

# International Operations Strategy of Public Sector Organisations

Stuart Orr  
Deakin Business School  
Deakin University  
221 Burwood Highway Burwood 3125 Australia  
College Station, TX 77843-4217  
EMAIL: scorrr@deakin.edu.au

**Abstract:** Public sector organisations in many countries are internationalising their operations into other countries. This internationalisation frequently follows channels such as aid schemes offered by the country's government. An investigation was conducted to determine whether the four categories of strategy approach in Miles and Snow's typology could be used to categorise the internationalisation operation strategy approach of Australian public sector organisations. Qualitative data collected from eight Australian public sector organisations determined that a set of nine operations strategy dimensions identified from the literature applied to the internationalisation behaviours of Australian public sector organisations. The data also indicated that Miles and Snow's four categories of strategy could be used to describe the combined international operation strategy behaviours of Australian public sector organisations. In addition, it was found that the international operation strategy behaviours of Australian public sector organisations aligned with at least two (and in one case four) of Miles and Snow's strategy categories. Alignment with two of Miles and Snow's strategy categories was quite commonly identified in other empirical studies of this typology.

**Keywords:** Miles and Snow, International Operations Strategy, China

## I. Introduction

Increasingly, public sector organisations are internationalising their operations. The Australian education industry is a perfect example, rising from a very minor exporter to Australia's third largest exporter, after coal and iron ore (ABS, 2008) over a ten-year period. The industry's international operations extend this international operations growth even further. Another important example is the internationalisation of Chinese state-owned (public sector) organisations, such as the very large China Capital Iron and Steel Company (Ding, 2000). Despite the scale of public sector internationalisation, very little research has been conducted into how they internationalise their operations and no research has been published on the international operation strategies that these organisations have adopted. This contrasts very poorly with the extensive international operation strategy research that has been conducted for private sector organisations (Orr, 2008).

One potential framework for describing the international operation strategy behaviours of public sector organisations is Miles and Snow's strategy typology (Miles & Snow, 1978) which has been shown to apply to public sector strategy at the domestic level (Ghobadian & James, 1998; Di Benedetto & Song, 2003; Peng, Tan, & Tong, 2004; Cueille, 2006; Meier, O'Toole Jr, Boyne, & Walker, 2007; Andrews, Boyne, Law, & Walker, 2009). Although originally developed for the private business sector, Miles and Snow's typology has become increasingly relevant to the public sector because of the increased exposure to deregulated and competitive environments that public sector organisations are now experiencing. In an effort to avoid loss of budget to private-sector competitors or the threat of privatisation, public sector organisations are now focusing on increasing the efficiency and customer service of their operations.

This paper examines the international operations strategies of eight Australian public sector organisations to determine whether Miles and Snow's strategy typology adequately explains the international operations strategy of these organisations. The research identified as similarities in operation strategy responses to the environmental conditions these organisations experienced the internationalising to China. These findings have been extended to the broader public sector through connections with the research findings and other public sector research.

## II. Literature review

Miles and Snow four categories of strategy can be defined as:

1. Prospectors "operate within a broad, periodically redefined product-market domain. Prospectors value being a first mover, responding rapidly to early signals of opportunity, and these responses often lead to competitive action" (Di Benedetto & Song, 2003:517). The "almost continually search for market opportunities, and . . . regularly experiment with potential responses to emerging environmental trends" (Miles & Snow, 1978:29).
2. Defenders "attempt to locate and maintain a secure position in relatively stable product or service areas. Defenders offer a limited range of products, protecting their domain instead by offering lower prices, higher quality, or better service than competitors" (Di Benedetto & Song, 2003:517) and "devote primary



attention to improving the efficiency of their existing operations" (Miles & Snow, 1978:29).

3. Analysers "make fewer and slower product-market changes than prospectors, but are less committed to stability and efficiency than defenders. Analyzers maintain a stable, limited line of products or services, carefully following a selected set of promising new developments." (Di Benedetto & Song, 2003:517) and "watch their competitors closely for new ideas, and . . . rapidly adopt those which appear to be most promising" (Miles & Snow, 1978:29).
4. Reactors "Firms that lack any well-defined competitive strategy and do not have as consistent a product-market orientation as the competition. Reactors are generally not willing to assume the risks of new product or market development, nor are they as aggressive in marketing established products." (Di Benedetto & Song, 2003:517) and "seldom makes adjustment of any sort until forced to do so by environmental pressures" (Miles & Snow, 1978:29).

