WITHER THE AUSTRALIAN INFORMATION TECHNOLOGY INDUSTRIES - A BICENTENNIAL LAMENT,

By Karl Reed, Chair, ACS-SIA

after dinner speech, Building Electronics Conference,
the Project Managers Forum Conference,
New Parliament   House, Canberra ACT March 1988.

Mr Chairman,
Ladies and Gentlemen,
Distinguished Guests.

My purpose here tonight is to attempt to relate a number of issues and threads of ideas and experience back to a single problem. The fundamental problem which I believe we as Australians face today is socio-economic in nature. You'll have to pardon me if I use the hackneyed phrase "restructuring the economy", but I believe that it is our capacity to restructure our economy which is the most serious problem facing Australia today.

I need to stress that my view of REO, for that is what the initials stand for, is a little different from the traditional talking heads who clutter our electronic and printed media with sterile, repetitive and one-sided macro economic and ideological catch-crys demanding that wages be cut, that the Public Sector be privatised or that there should be tertiary fees and a massive budget surplus.

Economic rearrangements of this kind will do nothing to guarantee the development of new and competitive industries, and yet the current political debate and the energies of ministers and departments of state is consumed by this debate, effectively blocking public consideration of more serious issues.

I want instead to take a nationalistic stand, to argue that the restructuring of our economy can be measured against simple criteria - the extent to which we have succeeded in initiating a shift of economic resources from traditional economic sectors to new industries with significant international potential and, at the same time, maintain or increase Australian ownership and control of the economy.

In addition, we must use these resources to promote embryonic industries arising out of the needs created by other developments.

I have entitled my talk "Wither the Australian Information Industries - A Bicentennial Lament", a theme I chose for a column in Computer World. I wrote the column on the 28th of January after witnessing the demonstration by the Kooris, the tribal name which they whom we would not name choose for themselves.

I was struck by two contradictory thoughts. Firstly, the Kooris, with determination and dignity, were turning our celebration of what was for them a massive trauma into a year long event which would gradually make them the focus our attention. on them. Secondly, it occurred to me that the Bicentennial was an empty gesture, a giant party, a great commercial success which we should run next year for the sake of the tourist industry - a grand show, proof that, contrary to the words of the Bond advertising jingle, we can always beat the world's best, especially when it comes to throwing a party.

However, it has no real substance. There was nothing in it in that would cause those occupying this continent 2088 to recall 1988 as a year in which the nation bequeathed anything of significance to future generations except for perhaps this building, and a few roads.

Come to think of it - It hadn't occurred to me that we had already celebrated a centenary, and which is understandable when you examine the contemporary reports.

The contrast between the Kooris, turning the celebration of the invasion of their country into a process by which we white, multi-cultural Australians with an egalitarian

tradition which made us international pioneers in raising the quality of life, are made aware of their separateness, their specific and different problems and the part we might play in their future, to deal with the empty nature of the celebrations eventually produced a column for Computer World.

The Column, in a moderately humorous style, wove the emptiness of the Bicentennial together with some throw away remarks on a number of unrelated matters, using threads from the reality of the Kooris articulation of the Bicentennial celebration and the eternal problems facing indigenous industries into what some readers regarded as interesting.

It argued that we had missed an opportunity to use the Bicentenary as the year of the promotion of Australian industry, leaving a real legacy for the future.

The need for Bicentennial economic projects of the kind which I have merely hinted at is, in my view, reasonably clear. I want to step back from this now, and attempt to analyze the impact of public policy on one particular industry.

I also want, very carefully and soberly, to offer a critique of aspects of the information industry strategy adopted by this Government, and suggest that there were much better options available.

However, I feel that the Bicentennial farce is merely a symptom of a more serious malaise. It seems to me that those who we feel obliged to admire as our leaders and as the arbiters and determinants of our national ethos are devoid of national pride. We seem to be suffering from a national paralysis which is preventing us from acting in

our own right to determine our own destiny. We seem unable to enunciate notional projects on any scale unless they are proposed or supported by some outside economic interest.

It seems to be beyond our ability to identify and promote new technologies and industries.

