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Industry-Government Collaboration : Queensland's IT&T Strategy and the Information Industries Board

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Abstract:

This paper presents a field study of the Queensland Information Technology and Telecommunications Industry Strategy (QITIS), and of the Information Industries Board (IIB), a joint industry-state government body established in 1992 to oversee the implementation of that strategy for the development of the IT&T Industry in Queensland.

The aim of the study was to analyse differing stakeholder perspectives on the strategy and on its implementation by the IIB.

The study forms part of a longer-term review which aims to develop methodologies for the selection of appropriate strategies for the IT&T Industry, and for the evaluation of outcomes of strategy choices.

Background To The Study

The Information Technology and Telecommunications (IT&T) Industry, both in Australia and world-wide, has experienced substantial growth in recent years, particularly since the "convergence" of the two technologies to create global computer-communications networks.

The Information Technology and Telecommunications industry is defined in Queensland as comprising four sectors: Computer and Communications Hardware; Computer and Communications Software; Computer Services; Telecommunications Products and Services [DBIRD, 1991].

Governments and the Industry have recognised the need to plan strategically for the development of the industry and its impact on society.

In 1992 the Queensland Government endorsed the first Queensland Information Technology Industry Strategic Plan, the product of a collaborative effort by industry, government and academic representatives, and established the Information Industries Board (IIB) to oversee implementation of the Plan.

The role of the IIB complements that of the Information Policy Board (IPB). The IPB was established in 1991 following the Queensland Government's internal IT review to co-ordinate the development and application of Information Technology within Government. The creation of these 'twin' peak bodies was both a sign of the priority assigned by the Queensland Government to this strategically important industry, and an indication that the industry itself in Queensland had recognised the wisdom of a collaborative approach to the development of the industry. It also demonstrated that the industry had attained the maturity to commit itself to an integrated strategy.

This achievement (the creation of the IPB and the IIB) was in 1992, and still is, unique in Australia and to the best of our knowledge in the world.

The establishment of the IIB was the first step in the implementation of the Queensland IT&T Industry Strategic Plan. The IIB was charged with

'... the development of the information technology industry in Queensland, its products and services, and the implementation, evaluation and annual review of this Queensland Information Technology Industry Strategic Plan.' [DBIRD, 1991:28]

The major strategies of the Queensland Information Technology Industry Strategy were :

- M1) The establishment of the IIB;
- M2) The creation of wealth for Queensland through the development of IT exports;
- M3) The attraction of transnational information technology organisations to Queensland;
- M4) The development of an Information Services Network (ISN) to supply information and value added services to individuals and organisations throughout Queensland;
- M5) The enhancement of the competitiveness of Queensland's industries via the exploitation of appropriate information technology.

These major strategies were augmented by ten supporting strategies.

- S1) Encouragement of Government and industry to outsource IT
- S2) Encouragement and stimulation of the IT industry to export
- S3) Improvement of managerial competence within the IT sector
- S4) Attraction of seed, venture, mezzanine and export finance
- S5) Establishment and support of IT precincts
- S6) Encouragement of increased adoption of open systems
- S7) Reinforcement of the quality approach to productivity
- S8) Creation of appropriate new R&D facilities in IT precincts
- S9) Provision of an adequate supply of qualified IT people
- S10) Fostering of an IT culture within Queensland community

The eleven member Board of the IIB consists of seven industry and four government representatives. The Board was chaired by a senior industry executive until December 1994, when in order to strengthen the linkage between the IIB and the IPB, that position was assumed by the Chairman of the Information Policy Board (IPB). The Information Policy Board, the internal advisory body on IT matters of the Queensland government, was created with a mandate to co-ordinate information management in Queensland Government. Dr. Ian Reinecke, the IPB Chairman at the time, had been a key player in the IT industry nationally in Australia for many years and was instrumental in the development of watershed IT papers including "Networking Australia's Future" the report of the Broadband Services Expert Group [AGBSEG, 1994].