#### **Application of Miles and Snow's typology to the public sector**

Although Miles and Snow's typology was developed specifically for competitive industries (Miles & Snow, 1978), it has been found to apply to the conditions normally experienced in the public sector, such as monopolies and specifically to public sector organisations (Ghobadian & James, 1998; Cueille, 2006). It has also been found to apply to not-for-profit organisations (Akingbola, 2006), which, increasingly, operate in cooperation with government agencies, along similar principles. More recent research into public sector organisations in China found that these organisations tended to adopt either defender or prospector strategies, with no examples of reactor strategies identified (Peng, Tan, & Tong, 2004). This finding may reflect the fact that prospectors were found to have greater operational resources whilst defenders have greater external opportunities in the Chinese business environment (Di Benedetto & Song, 2003).

Akingbola (2006) found that prospector and analyser were the most popular mode amongst not-for-profit organisations. By comparison, Meier et al (2007) found that the defender strategy was the most effective for the primary goals of UK public organisations whilst reactor strategies were best in response to the political dimensions of their environment.

#### **Process of public sector internationalization**

In developed countries, the case has been made for some time that public sector enterprises possess skills and capabilities that are valuable in other countries (Ives, 1994; Hill, 1996). In addition to industry support and revenue generation, one of the principal motivations for internationalising public-sector operations is to provide advanced management skills to support the aid programmes

being delivered by those public sectors. To successfully internationalise, public sector organisations are frequently forced to adopt commercial business behaviours or link with commercial organisations (Hellowell, 2003; Tang, 2007; Ahmad, 2008). Not all of the commercial international operations have proven, however, to be suitable for internationalising public sector organisations. In Norway, for example, it was found that international supply chains supporting international public sector organisations could not be effectively managed using commercial sector performance measures (Public Private Finance, 2004). Some public sector organisations found that they need either to privatise and become fully commercial, or abandon their adopted commercial behaviours to remain successful in international markets. Where they show to abandon commercial behaviours, their performance in the international markets suffered (Anastassopoulos, Balnc, & Pierre Dussauge, 1987).

Changes in public sector relationships with industry is a significant facilitator of public sector internationalisation. Levels of co-operation between the public and private sector have increased over the last decade through the formation of cooperative networks in many countries (Ahmad, 2008). These networks have been established by public sector organisations because of the valuable resources which the public sector now possesses (Yáñez, Magnier, & Ramírez, 2008). The internationalisation of commercial organisations in these networks provided greater opportunities for internationalisation of the public sector network members.

#### **Education**

In many countries, there has been very significant internationalisation of public sector higher education providers. This has been driven by a long-term interest in introducing an international perspective into the higher education sector in most countries. For example, development of Chinese higher education since the 1980s has included a focus on incorporating an increased international perspective (Yibing, 2008). The Japanese higher education sector has also internationalised its curriculum continuously (but not its operations) since the 1980s (Ninomiya, Knight, & Watanabe, 2009). The US higher education sector identified the value of internationalisation in the 1980s (Olson, 2005; McRobbie, 2008). This focus on internationalisation of perspective has provided a strong motivation for the subsequent internationalisation of operations in this industry in many countries.

Little consideration of operations strategy has been identified in association with operations internationalisation in this sector, however. For example, internationalisation of US university operations is considered to be a philosophy, rather than a change to operations. The result is very poorly coordinated and opportunistic internationalisation of this



public sector (Olson, 2005). Interestingly, the only apparent example of a strategic approach to internationalising a US higher education institution was the University of Indiana, whose president was in Australia (McRobbie, 2008). Despite this, the sheer size of the US higher education sector has enabled this industry to achieve some reasonable levels of internationalisation compared to other higher education industries. It is interesting that the Japanese higher education industry has not also managed to achieve a significant level of internationalisation, although it does have an objective of attracting large number of foreign students to study in Japan. The Japanese higher education sector is very different in its internationalisation to the Japanese automotive industry which, along with the US automotive industry is one of the most internationalised industries in the globe. Internationalisation of the UK higher education sector is based on establishing joint ventures with commercial organisations already in overseas markets (Newman, 2009). This has made it efficient in its internationalisation -- an objective of government policy for this sector. Canada objectives for the higher education sector, however, are so short term, that there is almost no support for internationalisation of this industry (Trilokekar, 2010).