In other words, we are unable to set our own national agenda, and allow our perception of the interests of other countries to determine the scope of initiatives and policies.

Indeed, we are a signatory to OECD treaties which specifically require that we do not differentiate on the basis of national origin in industry promotion policy.

We have been able to promote the Very Fast Train and the Space Port, but only with the encouragement of overseas interests.

We do a poor job of nurturing existing resources, of maintaining the momentum of teams, and I wonder what will become of David Chandler's team which has managed and built this incredible structure, in the years to come.

I said that I want to argue that we are failing to cause a diversion of economic activity into the new technologically based industries. And I must argue this because the very substantial steps taken by this Government to increase the amount of information technology industrial activity are not guaranteed to lead to the development of Australian-owned information technology transnationals, a goal we must meet if we are to avoid becoming David Hartley's white trash of Asia.

I think I can do this best by giving you a quick description of the Australian Software industry.

A PROFILE OF THE

AUSTRALIAN SOFTWARE

INDUSTRY[1]

by Karl Reed,MSc,FACS

Joint President, Software and Services Industries Federation of Australia

National Chairman, ACS-Software Industry Association

Senior Lecturer, Dept. Computer Science, R.M.I.T.

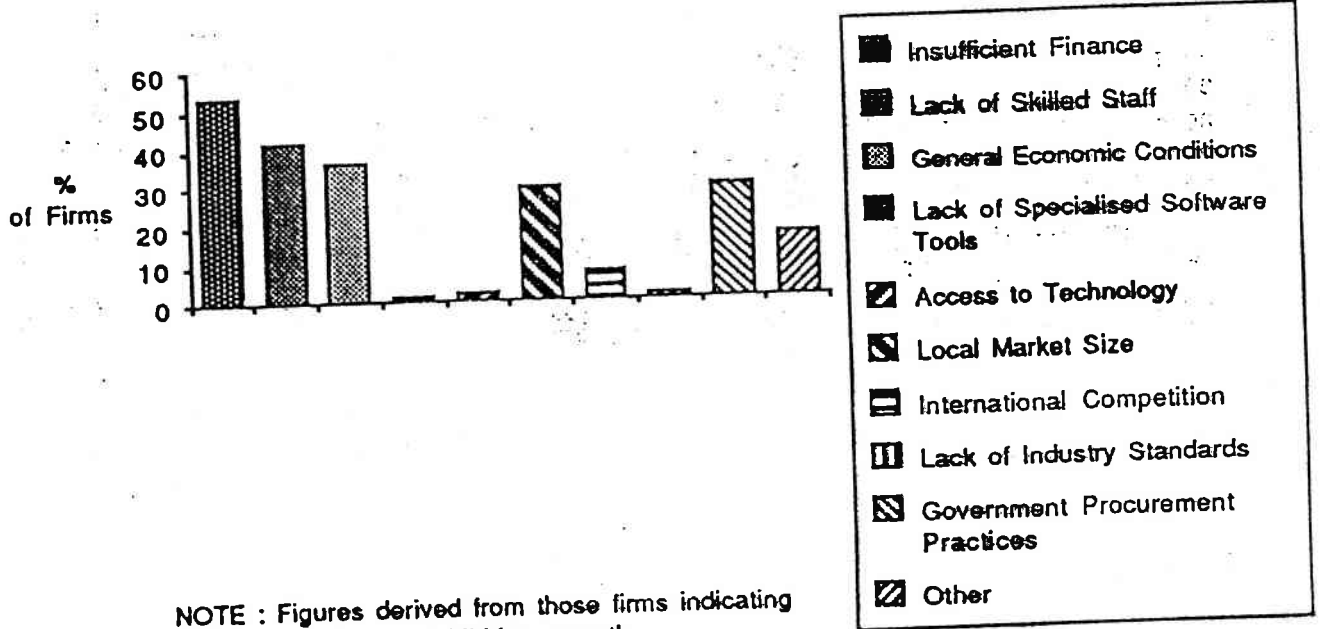Consulting Editor, Computer World

---

[1] Figures based on ACS/SIA, DITAC, IDC and JISA surveys

1. HISTORY AND CHARACTERISTICS

- FIRST SOFTWARE AND SERVICES PROVIDED
  BY UNIVERSITIES WITH AUSTRALIAN MADE
  COMPUTERS IN MID 1950's.

