of Year 2000 task forces or platforms with joint public/private participation. The Commission welcomes these initiatives and recognises that there is no single model that applies to all countries in view of their diversity in terms of economic and public administration structures. However, it is clear that where no such central platform exists, the collection and dissemination of information is severely hampered.

Uncertainty is created by a lack of information...

Increasing emphasis will be placed in the coming year on information disclosure. Often it is better to have information that problems exist but that they are being addressed than to have the uncertainty created by a total lack of information. Being seen to be doing something will become almost as important as actually doing it, and vague, unsupported statements that projects simply exist and will deliver on schedule will start to be challenged.

If there is one area in which EU countries can generally be considered to be lagging behind their counterparts in countries such as the US, Canada, and Australia, it is in the recognition of the need for governments and infrastructural sectors to disclose information on their own progress.

With the volume of requests for information projected to increase substantially in 1999, it becomes vital to reduce the significant reporting burden on organisations by promoting greater commonality in information gathering and disclosure, as well as in assessment and verification. Audits or reviews conducted by trading partners or customers may be more valuable than those of external Y2K consultants

Greater emphasis and consistency on information disclosure and sharing.

> The Commission proposes that further efforts in this direction focus on:
>
> - improving information to consumers and preserving public confidence;
>
> - promoting, in full respect of the Treaty, the co-operation between enterprises within and between sectors;
>
> - encouraging the disclosure of information about the Year 2000 readiness of products, services and enterprises themselves.
>
> The State of Country Readiness Matrix reporting templates developed by the Global 2000 Co-ordinating Group for the financial sector can be used to record the readiness of any industry sector, including individual

organisations. The Commission advocates that this standard should be adopted by all EU industry sectors and governments without existing standards, as a basic transparent and consistent information gathering and reporting tool. The use of this reporting should form part of a country-wide strategy for communicating readiness, tracking progress, and promoting confidence.

Contingency planning must become a priority issue

One of the conclusions of the recent symposium on the adaptation of systems to the euro, which took place on the 27th July in Portugal, was a proposal for the Commission to hold, under the presidency of the Council, a meeting in May 1999 with Member States to exchange and co-ordinate contingency plans regarding the adaptation of public sector IT systems to the year 2000.

The Commission emphasises the need for all organisations to assess the risks posed to their business operations and to put in place contingency plans. In particular, efforts should be made to raise the awareness of SMEs on the importance of planning for the continuity of their businesses.

Contingency planning should also consider the consumer situation and envisage all appropriate measures to prevent any harmful consequence to the health, safety and economic interests of consumers, as well as the need to provide them with adequate information.

1999 - the year of prioritisation, external focus...

It is clear that 1999 will be an extremely busy year. Faced with an immovable deadline, organisations will concentrate their efforts on their most business critical systems. The focus will gradually shift from ensuring the compliance of internal systems to verifying the compliance of partners, suppliers, customers, governments, and infrastructures.

...widespread testing to demonstrate compliance...

For the vast majority of organisations, which will not have completed their adaptation work during 1998, 1999 will be a year of internal, bilateral, national, cross-sectoral, and international testing to demonstrate compliance. Co-operative "proxy" testing is now being considered to minimise the effort required by individual companies by reducing their need to test with all their partners. Currently, forerunners are facing delays and many will find this testing more onerous and expensive than initially foreseen.

The experience of the telecommunications and financial sectors has shown that external testing is rarely beneficial in terms of discovering actual Y2K problems. Since thorough internal testing is a prerequisite for external trials, and organisations are aware of the bad publicity which could be created by poor results, such tests are invariably highly successful. These tests are the most complex ever attempted and expensive in both time and resources - and may well fail due to reasons apart from the Y2K effect.

...auditing results and minimising risks.

Regulators will begin to conduct audits and on-site investigations to verify claims. Great pressure will be placed on those who have not demonstrated their compliance towards the end of the year, when regulators may be obliged to revoke licenses and banks may remove credit facilities from customers whom they consider to represent unacceptable risks. Large companies will reduce their reliance on unprepared suppliers.

> The Commission recognises the difficulty of organising such tests but believes that strategic external testing will become vital in 1999, primarily to reassure the public, partners, customers and suppliers.
>
> European organisations should actively participate in global testing initiatives, and national testing days in critical sectors should be planned where possible. Countries and industries must work together on a common approach and planning for testing activities.

Finally, the Commission also proposes that an ad-hoc Council Working Group on this topic should be established immediately. The Commission suggests that the role of this group would be to co-ordinate policy activities and identify priorities, generally providing a greater focus and drive in the short time left to take action.

The Year 2000 problem is a major challenge for businesses, citizens and administrations within the European Union and the world as a whole. Although the deadline is approaching and some areas and sectors of the Union appear to be less prepared than would be desirable, there is still time to cope with the most critical systems and to plan for contingencies.