CYBERPOLITIES - AUSTRALIA, ASIA AND THE INFORMATION REVOLUTION
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It takes an interesting invitation to get me out on the public stage these days - but this one from Brian Wood made the grade.

I've always been a great admirer of professionalism in whatever area it exists. And in the field of advanced software there is so much that's admirable about what Jim Goodnight and his colleagues from the Australian office of SAS Institute are doing - and even more importantly, how they are doing it.

This is a company which commands enormous loyalty from its staff and from its customers. That loyalty, which you can see reflected in an industry-low staff turn-over rate, is a sign of a healthy corporate culture and committed leadership. It grows out of an approach to work which encourages creativity and innovation and treats each worker as a whole person, with an important family life of their own, one which can't be isolated from their professional lives.

It's not a particularly fashionable approach to industrial relations at present, but it is certainly delivering for SAS and its employees, and for its users too.

So I'm very happy to be here.

You are spending these two days listening to some very knowledgeable people talking about data warehousing and data mining and IT management. You will probably be pleased that I have no intention of trying to talk about any of these things.

What I want to do instead is to say something about the context in which all this is happening. What has always interested me most about technological change are these questions: What are we doing with it? And what is it doing to us?

I don't mean this in the *Jetsons* sense of how technology will transform our lives outwardly - giving us videophones and digital television and intelligent vacuum cleaners. That is always fascinating of course. But the products will come and our lives will adjust to them.

What I mean is the deeper sense of what information technology - and not just the technology itself, but the sheer relentlessness of the change it brings - will do to our relationships with one another and to the structure of our society.

The pace of that change generates deep uncertainties in our community and creates new problems for the political institutions in countries like Australia. I spoke about some of these problems in a couple of speeches at the University of New South Wales last year.

At the launch of the final report of the Labor Government's Broadband Services Expert Group in 1995 I said that the new technology presented us with a great challenge.

It could take us to a more democratic and equitable society or one in which injustice was intensified by unequal access to knowledge.

It could help bridge the gulf between the developed and the developing world or it could make the gulf wider.

It could strengthen our national culture and those of other countries, or by the flood of homogenised 'global' product, it could fatally weaken them.

In other words, the technology is only a means to an end. We still have to make important decisions about what those ends should be - and those, inevitably, are political decisions.

I have read that the importance of the information industry to Australia's future is about to be rediscovered by the Government. Personally I'm surprised it was ever mislaid. But we can all be pleased it has been found again.

I don't want in any way to play down the importance of the industry policy questions now being discussed - what sort of information industry does Australia want and need; how can we best encourage its growth. An important debate is under way and issues like government procurement policies and support for research and development are a vital part of it.

But the point I want to emphasise is that the public policy questions which developments in information technology raise have to go well beyond these industry issues. Certainly they must if Australia is to be a significant player in global information technology in the next century while remaining the sort of society we want to be.

But I want to speak tonight about a different aspect of the information revolution, one which has received relatively little attention. I don't want to talk so much about what is happening in Australia, as about how information technology and a global networked environment are changing the way the world works and what this means for us and our neighbours.

The networked world of the 21st century will be very different from anything we have known in the past. If Australia wants to prosper in it, we must understand the changes and identify the strengths we will need to build.

I have often said that I think we are living through the greatest period of change in the world for 150 years. The end of the cold war and its bipolar structure was a pivotal event, but it was secondary to deeper shifts which are transforming the way the international system operates. These are largely the work of the linked processes of economic globalisation and the information revolution.

I called this speech *Cyberpolities* to underline the significance of that change. What I mean by this is that the fundamental building blocks of our international system - whether they are nation-states, business corporations, trans-national interest groups,

religious and cultural linkages, or official and unofficial multilateral organisations - are being transformed by the information revolution. They are beginning to carry different weightings, to have different impacts, and to act in different ways, from anything we have known in the past.

Most people still think of international relations as the preserve of governments, dealing with one another through what are known as 'official channels,' with traditional diplomacy as the medium of their communication.

But that model of the world is changing. We are moving into a much more complex and multi-faceted environment in which increasing quantities of power lie outside the bounds of the nation-state. This mirrors the way the information revolution is helping to redistribute power in different ways in our own society.