- CONSULTING AND PROGRAMMING SERVICES
  PROVIDED BY ACCOUNTANTS AND
  BY COMPUTER SUPPLIERS.

- FIRST SOFTWARE COMPANIES
  PROVIDING SERVICES

  FORMED AROUND 1961

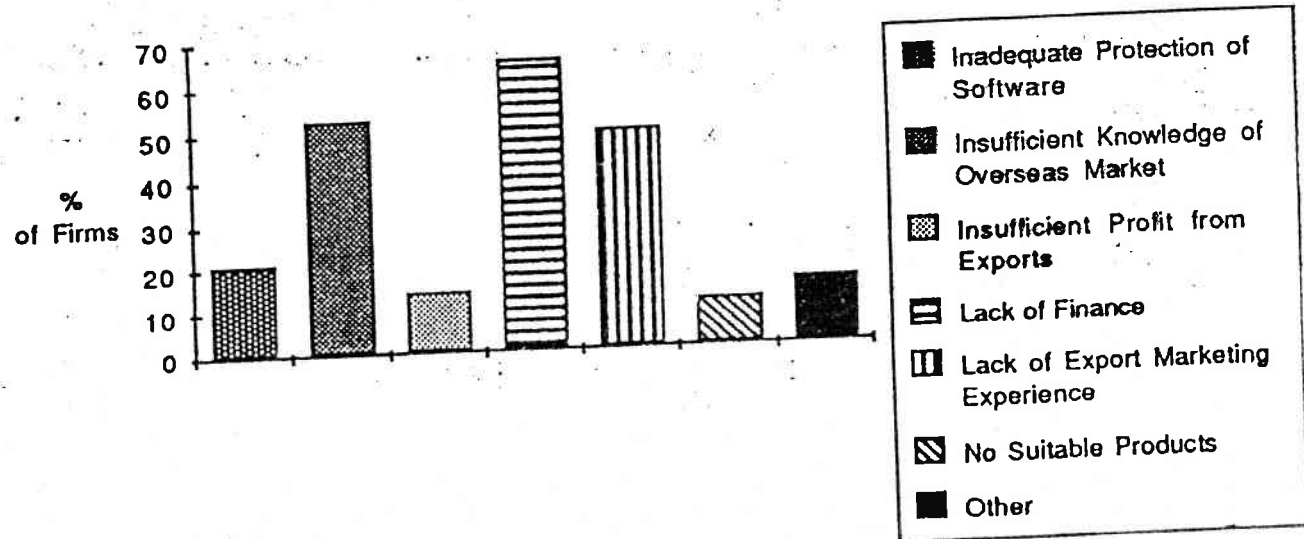 (OLDEST KING-SMITH AND ASSOCIATES).

FACTORS AFFECTING GROWTH AND ABILITY TO EXPORT

MAIN FACTORS AFFECTING GROWTH

Legend:
- Insufficient Finance
- Lack of Skilled Staff
- General Economic Conditions
- Lack of Specialised Software Tools
- Access to Technology
- Local Market Size
- International Competition
- Lack of Industry Standards
- Government Procurement Practices
- Other

NOTE : Figures derived from those firms indicating factors inhibiting growth.

FACTORS AFFECTING ABILITY TO EXPORT

Legend:
- Inadequate Protection of Software
- Insufficient Knowledge of Overseas Market
- Insufficient Profit from Exports
- Lack of Finance
- Lack of Export Marketing Experience
- No Suitable Products
- Other

NOTE : Figures derived from those firms indicating factors limiting ability to export.