The IIB Board is supported by (1) an Executive Director who is a Board member, (2) a team of professional staff, some seconded from the state Department of Business, Industry and Regional Development (DBIRD was the state government department responsible for industry development), and (3) several contract employees. The Board meets monthly in the discharge of its responsibilities and individual Board members work closely with IIB staff on project related issues. The IIB was structured as part of DBIRD to ensure access to necessary resources and to facilitate the co-ordination of services with the IT&T industry.

The IIB was operationally structured into five program Portfolio areas which report to the Executive Director:

- 1) **Support Services Portfolio**, encompassing state liaison with the National Industry Extension Service (NIES), IIB-wide projects, Board Services (Board support, Resource Centre, InfoTech Newsletter, Financial Management) and Client Services (Industry Associations, general client information, DBIRD liaison, Ministerials);
- 2) **Communications and Convergence Portfolio**, covering telecommunications issues (industry development, exports, opportunities and projects) and convergence issues (multimedia, pay TV, opportunities and projects);
- 3) **Opportunities Portfolio**, dealing with investment attraction, projects and marketing material;
- 4) **Markets Portfolio**, encompassing export advice, export projects and Partnerships for Development; and
- 5) **Enabling Portfolio**, covering IT&T enabling research and projects with non-IT&T industry sectors.

As of 1996, the IIB had been in operation for just over three years. During 1994 and 1995 several reviews of the IIB's operations and direction were carried out. Two key reviews conducted were reported in the IIB Review Report [2i Corporation, 1994] and the CEO Forum Report [Coopers &

Lybrand, 1995]. The overall outcome of these reviews was positive, resulting in government approval of further funding through 1998.

The reviews however highlighted several areas of divergence of views on the role and activities of the IIB. The IIB Review report, for example, states [2i Corporation, 1994:26]

"Few of those surveyed had a broad understanding of the role and key strategies of the IIB ... Most have a very limited understanding of what the IIB is trying to achieve. The individual views [represented] were quite narrow, and tended to relate to each company's own interests, experiences and preconceptions."

A comment reported in the CEO Forum report [Coopers & Lybrand, 1995:5] suggested that

"The IIB is not run by industry, so is therefore not in touch with the IT&T industry."

In summary, the two reports highlighted instances of:

- (1) stakeholders demonstrating incomplete knowledge of the strategy and the IIB;
- (2) misunderstanding of the strategy and the IIB's role with respect to its implementation; and
- (3) conflict of interest inherent in the strategy (and therefore in the activities of the IIB).

As well as the two aforementioned reports which instigated this review, other relevant publications were reviewed during the study. These included the original Queensland IT Industry Strategy document [DBIRD, 1991] and several reports which had contributed to the development of that strategy [AIIA, 1991; Carroll et al, 1988; Coopers & Lybrand, 1990], recent Federal and other Australian State Government reports relating to IT Industry policy and strategy [AGBSEG, 1994; AGITRG, 1995; IIA, 1994; Premier's Task Force South Australia, 1994], and various related overseas reports and journal articles [Corey, 1991; Gurbaxani et al, 1991; Gurbaxani et al, 1994; Land, 1990; Tanabe, 1994].

The Study Approach

The study was carried out during the first half of 1995. Approval was sought and gained from the Executive Director of the IIB.

The major objective of the study was to clarify the role of the IIB and identify perspectives on that role. Various perceptions of the role and activities of the IIB, which existed in the community at large were identified and analysed with particular emphasis on the views of the IT community.

One way to analyse perspectives would be to catalogue the different views of the stakeholder and interest groups. For example the Australian Information Industries Association (AIIA), the 'voice of the industry', would be expected to hold a view representative of the interests of its members. Yet, the recent formation of the IIG (the Indigenous Information Industries Group) in the southern Australian states may suggest otherwise. The IIG maintains that within the AIIA, local firms are overshadowed by large transnational interests.

Government views are also of interest. It was refreshing to hear a comment from a senior Government executive indicating that "I'm not convinced it's management we need, but entrepreneurs". Would this perspective be representative of Government as a whole?