I noticed a report a few weeks ago of a local information technology expert saying dismissively 'I don't believe in countries any more'. Well, I think nations and countries are more tenacious than that. Geography, large populations, robust economies and strong military forces are certainly not irrelevant.

But I believe the foundations of the nation state and its near-monopoly of international power <u>are</u> being eroded. The views and actions of other polities - large corporations, media interests, lobby groups, regional and global organisations - increasingly need to be considered, weighed, negotiated with.

The ability of governments acting alone to solve domestic problems has never been more limited because so many more of the issues they have to address now have an international dimension and because dealing with that international dimension now engages many more participants than other national governments.

One impact of the information revolution has been to make international affairs more transparent than they have ever been. Information flows in unprecedented speed and volume through the media and across the internet.

Governments and their diplomats may sometimes wish it was otherwise - and there is no doubt that it sometimes complicates the quiet resolution of problems. But there is no going back.

As any trawl across the internet will show, the early adopters of the technology are not governments but those out of power. Compare almost any government's web site to that of a passionate advocacy or public interest group like Amnesty International.

From right-wing conspiracy theorists and militia groups to human rights and anti-government groups on the left, the people who have seized most enthusiastically on the new technologies and have used it most imaginatively are the powerless not the powerful. This isn't to say that the powerful don't still have the inside running, and aren't making great efforts to catch up, but it is changing the relative balances. It is making it easier for groups to organise and coordinate and spread their messages.

Non-government participants can enter the policy process more easily than ever before, and can do so across national boundaries.

Anyone who doubts the influence of their advocacy only has to look at the environment movement or more recently the campaign against landmines, to see how the agenda can be reset from outside governments. And this largely because of - or at least facilitated by - the communications and information revolution

We used to say that information was power. But as technology facilitates the spread of information, the next source of power in the world will not be information itself but the ability to access, collate and interpret it - to make sense of it. That's true for businesses looking for markets, for soldiers seeking military advantage, for interest groups looking to exert their influence. And it is what this company, of course, is very largely about.

Internationally, this means that power relativities among nations are changing in the direction of those societies which can handle all the dimensions of information.

Look at what has happened to the United States.

Remember all that debate a few years ago about the decline of America as a great power? Bestselling books were written on the subject.

Unfortunately the thing the books left out was the vast changes which were about to flow from information technology. The analysis was blind to the way the American economic and social environment was ideally placed to adapt to this new technological shift in a way none of the other great powers or potential great powers could match.

The United States now accounts for three quarters of the global software industry and is the home of nine of the world's ten largest software companies, including SAS.

It is unmatched in the assets of what have been called 'soft' power - intellectual capital, cultural influence - in addition to the traditional measures of hard power like the size of armies and the strength of economies - although the United States is no slouch in either of those areas.

On the other hand, the former Soviet Union, with land, population and resources to spare but lacking the new dimensions to power - and, just as importantly, the social capability to deal with them - slumped precipitately.

The ease with which capital, knowledge and specialised labour can be moved around the world has facilitated the creation of what Richard Rosecrance recently called 'virtual states', that is, states which, like their corporate counterparts, do not seek to combine all economic functions, but which rely on mobile factors of production. They understand that they do not themselves need to command resources or to export directly in order to prosper but can use technical and research services, product design, marketing, investment and financing to create their own economic sphere and stimulate its growth. In future very few countries will have all the components necessary for a technologically advanced society.

In this new environment, land and raw materials have become relatively less important; knowledge, in all its forms, much more important.

The result, familiar to Australians, is seen in the way in which the terms of trade have been shifting. A decline since the 1950s in commodity prices of nearly 40 per cent relative to the price of manufactured goods has been paralleled by a growth in the price of services three times that of industrial goods.

Economically it is hard to disentangle the impact of globalisation from the developments in information technology which made it possible. But we can be certain that the competitiveness which now marks global economic competition will massively increase as the networked world develops.

President Clinton's Framework for Global Electronic Commerce report last month focussed attention on one aspect of this new competitiveness: the issue of on-line commerce. The report estimates that, with perhaps a quarter of a billion people using the internet by the end of the century, on-line commerce will by then be worth tens of billions of dollars.

