Y2K — what is it?

We have all heard of the Y2K problem, millennium bug or millennium time bomb, but what exactly does it mean? In summary, much of the software we use today was written to have only two digits to represent the year in date fields; as a result, on 1 January 2000 many systems will interpret the date as 1.1.1900, which will cause failures in data computations.

The problem affects most computers and software embedded in electronic equipment. Correction requires the inspection, evaluation, alteration and testing of computer code — and it has to be complete by 31 December 1999. Industry and government are spending billions of dollars in an attempt to keep systems up and running on 1 January 2000. The Australian government estimates that $15.24 billion will be needed to prevent the problem. But what about your library? Have you thought about what needs to be done to keep your services running? Loans, fines, even the library security system could be affected if your systems are not Y2K-compliant.

Year 2000 — a national approach

The Australian Government has established a national strategy to increase community awareness of the millennium bug. The strategy aims to assist Australian business to recognise the scope of the problem and to acknowledge the potential consequences if the matter is not addressed. As part of the strategy the Federal Government has established a Year 2000 project office within the Office of Government Information Technology to support, advise and ensure a uniform effort on the part of Federal agencies in their task.

In September 1997 the Minister for Finance and the Minister for Science and Technology released a joint media statement on the 'National strategy for Year 2000 computer bug'. In the statement they announced that Federal and State governments, as well as peak industry bodies, will work together to ensure both the government's own systems and those of the broader community are Year 2000-compliant.

The government is working with Emergency Management Australia (part of the Department of Defence) to ensure that there are Year 2000 contingency plans in place should essential infrastructure, such as telecommunications, gas, electricity and water, experience problems at the turn of the century.

The government has allocated $5.43 million to the Department of Industry, Science and Technology to finalise and implement the strategy.

In a recent announcement $127 million has been promised to help fix the problem. The additional funding recognises that progress within Federal agencies and the wider community has been slower than hoped. Funding will be allocated to highly-technology dependent agencies to enable essential remediation work to ensure that key services are fully operational.

John Moore, Minister for Industry Science and Tourism also recently announced an additional $4.35 million will be allocated for a national television campaign aimed at small- and medium-sized businesses. The campaign will try to raise awareness and stimulate action within the business community.

The State governments have attempted to address the problem by disseminating information to their departments and the general community in various ways, including the Internet. The New South Wales and Commonwealth governments have established an Australian Governments' Year 2000 Home Page as part of the strategy (http://www.y2k.gov.au/html/index.html). The site contains letters of compliance from vendors, e-mail from users and software experts within and external to government departments, and resources available on the World Wide Web, as well as press clippings and releases, papers, presentations, links to local resources, and some Y2K jokes, just to lighten things up.

The Parliament of Victoria's Public Accounts and Estimates Committee is to undertake a review of the readiness of the Victorian public sector to cope with the Y2K issue. The committee will be assessing the level of awareness of the problem in the Victorian Public Sector; the risks associated with Y2K; the total costs expected to be incurred by the Victorian public sector to ensure Y2K-compliance; the adequacy of planning within the Victorian public sector; the implementation, management and monitoring strategies for Y2K-compliance; and whether the Y2K problem has been addressed in service agreements and contracts.

inCite asked the State Libraries what they are doing to ensure Y2K compliance and their comments follow. The State Libraries seem to have the problem under control. But what is happening at a local level? Has your local council or parent company instituted a Y2K-compliance strategy? Can you guarantee that your suppliers will be able to fill your orders beyond January 2000? Don't leave your clients in the dark. ■

Where to get more information

There are several web sites where you can find out more about what the state and federal governments are doing to help their departments and agencies become Y2K-compliant. They are:

- **Australian Governments Year 2000 home page (Federal and NSW governments):**
  http://www.y2k.gov.au/
- **Northern Territory Government:**
  http://www.nt.gov.au/year2000/
- **South Australian Government:**
  http://www.sacentral.sa.gov.au/agencies/dits/Y2KPage.htm
- **Victorian Government:**
  http://home.vicnet.net.au/~sbusvic/yr2000.htm
- **Western Australian Government:**
  http://www.wa.gov.au/y2k/home.html