Given that the IIB was "born of" the Queensland IT Industry Strategy, the interview questionnaire was formulated around the Major and Supporting strategies and the initial schedule of tasks for the IIB as detailed in the Strategy document. Interviewees were selected from the South-East Queensland region (over 80% of the population of Queensland and related IT activity is concentrated in the South-East region).

Representation was sought from 6 target stakeholder groups: (1) Government (policymakers and largest user), (2) IT&T industry, (3) non-IT&T industry (users), (4) IT&T profession, (5) academe (IT&T and Business) and (6) the legal profession (users, legal issues). Follow-up calls were made to prospective interviewees within a week of their receipt of the contact letter. In most cases appointments were made on the first call. All prospective interviewees but one accepted the invitation

to participate, thereby yielding satisfactory coverage of the target groups. Table 1 lists the stakeholders interviewed.

Table 1 - Stakeholders Surveyed

Stakeholder Group/Organisation	Count	Position	Stakeholder Group/Organisation	Count	Position
(1) GOVERNMENT:			(3) IT PROFESSION:		
Information Industries Board	2	Board Member	Australian Computer Society	1	Branch Chairman
Information Industries Board	5	Staff/Consultants	Other IT Profession	1	QTIG Representative
Clients of the IIB	3	CEOs	(4) NON-IT INDUSTRY:		
Information Policy Board	1	Executive Director	Other Industry non-IT	2	Directors with IT Role
Other Government	1	Deputy CEO	(5) ACADEME:		
(2) IT INDUSTRY:			Academic IT	1	IT Professor
Australian Info Industries Assoc.	1	Branch Chairman	Academic non-IT	1	Senior Lecturer Policy
Other IT Industry	4	CEOs	(6) LEGAL PROFESSION:		
			Legal Practitioner	1	IT legal specialist
TOTAL:				24	

Study Findings

The study data was analysed to identify salient alternative perspectives and to surface instances and prevalence of conflicting views, lack of knowledge or misunderstanding. Respondents were requested to reply firstly in terms of the value of the QITIS strategies to their own organisation ("SELF" in Tables 2 and 3) and then to step back and indicate their perceptions of the value of the same strategies to the Queensland IT&T industry as a whole ("INDUSTRY" in Tables 2 and 3). Counts, averages and comparisons of responses to the questions relating to the strategies and IIB tasks from the QITIS document are revealing.

Employing the equivalent of a 5-point scale, where 1 is negative and 5 is positive, respondents were first asked to score each of the QITIS major strategies. Table 2 indicates respondent mean scores, ranks based on mean scores, and the significance of differences observed between respondent scores for themselves versus their scores for the industry.

Table 2 - Major Strategies

			SELF			INDUSTRY			SELF vs INDUSTRY	
Major Strategy			Mean	Rank	N	Mean	Rank	N	@	N
Creation of the IIB	M1		4.09	1	23	4.43	2	23	0.042	22
Development of Export Markets	M2		3.65	4	23	4.52	1	23	0.000	22
Attraction of Transnationals	M3		3.70	3	23	3.95	4	22	0.358	21
Develop Information Services Network	M4		3.61	5	18	3.45	5	20	0.543	17
Enhance Industry competitiveness via IT	M5		3.87	2	23	4.27	3	22	0.149	21
rtt			0.79			0.70				

rtt - Chronbach's alpha reliability coefficient

@ - two tailed probability from paired T-tests

It is interesting to note that respondents score four of the five major strategies as being more important for the industry than for themselves. The only strategy they score higher for themselves than for the industry (marginally higher .. in fact very similar) is M4 - Develop Information Services Network, which they also rank least important of the five for both themselves and the industry.

Respondent views on the relative value of the main strategies, for themselves versus for the industry generally, clearly differ most significantly on M2 - Development of Export Markets. Respondents rank this strategy most important of the five for the industry, but only 4th most important for themselves. It would appear that while respondents appreciate the value and importance of exporting for the industry, few see themselves doing it.