That has enormous implications for competitiveness, for trade policy and for government revenue. It alters the way we have to think about commerce. Ideas about scale, advertising, distribution and marketing all change. Intellectual property rights become even more important.

It also gives added urgency to our efforts to do all we can to facilitate openness through measures like the World Trade Organisation and APEC information technology agreements.

All this means that trade and technology policy have become high policy - as critical to our national survival and prosperity as defence policy. It was why I spent so much of my time trying to get APEC structures and outcomes right. It is why any Australian government must pay the most careful attention to the international environment in which Australia is operating.

The information revolution is altering our ideas about security as well.

The nature of military power is changing. The Gulf War showed the extraordinary capabilities of stand-off systems, smart weapons and comprehensive intelligence. Military platforms have become less relevant than the computer software which goes on them.

In relative terms, this will make military power more affordable and more attainable for more countries. It will be easier for countries which formerly lacked the technical and professional expertise to operate and maintain high capability systems to do so. Military capabilities will continue to grow, including in our region.

It also means, however, that if Australia maintains and develops our technical, scientific and computer skills we should continue to retain a comparative advantage in advanced defence systems.

Information warfare may have been over-hyped, but there is no doubt that attacks on computer systems, including with viruses, or efforts to disable the military or civilian communications networks of adversaries, are an important new area of defence concern.

The ability to gain or deny access to critical information has always been important in military strategy, but never more so than now. The present challenge is to get the intelligence in useable form down to soldiers on the battlefield as well as to the Generals.

As some of you know, I believe this new world also has important consequences for the future of nuclear weapons. New technology has given weaponry an accuracy which substitutes precision for brute force and with far fewer risks to civilians than those from nuclear weapons. But while nuclear weapons remain in international arsenals, their eventual proliferation is inevitable. That was why we established in government the Canberra Commission on the Elimination of Nuclear Weapons, a group of highly-respected scientists, former soldiers, diplomats and military strategists to provide practical suggestions on ways this could be done. The present Government considered the report of the Commission last year, but it has not yet endorsed or rejected its recommendations. I hope it will endorse them and work to implement them.

But despite the efficiency of the new technology, I believe the information revolution will make the global strategic environment more secure.

The declining relative economic importance of land and physical resources will change what is strategically important. Land can be physically captured. Knowledge and capital can't. So while war for territory has many causes, and will not become impossible, one historic reason for engaging in it - to secure territory for economic advantage, or because of fear that it will be denied - will be less pressing. Japan's war aims during the Second World War are a good example.

Australia's prime strategic reality is space - our landmass and our maritime surrounds. Because the new technology promises to make that space more transparent, it turns space into depth, and makes Australia more secure and defendable.

I have been arguing that the reordering of concepts of security, changes in the nature of economic strength, and new challenges emerging to the nation-state, including the multiplicity of new voices entering the international debate, are transforming the international system.

But this growing number of voices in the international process and the challenges they issue to national governments don't mean that governments need to do less. On the contrary, it has never been more important for governments to have a clear sense of national goals and the tactical skills to deliver them.

What does this mean for Australia and this region?

I have made the point in a number of speeches around Asia over the past twelve months that the region's future growth is not assured.

If growth in the region is to continue I believe it will have to involve a commitment to what I have called the Three Opens - open economies, an open region and open societies.

In the face of new competition, the most pressing need for all the developing Asian economies will be to keep moving up the manufacturing chain towards more high technology and value-added processes.

And that will require agile and flexible economies which depend for success on their ability to understand foreign markets and to learn rapidly from them. That, in turn, needs access and openness both ways.

I also believe it will be impossible to reach the highest levels of economic success without open societies - communities in which information flows freely both between its members and from outside it, and in which the transmission lines conveying the views and feelings of its members to its leadership - political, business or cultural - are rapid and effective. Open societies will emphasise a questioning and involving education system, the easy movement of people, and the rapid transmission of ideas.

Information technology is at the core of all three dimensions of openness. It makes them possible - and at the same time it makes them essential.

Most of our Asian neighbours recognise the central importance of information technology to their long-term strategic planning. Malaysia's Multimedia Supercorridor and Singapore's Intelligent Island Strategy are two examples.