Working on Y2K compliance

[State Libraries are taking the Y2K issue very seriously. inCite *asked all state librarians to give a short overview of what measures the libraries are taking to make 1 January 2000 as painless as possible]*

Ironing out the bugs at the State Library of Queensland

The State Library of Queensland, like most modern libraries, relies heavily on information technology to deliver client services. To ensure continuity and reliability of our digital services the library commenced preparation for Y2K compliance in 1995. Realising that the State Library's application of technology is extensive, with its information technology infrastructures in many instances overlapping when delivering services, the Y2K implications have been grouped below highlighting the networks to which they are most closely associated and how the library is dealing with the 'millennium bug'.

ORAQLE is the Library's in-house developed core library collection management system. The system has been developed over many years and has proven to be extremely effective since the late 1970s. However it is mainframe-based and generally will not like the Year 2000 when it arrives. The Library is currently in the process of replacing the ORAQLE service with the Virtua (VTLS) product and is also replacing the existing 3270 terminals with Pentium PCs. The replacement project is scheduled for completion by early 1999 with all infrastructures being Y2K-compliant.

Quolls is a PC-based stand-alone lending system installed in more than 100 rural libraries across Queensland and is closely linked and integrated with ORAQLE. The library expects, funding permitting, to replace *Quolls* with the *Aurora* product before the turn of the century along with replacing existing desktop equipment with Pentiums. The existing *Quolls* software developed in-house is being reprogrammed to accommodate Y2K and will be ready for deployment by mid-1998 in the event that not all sites can be upgraded to Aurora by mid-1999.

Quiros is the code name for the library's wide-area Novell network. Many of the existing desktops are not Y2K-compliant and need to be replaced. Assuming funding is provided, desktops will be replaced prior to 2000.

Minimal problems are expected for the rest of the Library's databases and software applications as these store dates in an eight-digit format.

The funds available to fix the problem are limited. The Library plans to isolate the equipment which cannot be economically made Y2K-compliant from the network before the end of 1999.

The Sun hardware and Solaris operating system which host the Library's Internet Gateway Services are Y2K-compliant and no disruption to service is expected.

Mike Bishop, Information Systems Division

More comments from other State Libraries follow overleaf...

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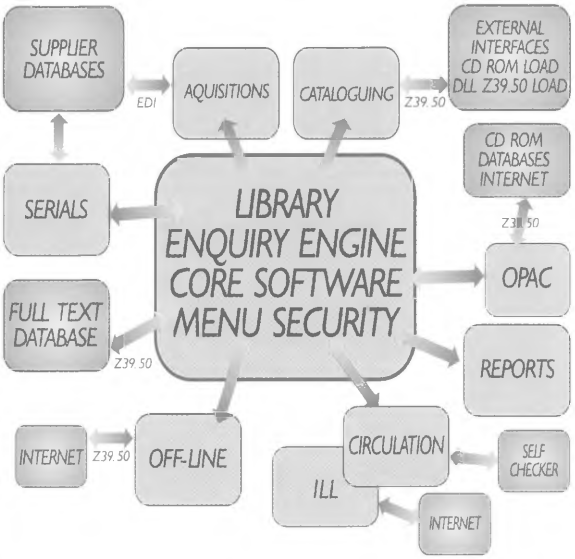

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Assessing the impact of Y2K

The State Library of New South Wales has initiated a Year 2000 compliance project in line with the New South Wales Government's whole-of-Government approach to the problem. The project will help to ensure that potential disruptions caused by this date change have been identified and resolved. It is intended to have rectification programs completed by the end of 1999.

A Year 2000 assessment team has been established, comprising representatives from across the library. The scope of the team is to identify and report on the State Library's Year 2000-compliance requirements and to define the business functions that will need to be included in the rectification program. The Year 2000 strategy and project plan will be developed once these areas have been identified.

