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Coming to grips with millennium bug

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THIS may sound like science fiction or one of those bizzare end-of-the-world scenarios espoused by doomsday cults, but human civilisation could very well come to a grinding halt on Jan 1, 2000.

In fact, if you're partying away, as many people are likely to be on that epochal New Year's eve, you could find the party ending abruptly as the lights and music go out.

You might also have your conversation cut short if you are on the telephone wishing someone overseas 'Happy New Year!'. And if you happen to be flying, you could find your plane dropping like a stone as the engines shut down automatically.

What, you ask, could possibly cause such tribulations to come to pass? It's really quite simple. The fact is most of the world's computer systems are not designed to operate beyond the 20th century.

Unidata Sdn Bhd managing director K.C. Toh who heads the National Information Technology Council's Y2K Task Force, said the problem could be traced to the fact that virtually all computer systems use two-digit dating systems.

The Y2K Task Force was set up at the prompting of Prime Minister Datuk Seri Dr Mahathir Mohamad to look into the implications of the millennium bug and the measures that should be instituted to tackle the problem.

Toh, who shares the joint chairmanship of the task force with Science Advisor to the Government Tan Sri Dr Omar Abdul Rahman, explained that early programmers who were trying to save precious storage space in computers considered it unnecessary to include the century signifier '19', opting instead for only the last two digits to denote each year - for example, using 74 instead of 1974.

He said they very naturally assumed that there wouldn't be any problems as the systems they were creating would be obsolete long before the end of the century.

What this means is that computers all over the world would assume that the year 2000 was actually 1900 while others would just fail outright.

He said the task force would do everything possible to ensure that essential services such as water and electricity supply, hospitals, police force and telecommunications are not disrupted when the year 2000 comes.

"We will also try to ensure that entertainment programmes will go on. You may not think this is important, but there are going to be major celebrations worldwide. It would be sad if we missed that," he added.

Toh said the task force was planning to publish a Y2K guide to ensure that every Malaysian was aware of the threat posed by the millennium bug as everyone would be affected in one way or another.

"We want everybody, not just computer people, to be aware of the pitfalls of the year 2000. Many people think, 'I don't even have a computer, so I won't will be affected'.

"The bug has the potential to affect everybody. Your electricity supply could be cut. Your telephone could stop functioning. You could be in a hospital and the life support system could stop working."

Financial institutions, for instance, could be hit in a big way as dates were a major consideration in the banking business.

"January 1, 2000, is a Saturday but it will be interpreted as January 1, 1900, a Wednesday. Banks' security systems will be affected as bank vaults which are programmed to open on working days will actually open on

Sundays.

"Dates are used to count interest charges, but when 00-99 turns out to be -99, how do you calculate interest?"

"In the Cobol computer language there is another problem. Instead of showing a negative number, it will show a positive number.

"So overnight, you get 99 years of interest. You may be very happy to hear that if you have a savings account, but you must also remember that you will also be charged 99 years of interest on your credit card and housing loan!"

Unisys (M) Sdn Bhd Information Services Group Year 2000 programme manager Chua Yuen Ching agrees and feels that business magazines and business sections in newspapers should give more publicity to the Y2K issue as many businessmen are still very much unaware of the impending threat that it posed to their businesses.

She said it was important for business leaders to recognise the problem and do something about it before it was too late.

"In Malaysia, people who are aware are the IT people. I don't think the CEOs are aware of the real problem. They probably think it's under control.

"The fact is it doesn't just affect IT equipment. It also affects all non-IT equipment with embedded microprocessors and computer chips that are date driven.

"Everybody goes through a denial phase, saying it's just vendor hype. Then they get very angry with programmers for having created the problem in the first place."

Toh said CEOs should not leave the problem to be solved by their IT people but should take it on themselves as it could threaten the very survival of their businesses.

"If you leave it to the computer man, he will solve it as a computer problem.

"But it's a business problem. Bosses should ask whether their business will survive."

What's more, he also pointed out that CEOs had to ensure that their business partners were Y2K compliant as well.

"The cascading effect will be terrible. If one bank's computer system is not Year 2000 compliant, all banks will be involved, all customers will be affected and everyone who has dealings with their customers will also be affected."

Toh said the task force had found that "big computer users" were taking the issue very seriously but "small computer users" were either unaware of the problem or did not think it would affect them.

He warned that business people who did not take the necessary measures to protect their businesses could find them going under in the year 2000 and beyond.

Toh said companies should first have an impact study done, establish their priorities, following which they could choose to do one of three things with their computer systems - rehabilitate, replace or ignore them.

"If it's not going to hurt, leave it alone. For instance if your air conditioning system is programmed to shut down on Sundays and switch on earlier on Mondays, you can ask your guard to switch it on manually."

Chua urged all CEOs to take action immediately as there was very little time left for them to prepare their computer systems for the Y2K challenge.

"We are already at the end of 1997. You should have one full year to test otherwise you won't really know if things will grow wrong. So you've just got 1998 to do it."

"You have to identify upfront which are the mission critical operations

and which can wait while we tackle major issues.

"It's the 80/20 formula. Twenty per cent of the most important applications contribute to 80 per cent of the business."

Chua said this was because the process of rehabilitating software programmes was tedious and time consuming.

She said there were specialised computer-aided software engineering tools that could be used to scan for the millennium bug, but as it comes in many different forms, sometimes it was necessary to "look manually line by line".

Chua also noted that Malaysia was very short of IT people and urged the Government to make it easier for IT-trained personnel from foreign countries to work here.

"We are getting IT people from Unisys in Philippines and India but it's been very difficult because of red tape at the Immigration Department.

"We are fortunate that the Prime Minister realises the importance of dealing with the Y2K problem but it doesn't seem to have filtered down to lower levels of Government like the immigration authorities."

Chua also suggested that the Government take steps to relieve companies of the burden of having to pay tax for Y2K services as it would not add to companies' profit margins but would only help them operate without disruption.

Chua said she was glad that the Government had set up the Y2K task force but feels that it was unfortunate that lawyers and auditors were not represented.

"Many important people are included in the task force but I feel that important components are missing.

"Lawyers should also be included because legal liabilities are involved. For instance, planes have to fly in the year 2000 and airlines will look at it as a safety problem. What are the legal liabilities?

"Lawyers also have to look at business contracts to see if requirements for Y2K compliance are included."

"Auditors are also needed to verify and certify that an application, device or process is Y2K compliant," she added.

So far, Chua said, only one local company had approached Unisys (M) Sdn Bhd for its Y2K expertise but is confident that many more would follow.

She observed that Unisys Australia which started offering Y2K services one-and-a-half years ago had now deployed 70 per cent of its staff of 300 to handle Y2K problems.

"We will see the same trend here. Money is not the issue. The issue is whether we have the time, the people and the skills to help our clients solve the problem."

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