I don't think Asia's growing involvement in information technology is something Australia needs to be too defensive or worried about. It will provide additional competition for our own IT industry of course, but such competition is inevitable. On the other hand, Asia's continued economic growth and increasing technological sophistication will open up new opportunities for us.

Australia's current economic relationship with Asia is built above all on the happy complementarity between our mineral and agricultural wealth and the industrialisation and development needs of our neighbours.

But this relationship will not sustain us indefinitely. As Asia's economic structures change, we need to develop a new sort of complementarity. Australia must become a service provider for our neighbours' increasingly sophisticated economies. And information in all its dimensions should be at the centre of our relationship.

I'm not starry-eyed about this. Of course Australia's traditional expertise in agriculture and mining and manufacturing will continue to be vital for us. But the development of this new complementarity growing out of services and information will be essential if Australia is to continue to grow as a power by the middle of the 21st century.

But it will be a harder relationship to sustain than one based on minerals or food.

Decisions on whether to educate your children in Australia or Britain, to holiday on the Gold Coast rather than Hawaii, to put your regional headquarters in Australia rather than Singapore, or to seek creative support for a web-site from Sydney rather than Vancouver involve a much more complex range of reasons than cost and assurance of supply.

That is why the way we present ourselves in the world, and the image others have of us, matters so much. And it is why the Hanson debate and its handling have been so damaging.

It is not just our image that is at stake here, but our prospects.

Australia's success, just as much as our neighbours', depends on an open economy, an open region and an open society.

If you were asked to identify the requirements for potential success in the information age you could hardly go past what we have here in Australia - a diverse, technologically mature, scientifically and culturally creative society, with strong legal and administrative structures, and open to the world.

But advantages can be squandered, or their nature can be misunderstood. And we must not let that happen.

Let me repeat a point I made at the beginning. An industry policy for information technology alone will not prepare Australia sufficiently for the coming world.

Many of Australia's best new jobs will come from the IT industry. But they will never be enough. The real advances in jobs in Australia will come indirectly, from the impact a thriving IT industry and an information-educated workforce can have on all our industries from farming to manufacturing to health care.

This will require good public policy and continuous engagement by government - I don't mean in the sense of picking winners, but having ideas and a strategic framework within which local and overseas businesses can operate. To accommodate and provide for a growing IT presence in our whole economy and society.

But above all, developing the information industry does mean developing our people.

We need to keep our children in education and to upgrade constantly the quality of that education, encouraging both the newest forms of technology we can invent and the oldest forms of learning available - the personal inspiration of teachers.

We need to ensure that sections of our population are not left behind in the transformational rush. As I said at the launch of the Broadband Services report in 1995, we have to decide as a country that access to the national information infrastructure will be no less a right than access to water or public transport.

We need to nurture the rich resource of language and cultural understanding which our immigration policy has given us and to understand just how critical a resource this will be for Australia in the 21st century. We must use it for all we are worth as we began doing with our Productive Diversity agenda a few years ago. SAS's own experience in Australia is a powerful example. Nearly half its 100 staff were born outside Australia and they speak 21 languages other than English.

We need to appreciate and sustain the pure research institutions in our universities and to continue to translate these into applied technology through such networks as the Cooperative Research Centres.

We need to recognise the close nexus between our technical and scientific skills as a nation and our creative artists. This was one of the things we tried to do in Creative Nation. We set out there our belief that Australia can be a world leader in the production of content. Ways of encouraging content have to be a central part of any approach to information technology. Content provision on the internet and in other media is one of those aspects of 'soft' power where Australia can excel.

We need to take the message of what Australia is and deliver it confidently to the world to help shape the international environment, because it will be impossible to disentangle that environment from our domestic ambitions. As I discussed earlier, this will be a more complex but more important task than ever before.

In SAS's most recent annual report, Jim Goodnight comments that 'the bottom line is we don't know [what will happen next]. Nobody knows. That's why it is critical that we stay flexible, that we embrace change, that we're prepared to turn on a dime...' I agree with him. And those words are equally true of public policy.

Finally, let me say that I have taken my own advice about the importance of the information revolution. Anyone who is interested in the full text of these remarks will be able to find them tomorrow morning on www.keating.org.au.

I hope you will visit it. Not the flashiest of web-sites, by any means. But full of nutritious content.