The Year 2000 assessment team is currently reviewing activities and assessing the business impact of function failure/unavailability based on information from managers and a hardware review/audit. The team will identify resources critical to the State Library's business functions, including interface relationships (both internal and external). Information is also being sought from library suppliers and service providers to ascertain their Year 2000 compliance.

Dagmar Schmidmaier, State Library of New South Wales

Team effort to address the problem

The State Library of South Australia has allocated an officer to address all aspects of Year 2000 compliance in conjunction with Arts SA and the whole of Government Task Force. This includes addressing information technology issues as well as those related to other equipment and services.

The Library has reviewed all its internal computer systems (that is, those which are not included in central whole-of-government systems for South Australia). The integrated library management system (INNOPAC) has recently migrated to a Year 2000-compliant hardware platform. Innovative Interfaces Incorporated have certified that the INNOPAC package itself is Year 2000-compliant. The Library uses the current ABN system from the National Library of Australia for cataloguing and Inter-library Loans. These systems are being replaced by the NSP systems which will be Y2K-compliant. This combination of steps ensures that the Library's core systems will operate on 1 January 2000.

All other internal software has been assessed with the in-house rostering and human resource management package, Caesar, requiring upgrading later this year. The Library has a plan to upgrade all its PCs and upgrade to Windows 95 (or the then-current year version) to meet Y2K compliance. The Library has a program to contact suppliers of CD-ROM and other products for assurances of their Y2K compliance during the next nine months.

Building services and non-information technology equipment are being assessed by the Arts SA Buildings Services Officer under direction from Arts SA Year 2000 co-ordinating committee.

Given actions taken so far and those planned, State Library of South Australia expects a minimal disruption on 1 January 2000.

Robyn Collins, State Library of South Australia

Forward planning has paid off

Over the last six to twelve months the State Library of Victoria has examined the likely impact of the millennium date change on its systems and believes it is well placed to deal with the problem.

More than ten years ago the library adopted a strategy of purchasing packaged software from reputable suppliers rather than engaging in in-house or even contracted software development. Wherever possible it has also implemented equipment replacement programs that have seen much of its potentially non-compliant equipment replaced, with any residual items to be phased out in 1998/99.

The library's Y2K program covered not only the computer systems used to support its normal staff and business activities but also those systems used to manage buildings and plant, security systems, and voice communications.

The analysis considered the hardware, operating systems software, and

applications software as three separate categories. Equipment suppliers and software vendors were asked to indicate in writing the level of Year 2000-compliance of the hardware/software they have supplied to the library. If there is any failure to comply the supplier/vendor has been asked to outline their strategy for achieving compliance, giving firm target dates for the implementation of the strategy.

At the moment the library has three major applications systems in its corporate services areas which need to be upgraded. This is planned for 1998/99. The main library management system is already Year 2000-compliant.

The library expects to be fully Year 2000-compliant by the middle of 1999. Because of its strategy of using only reputable packaged systems this should be achieved at minimal additional cost as most of the upgrades and modifications will be implemented as part of the normal systems enhancement program

Chris Hannan, State Library of Victoria

Risk assessment the key

The Library and Information Service of Western Australia assembled a project team early in 1997 to manage the risks associated with the Year 2000 problem. A Year 2000 risk audit has been undertaken and responsibilities for managing the risks have been clearly identified. Quarterly reports on the progress of the Year 2000 project are prepared for the Library Board of Western Australia and the Western Australian State Government. The assessment of the project team is that the Library's exposure to the problem will be moderate. The major risks identified are those associated with computing systems and building management systems.

The risks associated with building management systems are of major importance to libraries and these are receiving equal attention to those associated with computing systems. The building management systems in the Library and Information Service of Western Australia are scheduled for replacement this year and the new building management systems will be Year 2000-compliant.

The strategies identified to manage the risks associated with computing systems include confirmation of Year 2000 compliance with vendors, inclusion of Year 2000 compliance in all new system acquisitions and planning for the implementation and testing of Year 2000-compliant upgrades. The Year 2000 world wide web site (http://www.liswa.wa.gov.au/year2000) is used to provide progress reports and additional information on the Year 2000 project.