JAPAN AND AUSTRALIA
INDUSTRY COMPARISON

ITEM	JAPAN (1985) VALUE	AUSTRALIA (1986)
TOTAL TURNOVER	Y1.56T (A$15.6B)	Y71.7B (A$717M)
STAFF	162,010	
COMPANIES	1,800	1,100
SOFTWARE PRODUCT		
-MARKET	Y43B (A$430M)	$374M
-EXPORTS	-	$80M
-LOCAL PRODUCTION	Y8B (A$80M)	$180M
R&D EXPENDITURE	-	$86M
NO COMPANIES EXPORTING	-	-

MAJOR TECHNICAL DEVELOPMENTS

BY AUSTRALIAN SOFTWARE TECHNOLOGISTS

- FIRST COBOL COMPILER FOR DEC PDP/11
  (COMPUTER POWER, 1969)

- FIRST TRANSFER OF UNIX FROM PDP/11 TO
  OTHER COMPUTERS

- DEVELOPMENT OF OS JCL REPLACEMENT
  (JOL) 1970

- SCREEN BASED APPLICATIONS GENERATORS
  (1974)
  (TODAY AND ACEGEN)

- UNIX COBOL COMPILER (1985)

- ONLINE HORSE-RACING SYSTEMS WITH
  HIGH RELIABILITY

- LARGE SCALE SYSTEMS FOR INSURANCE
  INDUSTRY

GEORGRAPHIC DISTRIBUTION

STATE	% OF COMPANIES	
	1982	1986
NSW	45.9	37.8
VIC	32.1	27.8
WA	6.8	7.5
QLD	5.6	11.0
ACT	4.2	4.7
SA	4.2	10.9
TAS	1.2	0.3

DISTRIBUTION OF COMPANY SIZES

NO. OF EMPLOYEES	PERCENTAGE OF COMPANIES	
	1982	1986*
< = 5	53%	37%
5 - 10	21%	21%
10 - 25	15%	20%
25 - 50	6%	10%
50 - 100	3%	8%
100<	2%	4%

*   Estimates based on DITAC Survey

You can see that the software industry has very substantial potential as a major economic force in the economy.

All it needs is access to investment capital, R & D funding, access to Government and domestic markets, assistance in export markets and an adequate supply of trained personnel.

These, by the way, are needed by any new industry and constitute a requirement for the diversion of economic resources to new economic sectors. Included in these economic resources are access Government agencies and departments.

The Australian Computer Society's Software Industry Association raised these issues about ten years ago. We argued for direct intervention to promote the industry, and

The tale of our many battles would fill a book.

We argued that Government is running a business. That business is the economy. It will, like any business manager, have specific objectives and must adjust the allocation of resources accordingly.

We also drew attention to the fact that past Governments had intervened directly in the economy, despite protestations to the contrary.

We likened the massive expenditure by some states on power stations to the cargo cults of Papua New Guinea, and urged the Tasmanian Government to build a computer industry rather than the Franklin Dam. $500 million would have gone a long way in this direction.

There were, along the way, massive shifts in Government policy. How much of these changes are due to our efforts is difficult to determine, but the 150% tax incentive for R & D, the National Procurement Development programme, the increased funds for information industry education, the extension of the industrial research and development grants scheme, all constituted significant improvements, and are currently delivering around A$100M pa directly and indirectly to the IT industries.

There is one problem, however.

These benefits are available to any <u>Australian</u> company, that is, to any company incorporated in <u>Australia</u>.

The result is that companies such as Ericssons, Fujitus, NEC, IBM, DEC, ICL, Nixdorf and Honeywell, all of whom receive various forms of assistance in their home countries, are eligible for Australian Government support under these programmes.

The Software industry had also identified another programme capable of delivering significant benefits to the Australian indigenous industries.

This was the Australian Industries Assistance of offsets programme which obliges foreign companies selling to Australian Government to undertake activities valued at 30% of the contract price in Australia.

We began a campaign to force these funds to be used to directly assist the indigenous industries.

Our goal was that this 30% be spent to either promote the development of new product for export or export existing product. We studied the patterns of offsets and found that great opportunities were being missed.

Indeed, successive Governments failed to differentiate between activity undertaken in Australian by the offsetter, if you like, and activity which was sub-contracted.

There were no real teeth in the programme - agreements were unenforceable, and one or two companies had unfulfilled obligations amounting to hundreds of millions of dollars.