### Other Industries

The South Korean military exports through joint ventures and marketing conducted by the South Korean Government Office of Defence Acquisition (Business Monitor International, 2010). Japan Post, although being the country's largest employer, was unable to internationalise until the government started to privatise it. Privatisation freed up revenue from its more lucrative mail services to support its expansion into the international delivery market. The experience for Deutsche Post (the German postal giant) was very similar with its protected letter postal business enabling it to make a number of major acquisitions in the international market (Goydke, 2009). Both British Telecom and Deutsche Telekom were also successful in internationalising once they had been partially privatised. Privatisation allowed them to improve the efficiency of their operations and change their structures to the point where they could successfully compete in the international market's end could pursue internationalisation through acquisition (Börsch, 2004). By comparison, the Singapore government was unsuccessful in its attempt to establish an industrial park in Suzhou in China without private partners (Pereira, 2007). This government entity found it was unable to operate as efficiently as the commercial organisations operating other industrial parks. Internationalisation using domestic resources, however, has proved to be successful for public sector organisations such as the Montréal, Paris and Rome city governments (Jouve, 2007). The Chinese government is heavily involved in internationalisation in six areas of its operations - central state bodies, State financial institutions, provincial governments, special economic zones, large state

enterprises and state-owned defence manufacturing facilities. In almost every case, a private arm is established to facilitate the establishment offshore international operations and gain access to local capital (Ding, 2000).

### Propositions:

Based in literature reviewed above, three propositions were proposed for and tested in this research:

1. Dimensions of Operations Strategy apply to the internationalisation behaviours of Australian public sector organisations.
2. Miles and Snow's four categories of strategy could be used to describe the combined international operation strategy behaviours of Australian public sector organisations.
3. The international operation strategy behaviours of Australian public sector organisations will align with one or two of Miles and Snow's strategy categories. (Alignment with two of Miles and Snow's strategy categories was quite commonly identified in other empirical studies)

The literature review above was used to identify the following nine dimensions of operations strategy, classified under three main categories that would apply to the international operation strategies of public sector organisations:

- 1) operations:
  - a) operations management
  - b) operations development
  - c) operations constraints
- 2) supply chain:
  - a) logistical issues
  - b) supply chain management issues
- 3) technology and infrastructure:
  - a) technology and systems transfer
  - b) technical skill levels
  - c) infrastructure and local resource differences
  - d) IP protection

### III. Methodology

Data to examine the three propositions above was collected from interviews held with eight public sector Australian organisations that have internationalised to China. The participants were selected at random from organisations identified in the public domain media that had internationalised to China either through direct investment or through the establishment of partnerships. The organisations were contacted by e-mail with a telephone follow-up to determine whether they would be available to participate in an interview. This continued until eight organisations had agreed to be involved. The acceptance rate for involvement in the survey was 50%, however, some of the rejections were due to the unavailability of a suitable



participant in the timeframe of the study, rather than a preference not to participate.

Not-for-profit organisations providing a coordinating role for industries were included in the study in recognition of the fact that some not-for-profit representatives organisations operate in exactly the same manner as their public sector counterparts. Industries which lack a government owned coordinating agent typically establish their own, using the same model as the government owned coordinating agencies.

In total, ten interviews were conducted with the CEO, international operations director or Chinese operations manager of these eight public sector organisations, depending upon how many participants the organisation elected to provide for the research data collection. The relevant features of these organisations are shown in Table 1.

#### IV. Findings

Some of participants had established operations in China 30 or more years prior. Only a small number of Australian organisations had internationalised to China prior to the 1980s. This suggests that the internationalisation of public sector operations to China did not significantly lag behind the bulk of internationalisation of private sector operations to China from Australia.

Table 1 summarises the characteristics, the nature of internationalisation and the number of staff involved in internationalisation of the participants. In each case, a number of staff allocated to the international operations were also located within Australia, but travelled frequently to China. In the case of organisations 3-8, a number of additional staff were contracted through agencies on a permanent basis but were not considered to be staff members. Each organisation is identified in the following discussion by the Identification Number (ID) in Table 1.