Doug George, Library and Information Service of Western Australia

Smooth transition predicted

Like other organisations that rely heavily on computers and information tech-

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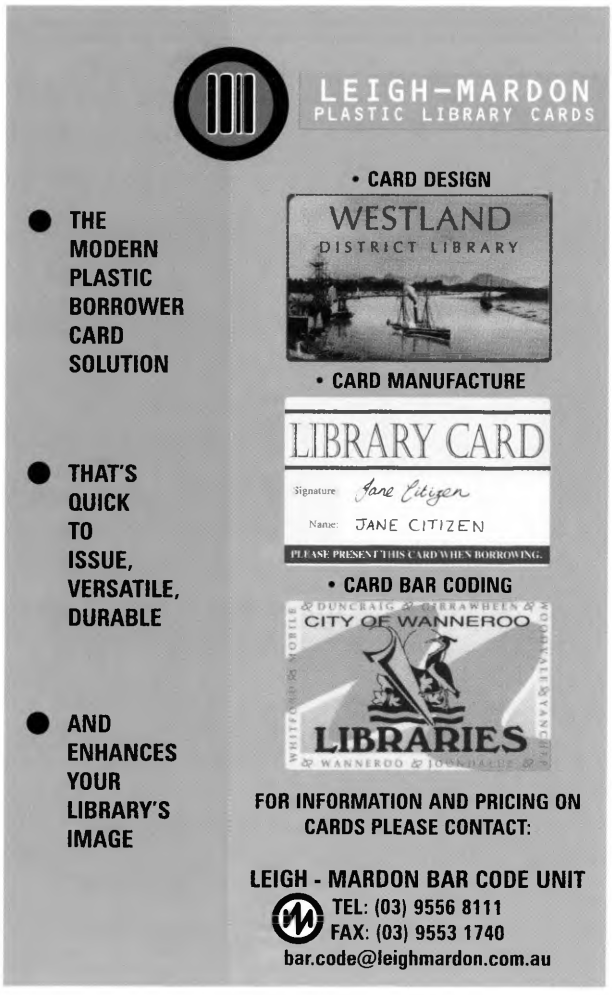

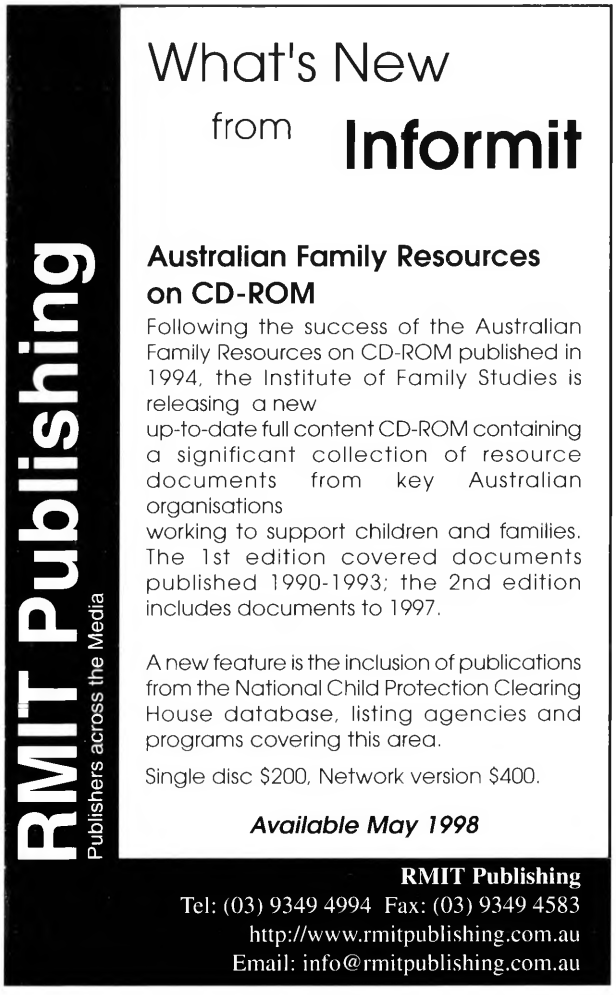

The State Libraries

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nology to carry out their daily business, the State Library of Tasmania has put considerable thought and effort into how to avoid the Y2K problem. Over a period of time, the State Library has undertaken a number of measures to ensure a smooth transition at the turn of the millennium.