Very substantial opportunities were lost to the indigenous industry. Perhaps the most extreme example is one in which Wang received an offset for establishing a factory to produce A$70M worth of computer terminals. what the industry required was that an Australian company should receive a contract from Wang for the production of the terminals, allowing the establishment of a new industry.

The attitude of the multinationals was that wherever possible, offset obligations should be met in-house, or by gifts of equipment to educational institutions.

The ACS-SIA fought these attitudes, and, following the Ingles Inquiry into the offsets in 1985, there was an improvement in performance, and in Government assistance to the industry.

However, the guidelines adopted by DITAC explicitly included as eligible, activity undertaken in Australia by the company with the offset obligation.

The ACS-SIA had great hopes for the offset programme. We looked at the shortage of packaged software in Japan, and the general shortage of English language software on Japanese hardware, and conceived the strategy of "through marketing", in which Australian companies would provide software for Japanese computers.

We looked at the general need for packaged software and new product on most machines and asked for preference - and multipliers - for deals which gave an indigenous company a large payment as an advance on royalties on sales, or for a development contract funded through advance payment of royalties.

We sought deals that would force the multinationals to build markets for our products rather than simply commission us to build products that could lock us out of future markets.

We objected to the explicit inclusion of "in-house" activity in the multiplier concept on the ground that the multipliers were designed to divert activity to the indigenous industry.

As I said, we were having some success, and then the Government changed the rules.

THE PARTNERSHIP PROGRAMME

Senator Button's department introduced a new concept, designed to rapidly reduce the deficit in our balance of payments.

The idea was very simple, and was ~~designed~~ intended in part to overcome the resistance that the multinationals showed towards a more vigorous offset programme.

The Government would exempt a multinational from the offset programme IF it would export from Australia, and undertake R & D here as well. Specifically:

. companies must agree to commit five percent of the Australian turnover to R & D

. and to achieve a 50 percent export/import ration within 7 years

. activities undertaken in Australia by the partner would be eligible when assessing compliance.

In return for this, the Government will:

. exempt the partner from the offsets programme

. and not discriminate against partners in Government procurement policy.

In addition to this, the Government, as part of the Information Industries Strategy promised to:

. substantially increase the number of Undergraduate places available for IT industries

. target software as a major export activity ($100M by 1992)

. expand export promotion activity by AUSTRADE

. introduce the National Procurement Development Programme to enable new product development and trailing

. maintain the IRD Scheme for information technology.

The Government produced this total strategy against the background of information industry imports which had grown from $1.3B in 1980-81 to $3.4B in 1985-86, and which would, if the same rate applied, exceed $9B by 1992.

Total exports on the other hand, were estimated at $800M in 1986/87, and were projected to rise to $1.8B by 1992/93. In other words, the Government saw a method of reducing the projected balance of trade by some $4.0B by 1992/93 without significant outlay, and without having to interfere in the economy.

The scheme would, it was hoped lead to a substantial increase in IT R & D in Australia, and make Australia the IT centre of the Pacific region. In the process what had been a difficult and unpopular policy option - the offsets programme, would have been eliminated.

The cost, providing additional tertiary places, and eliminating preferences for Australian ownership in Government purchasing, seemed to be justified against the alternatives.

Before I explain, as I said before, in a suitably sober manner, my concerns with this policy, let me briefly sketch the alternatives.

The alternative was - to make the necessary commitment of Government funds and programmes to ensure that the indigenous firms grew, and became real powers in their own right.

In particular, nobody within Government seems to have asked the question - What could we have done to maintain the rates of growth in exports achieved to date?

Let's just explore the export growth of the software industries for just a moment.

⟶ slide

The table shown give two extreme scenario's and a more moderate one. In any case, the software industry could, given appropriate assistance, achieve about $620M pa in exports by 1993, given that the current momentum was maintained. The prospect of Achieving $4.7B in exports, however unlikely, was at least worthy of further investigation, since the ~~prospect~~ possibility exists of an export industry with a turnover of $2-3B by the mid 1990's.

What the Government did instead was to make our export growth dependent on the commercial needs of the multinationals.