Respondents also score M1 - Creation of the IIB, significantly more important for the industry than for themselves, yet they rank this strategy higher for themselves than for industry. This may suggest some ambiguity surrounding M1, which the authors feel is perhaps inappropriately included as a strategy in the list, as it is prerequisite to implementation of the other strategies.

Tables 2 and 3 include reliability scores for the stakeholder responses. The good reliability scores observed suggest reasonably consistent patterns of response. This may indicate that respondents have a reasonable or at least consistent understanding of the strategies. It is observed that the exclusion of M1 from the reliability analysis results in some improvement in the reliability score for the major strategies, thereby further evidencing the inappropriateness of this item in the list.

Table 3 indicates respondent mean scores, ranks based on mean scores, and the significance of differences observed for the 10 Supporting Strategies. Again we observe respondents scoring the supporting strategies as being generally more important for the industry than for themselves. Six out of the ten are scored higher for industry, four being significantly higher and four being scored nearly equal.

First looking at ranks, respondents rank S10, S9, S2, S7 and S3 in the top five strategies for themselves. They rank all of these but S7 in the top 5 for industry as well. Additionally, respondents rank S1, S4 and S8 in the top 5 for industry (more than 5 in the top 5 for INDUSTRY due to ties) yet rank these 7th, 9th and 6th respectively for themselves. It is further observed that S1 and S4 are statistically significantly different at the .05 level.

Table 3 - Supporting Strategies

		Self			INDUSTRY			Self vs INDUSTRY	
Supporting Strategy		Mean	Rank	N	Mean	Rank	N	@	N
Encouragement of Government and industry to outsource IT	S1	3.54	7	24	4.26	2	23	0.003	23
Encouragement and stimulation of the IT industry to export	S2	3.83	3	24	4.43	1	23	0.004	23
Improvement of managerial competence within the IT sector	S3	3.70	5	23	4.17	4	23	0.008	22
Attraction of seed, venture, mezzanine and export finance	S4	3.41	9	22	4.22	3	23	0.006	21
Establishment and support of IT precincts	S5	3.27	10	23	3.43	7	23	0.110	22
Encouragement of increased adoption of open systems	S6	3.45	8	23	3.43	7	21	0.605	21
Reinforcement of the quality approach to productivity	S7	3.75	4	23	3.65	6	23	1.000	22
Creation of appropriate new R&D facilities in IT precincts	S8	3.68	6	24	3.83	5	23	0.090	23
Provision of an adequate supply of qualified IT people	S9	4.18	2	24	4.17	4	23	0.451	23
Fostering of an IT culture within Queensland community	S10	4.21	1	24	4.22	3	23	0.747	23
rtt		0.81			22			0.78	21

@ - two tailed probability from paired T-tests.

The strategies which did not rate highly were relatively consistent in their low scoring from both perspectives and not surprisingly also scored poorly in the IIB performance ratings (Table 4 following). These were the ISN (M4), IT precincts (S5) and support for Open Systems (S6). The spread of responses on these items may be indicative of a lack of understanding or disparity in responses across the various stakeholder groups.

An important observation from Table 3 is the significant difference in the perceived value of such key strategies as Outsourcing (S1), Export development (S2), Managerial competence (S3) and the attraction of appropriate finance (S4) for respondents themselves versus for the industry (all significantly different at the .05 level). One interpretation suggested for this was the attitude that "yes, I realise it's important for the industry but I don't need it" (perhaps because 'I'm big enough and have enough resources to look after myself', or 'I'm content and comfortable here in my own little cabbage-patch and I don't want any extra challenges just now', etc).

These figures are reminiscent of a management survey conducted some years ago which reported that most managers believed that their own organisation was well-managed and trustworthy, but that the majority of businesses were poorly managed and probably at least a little devious. One of these perspectives needs to change!

Table 4 summarises responses to the section of the Questionnaire relating to the perceived performance of the IIB on tasks which were laid down for it in the QITIS document and the appropriateness of these tasks. Respondents were asked first to score the IIB's "performance" of each task using the equivalent of a Likert-like 3-point scale (Doing well, Doing OK, Doing poorly). And second, to indicate whether they felt the IIB 'should' or 'should not' (appropriateness) be pursuing each task. Note that often, where respondents felt the IIB 'should not' be pursuing a particular task, they did not score the IIB's performance of the task. This to some extent explains the variability in number of responses to the 3-point scale.