The State Library identified three main areas of concern:

- hardware used in libraries;
- library systems operating software; and
- administrative software and hardware

The State Library's Library systems support unit has introduced a strategic program of gradually replacing outdated PC hardware with new equipment which is Y2K-compliant.

The current library systems operating software, Dynix, is guaranteed by the supplier as being able to cope with the millennium bug problem. At present the State Library is going through the process of tendering for replacement software. It is anticipated that the new systems software will come into operation within the next twelve months. One of the most important criteria listed in the software specifications is that the new software package must be Y2K-compliant.

The State Library of Tasmania is a division of the Department of Education, Community and Cultural Development (DECCD). The DECCD has its own Informational Technology Branch which provides department wide solutions to information technology challenges and is responsible for information technology infrastructure for the entire Department. One of the Branch's project teams has been working on the Y2K problem for some time, with a specific focus on administrative software and equipment.

The State Library is confident that it has done everything that can reasonably be expected in the way of preparation for the so-called 'millennium bug'.

Cathy Doe, State Library of Tasmania

For whom the bell tolls

Brendan Scott, Gilbert & Tobin

T*ime:* Wednesday 19 January 2000. *Place:* X Holdings — a major repository of bibliographic and holdings data within Australia. Most of the library systems have had relatively low activity over the Christmas period, but university library systems are beginning to generate more traffic. Since Tuesday morning, the X help desk has been receiving queries about intermittent, but spurious, search results and has been trying to track down the problem. X calls on its IT suppliers for maintenance troubleshooting.

Over the following days, the IT supplier discovers the source of the problem — the data has been corrupted, probably by errors in the backup/restore process. It appears that the corruption has resulted from the interaction of the IT supplier's system, X's operating system and the interface used by a number of smaller libraries.

The problem is relatively easy to solve — to restore the integrity of the database involves rolling back a number of weeks and reloading data. It is mid-February before the database has been restored. X has been facing fierce competition from overseas institutions and, as a result of the problems, one major client switches allegiances. Further, X becomes the subject of adverse parliamentary and media comment. It takes many months of crisis management at a public relations level to resolve the problem.

What this scenario attempts to illustrate is that the library community relies on mutual co-operation to operate and there is a broad spread of potential defendants in the event something goes wrong. X may have actions against a number of possible defendants — including the small libraries with the non-compliant interface, the IT supplier, the IT suppliers to the small libraries, the operating system suppliers, and any consultants who have told any of those parties that the system will be Y2K compliant.

Further, there may be questions raised about the management of X. For example, given the amount of publicity surrounding the Y2K problem, they cannot claim that they were unaware of a problem. If X is a public body, it may therefore have failed to discharge its obligations under its governing legislation. Alternatively, if X is a private company the directors may be in breach of their duty to act in the best interests of the company. In both cases, X's officers at a management level may be exposed to both civil and criminal sanctions.

If this is not enough, X will also face the realisation that even if it has good claims against one or more defendants, recovering that money will involve large, technically difficult and, hence, costly litigation. Further, some of the relevant parties may be resident outside of Australia. Some jurisdictions are considering passing legislation limiting companies' liability for Y2K problems (for example, the United States).

One aspect of the Y2K problem which sets it apart from most other legal problems, is that the problem, and its likely time of occurrence, are known. The most logical process now therefore is to develop and implement a risk management strategy to anticipate the risk. Such a strategy should not only seek to prevent the occurrence of problems, but also set in place a means of managing the risk should it eventuate.

It remains to be seen whether the Y2K problem will cause a major or minor disruption to business. What we do know is that the risk exists. We also know that, to a court, to remain ignorant of it will seem more like negligence than bliss. ■