A CRITIQUE OF THE PARTNERSHIP PROGRAMME

Before I offer my criticisms of the Partnership Programme I should make my position very clear.

Fourteen years of study of industry development have convinced me that new technologies do not always arise unbidden throughout the world, and even those that do benefit from direct and indirect Government support of a king that rivals agricultural policy even in countries like the USA.

Certainly, Japan and Sweden are unashamedly interventionist - and successful as well.

This leads me to the inescapable conclusion that we compete with Governments, not in some international free market.

The software industry of Japan, Europe, the UK and North America is the recipient of vast support not available to our industry.

So, I am not swayed by arguments about global economic efficiencies, free markets and market forces. I also want to see Australian high tech companies the size of PRIME and CDC by the mid 1990's.

My objections to the Partnership for Development programme stem from:

. the potential for emasculating the indigenous software industry, through acquisitions and competition

. the lack of direct commitment to the indigenous industries

. the opening of the most important of <u>our</u> markets to our competitors

. making the commercial future of small Australian companies dependent entirely on the strategic interests of large multinationals

. and above all, the manner in which it conceded programmes of immense value to the indigenous industry to the multinationals in return for their coming here to compete more directly for domestic and international markets. You see, I would argue that industry assistance measures should be available only to indigenous companies.

Our objections to the Partnership Programme have been countered by Senator Button and his Department.

It is argued that the multinationals cannot possible meet their obligations without recruiting the indigenous industry. I'm not convinced.

Some companies will choose to meet their obligations entirely in house, some, perhaps the smaller ones, will have little choice.

Against this, UNISYS, DEC, PRIME and Tandem have shown no real tendency to farm out their obligations. Neither PRIME nor Tandem are true giants, but UNISYS and DEC are. Still I could be wrong.

My concerns that multinationals may solve their problems by acquisition have not been satisfactorily answered.

However, the fundamental argument used to rebut my protests is that the Government is not in the business of either differentiating between locally and foreign owned firms in its programmes or in the business of promoting the software industry through additional budget commitments.

SSIFA's concern remains. However, we must, while opposing a policy such as this, try, once again, to tilt the playing field a little in our direction.

We have asked the Government to approve only those proposals which provide a direct commercial benefit of an on-going kind. In particular, advance purchases of licenses as a means of funding new product development, and export commitments in the form of advance payments of royalties, with a threshold figure large enough for the multinational to have to recover the costs - by sellng our product.

We have asked that R & D be subcontracted, with both parties sharing the intellectual property.

We have also asked that the industry support programmes for which we have fought be available only to Australian owned companies.

We have asked, in addition, that the Partners pay a levy to the Government to fund an expansion of the work necessary to identify suitable commercial proposals of genuine mutual benefit.

Our preferred option, however, was an offset programme with teeth, coupled with the creation of a venture capital industry capable of allowing us to make our commercial decisions on our own judgement - for this is what the Partnership Programme means. will prevent.

Before I complete my lament, let me spell out the benefits that the programme gives to a multinational.

Company X can receive the 150% tax break for that part of a project not covered by an IRD grant. The project could be funded partly by an MIC, and could lead to a product which will be eligible for preferences under Government purchasing policy and export promotion, and which could compete with an existing indigenous product.

Company X will also be exempted from offset obligations it would otherwise incur.

In this regard, the 4GL which PRIME are building, a product we could easily have undertaken, is an excellent example.

So far I have spoken about the impact of the Australian lack of vision on a new industry. I want to make it clear that the problem is not simply one of this Government, it is one of a lack of vision on all our parts, of the impact of the cultural cringe and the economic structure bequeathed to us at Federation. In that sense, our Governments reflect the views of our captains of industries who have no incentive to and see no economic benefit in promoting new industries.

They will borrow billions from overseas to trade positions on each others boards, and even, as BHP did years ago, to buy UTAH from GE, to fund GEs information industry push - but they will not without Government intervention and incentives, develop new industries such as ours.

The economy's manager must take steps to persuade the Bond's, Packer's, Coton's and Elliot's of this world to stop increasing our foreign debt and actually do something for this country.