The 'Performance' columns reflect the percentage of respondents who (1) gave the IIB at least a "Pass" (Doing well or Doing OK) on the activity; (2) believed that the IIB was not performing the task

well; or (3) indicated that they did not know whether the IIB was performing the task (or they didn't respond to that item). The 'Appropriateness' columns indicate percentage of respondents (4) who feel the IIB should (yes) be undertaking the task; (5) who feel the IIB should not (no) be undertaking the task; or (6) who are uncertain (?) whether IIB should be undertaking the task.

The importance respondents ascribed to Export development for the Industry (Tables 2 and 3) has been matched in Table 4 by perceived strong performance of the IIB in this area - 83% pass on task T3. The Culture (S10) and Outsourcing (S1) strategies were not mapped onto IIB tasks in the original strategy document. This is manifested, particularly in the case of Outsourcing, in the qualitative suggestions for additional IIB activities gathered as part of the data collection exercise.

Table 4 - Perceived Performance and Appropriateness of IIB Tasks

		PERFORMANCE			APPROPRIATE		
		Pas s	Poo r	?	Yes	No	?
		(1)	(2)	(3)	(4)	(5)	(6)
Establish & operate Business Development Unit	T1	58%	4%	38%	83%	0%	17%
Attract overseas & interstate IT companies to Qld	T2	63%	29%	8%	92%	4%	4%
Establish export channels for Qld IT products/services	T3	83%	0%	17%	88%	4%	8%
Co-ordinate the development of ISN for industry	T4	29%	13%	58%	63%	21%	17%
Promote the use of IT into Qld industries	T5	75%	4%	21%	96%	0%	4%
Establish criteria for location of IT precincts	T6	13%	13%	75%	42%	33%	25%
Liaise with the Information policy Board	T7	83%	0%	17%	92%	0%	8%
Co-ordinate open systems development in industry	T8	13%	17%	71%	46%	38%	17%
Co-ordinate hardware/software quality & productivity	T9	42%	13%	46%	71%	21%	8%
Liaise with R&D & educational institutes	T10	50%	17%	33%	88%	0%	13%

Based on the figures in Table 4, the IIB scores a "Pass" or better on six of the ten tasks, with the "stars" being Export and "Enabling" activities, and liaison with the IPB (much improved in 1996 according to several responses). Once again it is the "low value" items of ISN (*ranked least important of the 'major' strategies in Table 1*), IT precincts (*ranked least important for both self and IT industry in Table 2*) and open systems (*ranked third least important for self and least important for industry in Table 3*) which are rated low. The spread of responses for these tasks must give rise to consideration of whether these are appropriate tasks for the IIB. Of particular interest in this table is the observation that on six of the tasks, a third or more of respondents did not know whether the IIB was active, or believed that it was not.

From the 'appropriateness' columns in Table 4, respondents are observed to be almost entirely unanimous in their view that the IIB should be undertaking tasks 1, 2, 3, 5, 7 and 10. A minority of respondents appear to feel the IIB should not be involved in tasks 4 and 9 and a third or more of the respondents feel the IIB should not be involved in tasks 6 and 8.

As mentioned earlier, respondents were requested to record qualitative observations on the survey instruments. Tasks which appear to have generated the most and the lengthiest comments were: T2 - attract out of state IT companies; T4 - co-ordinate development of the ISN; T5 - promote the use of IT; and T7 - liaise with the IPB; . Following are analysed comments annotated by respondents in relation to the four tasks on which there appears to be least consensus (tasks 4,6,8,9).

Task 4: co-ordinate development of the ISN for industry - Three respondents referred to QREAP, the Queensland Regional Equity of Access Project, implying that QREAP supplants the need for IIB to be involved in this area. Two respondents implied that IIB is not equipped for this task, while a single respondent indicated the view that an ISN for industry is a waste of effort. On the basis of the statistics and annotated comments, it would appear there is a need for the IIB to further explore the value of any additional efforts aimed at implementing an ISN, in light of more recent developments (e.g. QREAP).