Insert table 1 here

##### *Motivations:*

Some participants were motivated to internationalise to head off major international competitors from entering the domestic market. Organisation one established a partnership with nine sister organisations in countries including China, US, Japan and Korea to take both markets less attractive to international competitors. Other participants were motivated to become more involved with trade and international activities with China in their industry and because of the economic importance of trade with China for their constituencies. Organisation three was particularly motivated by the importance of economic trade with China for its constituency as well as the direct trade with China being conducted by other public sector organisations operating within its region. Organisations five and six entered China to gain access to partners and the Chinese market for its education exports. Organisation seven entered

China to create partnerships for local delivery there. Organisation eight entered China because there was a need to support the high level of trade with China in the industry which it supported.

##### *Operations management:*

The participants experienced relatively few general operations management issues; once their international operations were established, with the exception of organisation seven. The participant's experience of establishment operations in China was that it was generally challenging. It took several years to finalise because of the difficulty in meeting local regulations and the time it took to establish the necessary local relationships. Subsidiaries spanning larger areas of China experienced a larger variation in the regulations that they had to meet in each zone as well. In the case of organisation one, operations coordination was achieved by adopting a comparable product design and a shared IT logistics system which serviced every organisation within the alliance's needs. Organisation six found that the quality of education they wished to provide in China could not be maintained through local partners and that it was necessary to attract all students to Australia. In other words, it had to focus its Chinese operations purely on marketing its exports. It did, however, conduct research activities as partnerships with Chinese organisation in universities on a project basis. Organisation seven found that quality and profitability was hard to maintain when delivering their program in China with local partners. They reverted to exporting their service to China as well. Subsequent to this, they found that an office in China was not required and used local agents for their marketing, instead. Organisation seven found that maintaining the quality of its Chinese students severely constricted the flow of Chinese students into its degrees. Organisation eight found that the textile industry it supported needed to focus much more on innovation and product evolution to remain a viable part of the Chinese market. The textile industry's weakness in innovation was causing demand in China to drop significantly.

##### *Operations development:*

Some of the participants had long ago reached the maximum operational size that was possible within the context of Australia. Establishing subsidiaries in China provided an opportunity for substantial systems growth for all the participants, achieving economies of scale and adopting operations that would not have been possible solely within Australia. Operations development constituted one of the principal motivations for entering China and has been discussed in the *motivation* section above. In some cases, the Chinese subsidiaries provided greater scope for operations than was available to be participants in the research. In the case organisation one, establishing a Chinese subsidiary enabled it to enter a number of other attractive industries, such as government supported banking.



### *Operational constraints:*

In some cases, the opportunities for operations development were far greater than the participant could accommodate and so operations were limited by either geographical locations or by targeting specific industries. Organisation three chose to focus on the aerospace, automotive, creative and biotechnology industries. Organisation six found that Chinese government changes to policies significantly affected the amount of activity it undertook in China. Organisation seven noted that their ability to approve and implement changes limited the amount of internationalisation that could occur in China. Factors limiting the quality standards that the organisation could achieve affected all eight participants. These provided a significant operational constraint where the quality standards could not be brought up to levels acceptable to the organisation and its commitments (which included regulatory requirements).

### *Logistical issues:*

Logistical issues were quite significant, predominately due to Chinese infrastructure and the layout of Chinese cities. Organisation three noted that Chinese cities tend not to have a central business district which made it difficult for them to choose the location from which they could have a significant impact on business relationships in that city. Organisation four found that considerable resources were invested in travelling through China to support clients, as compared to countries like Japan, where trade interfaces were much more geographically concentrated and minimal travel was required. Logistical constraints for organisation six meant that in country operations were not profitable and only exports to China generated profit. Organisation seven found that the Internet and computer access resources were quite adequate to support their programs in the major cities, but were not adequate in the smaller cities. This made it harder to manage successful partnerships in the provincial cities, even though the competition was much lower there. Organisation eight found that, in its industry, the dominance of Chinese domestic standards over international standards could seriously impact with creating sales in the Chinese market.

### *Supply chain management issues*

Supply chain management issues proved to be challenging, particularly in relation to local regulations in China. These regulations varied across the country significantly and created many complications for the participant's supply chains. Organisation one, for example, established an alliance of nine large national scale utilities involved in distribution. The IT system used to track the distribution was central to the success of the alliance's operations. In the case of organisation three, 30 years of connections provided a range of opportunities for dealing with the supply chain management issues organisation from its municipality experienced. IT also proved to be a useful resource for

dealing with international coordination amongst the respondents. Organisation five used small numbers of agents to generate demand for its exports to China. It found that small numbers of agents generated more export demand than large groups of agents which had limited commitment. Organisation eight found that poor information flow within the market interfered with supply through the buyers and traders making up the supply chain in its Chinese market. This resulted in a significant supply chain bull whip affect. Poor knowledge of the Australian industry and a reluctance to make any investment in acquiring this knowledge made the Chinese section of the supply chain operate ineffectively in organisation eight's industry.