A great deal is said about Australia's lack of commitment to excellence, and our inability to reach beyond the mediocre, whether it be in policy or in industry.

I have been critical of our failure to promote, as the Japanese, the Swedes, and the Europeans do, national initiatives and projects. I'd be unfair if I failed to acknowledge the Snowy Mountains Authority, the Sydney Harbour Bridge, the Opera House and so on.

I would also be overstating the seriousness of the situation if I did not acknowledge the massive effort of Project Management, team work and construction achieved by the Joint Venture. The reality is that Australians can and do do extremely well in a wide range of areas of industry and technology.

So, there is no doubt about our capacity to conceive and execute massive projects, something that surprises the Japanese, who see us as a bunch of uncommitted, easy going slackers. The complexity of this project, complete with its services, its environment, the requirements for specialist trade skills and above all for Project Management proves that we can, in Australia, tackle massive projects.

And yet, the Parliament House project itself raises, in another way, the very problem that I have been addressing - the extent of our national and political will to exploit our own skills, our resources and our own opportunities for our own benefit.

The project is now complete, and I wonder what will happen to the corporate knowledge base that the project team has constructed over the past years.

Is there some other project, here or overseas that the PHCA can turn to, allowing the continuity of experience of large-scale project management to be maintained and nurtured for our national good - as well as the good of the individuals?

Will some effort be made to ensure that the skills in stone masonry and other trades which were so difficult to find are passed on to new hands? Other countries, notable Sweden, would do so!

And will we learn from the experience of the development of intelligent building control systems which are the theme of this conference, and develop a new, information technology industry sector as a result?

It is worth asking a rhetorical question as to why the development of the building control system and the office automation systems were not made national projects to be undertaken by Australian companies in a way that would lead to new products for the international market?

The extent of the building control system is apparent from papers presented at this conference, however, we are again facing a potential loss of initiative to the Japanese. Parliament House has become a display for Australian

technology as well as Australian workmanship, but this was not a primary goal, simply the result of the excellent work undertaken by Torrens in this regard. We have now an opportunity to develop a new industry, and instead, the task will be left to a small company who will receive many exhortations to excellence, but little direct help.

Before I conclude, let me briefly warn you of the attitude of the Japanese towards Australians. The Japanese, and I deal with people who have some input to and reflect the consensus process, regard Australians as a people neglecting an opportunity. "Why do you need a Joint Venture with me?", asked the Kansei businessman, "You only need $10M to enter the Japanese market".

"How come there is no canal flooding central Australia?", asked the newspaper editor? And on, and on.

The correctness of the Japanese perception of our lack of notional will can be seen from the reaction to their proposal for a multifunction polis, a high-tech city which would provide space and access to our highly trained information technologists as well as giving the Japanese a determining influence of all our future technology.

It is to be seen from the fact that the VFT project required - and obtained - Japanese commercial support for its credibility - and I could go on. It can be seen from the fact that we cannot even decide to accelerate the growth of the software industry directly, that their view is justified.

I began my speech with reference to the Kooris, the native Australians, and the manner in which they were succeeding in using the Bicentennial as a vehicle for raising their problems and issues.

I am struck in this regard by the fact that they have their own minister and a Government department in recognition of their separateness and their needs. We acknowledge that they are different and that their problems need different solutions.

I cannot help but wonder if that other group of oppressed Australians, the indigenous high technologists, might benefit from similar treatment, and might be more successful if there was a minister for Australian-owned industry?

What we need now is for the remainder of the Bicentennial year to be dedicated to the promotion of Australian owned industry.

What we also need now is Government policies that will give us somewhere to stand when we deal with international markets, and with the multinationals.

What we need is recognition that we compete with Governments and are not in some text free market global economy.

What we need now is government policies which will support the small Australian company which says "I've got a good product - Why should I enter a joint venture to market it overseas? All I need is the venture capital".

Any doubts, ladies and gentlemen, that we can compete given the resources, should be dispelled by those judging the achievement of PHCA and the CHJV, and this magnificent Parliament House.

Thank you.