Task 6: establish criteria for location of IT precincts - Interestingly, though 8 of 18 respondents to this task indicated the view that the IIB should not be involved in this area, not a single comment was annotated on the survey instruments in relation to this task, other than four respondents indicating "I don't know". In one case a respondent commented on all tasks but this one. This task also has the largest number of non-responses; all of this perhaps suggesting a lack of clear definition, or of appreciation of the task.

Task 8: co-ordinate open systems development in industry - Though this task elicited the largest number of 'No's (9 No's and 11 Yes's), we again observe minimal comments from respondents. One respondent suggests that it is not IIB's role to try to pick technology winners. Another suggests there has been little evidence that the IIB can be effective in this area. A third suggests that this activity should be handled by the SQI (the Australian Software Quality Institute, a research centre located at Griffith University in Brisbane, Queensland).

Task 9: co-ordinate hardware and software quality and productivity - One respondent noted the Quality Assurance program (workshops) being supported by the IIB in this direction. Two others suggested that anything the IIB is doing in this area is either not visible or is only very recent.

Summary

The increasing importance of the IT industry globally is clear. Through the development of the Queensland Information Technology Industry Strategy (QITIS) and the creation of the Information Industry Board (IIB) to implement the strategy, the Queensland State Government has taken a proactive role in promoting the IT sector. This paper has reported various stake-holder perspectives 3 years after establishment of the QITIS and IIB.

Anecdotal evidence cited in the IIB Review and CEO Forum Reports which instigated this study, has been supported by the field study results reported herein. Key findings suggest that gaps in knowledge of the Queensland IT strategy and the IIB, misunderstandings regarding the role of the IIB, and conflicts of interest in the recommended strategies existed among the stake-holders.

These gaps in knowledge can be addressed only by appropriate information provided at the right time and place in the right form to a receptive audience. This is a challenge for the IIB to face. Doing this well will help to clear some of the misunderstandings. Other misunderstandings are the result of individual perspectives, as are the conflict of interest situations. These will not go away unless the perspectives are changed - new paradigms adopted. This study has demonstrated the possibilities of such an approach.

The study has highlighted the differing and sometimes conflicting goals of the various stake-holders, thereby emphasising the need to manage or balance these needs, goals and expectations in the best interests of Queensland.

Invariably, the focus of discussions which has followed Queensland's pioneering activities in IT&T industry development has been on the relevance of the QITIS/IIB and its experiences for other states and regions. While it is difficult to be prescriptive based on a single case, some broad guidelines may be drawn from the QITIS/IIB model.

In Queensland, IT&T is seen as an enabling technology which can be used to amplify human capability and not as a technology which replaces human efforts. Consequently, the use of IT&T is seen to be essential to achieve the government's vision of Queensland becoming a regional technology leader.

The relatively small population of Queensland and the state's physical size make the use of IT&T a socio-economic imperative in order for Queensland to remain competitive. The QITIS/IIB is an integral component of the state's IT&T strategy. It is designed to address the special needs of the IT&T Industry and to enable industry generally to exploit the potential of IT&T.

Attempts to emulate the QITIS/IIB in other socio-economic circumstances must take account of the IIB's place in the larger strategy. A strong commitment of the government to IT&T and the availability of financial resources and appropriate technology are common requirements for all countries. Detailed strategies, policies, and specific programs may have to be designed to alter the supply and demand forces of the socio-economic setting in each state or country in order to make IT&T a driver of economic growth.

In late 1995, having considered a diversity of sources of input, the IIB introduced the second version of the Queensland IT&T Industry Strategic Plan. While the Plan was not changed substantively, the changes that were made flow logically from observations made in this study.

Future directions for the study of the Queensland IT&T Industry Strategy and the IIB include broadening the geographical scope to include regional Queensland, and further study of comparative activity in other states, countries and regions.

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