### *Technologies and systems transfer:*

The experience of the participants was similar to that of international manufacturing companies, in that technologies systems and intellectual property formed a basis for internationalising into China. Organisation one established a joint-venture subsidiary with its sister organisation in China, to take over some of the operations of the Chinese organisation. This was attractive to the Australian organisation because it generated further revenue and provided international experience. It was attractive to the Chinese organisation because it provided access to systems and technologies that were more advanced than those the Chinese organisation was using. It also enabled the Chinese organisation to extend its supply chain as it was operating at its natural limits. China represented a bigger market than its supply chain could manage. There was some technology and system exposure risk for organisation one, however, because it was a public sector organisation, its IP and systems were not well protected even in its domestic market. Secondly, it was able to extend and develop these systems more quickly using the experience from its Chinese joint-venture subsidiary.

Different systems more easily integrated in partnerships where the organisations performed similar services. In the case of organisation one, the fact that both partners were in exactly the same line of business enabled the substantial cultural gaps and differences in the systems within the organisations to be bridged within a period of eight months. In the early stages, however, cultural divides were particularly significant. Organisation three invested considerable effort in ensuring that Chinese cultural expectations both within China and Australia were met. Interestingly, there is little evidence to suggest that the reverse was true suggesting a Chinese dominance in the operations that are established. Organisation seven relied extensively on its internal Chinese cultural and legal knowledge when seeking partners in China for joint ventures. Organisation seven also relied heavily on technology transfer for the success of its partnerships to enable the Web-based education it provided to be used by the partner in China. In a number of instances, this organisation found that its partner was unable to provide adequate computer and



Internet access. Organisation eight found that the Chinese were particularly interested in technology transfer, sometimes on a scale and complexity greater than that in Australia, although Australia was a world leader in its industry.

#### *Technical skill levels:*

Accessing equipment and general staff for subsidiaries in China was not a problem for the participants. Accessing staff with high levels of skill, however, was an issue. Skilled staff were difficult to find, tended to move on fairly quickly and demanded relatively high salaries. Organisation one found that it was even more difficult for them to attract skilled staff because their subsidiary was relatively small, new and not attractive to the type of skilled staff they were seeking. Organisation eight found that, although the Chinese were particularly interested in technology transfer, there was far less interest and appreciation of acquiring technology management and utilisation skills. The Australian industry organisation eight supported was also focused on supplying technology from Australia to China.

#### *Infrastructure and local resource differences:*

The variation in infrastructure and availability of local resources such as contractors and consultants was a significant issue for all of the participants. Organisation one chose to establish in large and economically developed regions such as Shanghai, Shenzhen and Hong Kong to gain access to sufficiently developed local infrastructure. Organisation three noted that the infrastructure was much more reliable than it was in the 1990s and the scale of many of the infrastructure projects was enormous by Australian standards. Organisation eight found that Internet infrastructure outside the capital cities was a limitation to the development of partnerships there.

#### *IP protection:*

Legal constraints did not affect the operations that were set up in China except that, until fairly recently, regulation required the Chinese organisation to be the majority owner in a joint-venture. Although organisation one established a partnership of nine large national scale utilities, no legal entity was established. Organisation two invested considerable effort in supporting Australian companies dealing with the day-to-day legal aspects of maintaining operations in China. Changing the status of subsidiaries as they develop can result a number of little legal difficulties as well, as organisation three experienced when they tried to change their local office to a fully representative municipal office. Legal constraints also impacted on intellectual property protection for the participants. Organisation four was very careful with the information they provided when in China and did not provide information directly to Chinese companies because of concerns for protection of copyright material and the intellectual property of the organisations that they represented. Organisation five's concern about the

limited protective value of contracts in the Chinese context was a significant barrier to establishing a joint-venture partnership there. By comparison, organisation seven's joint-venture partners were given the IP material necessary to allow them to teach their part of the course locally in China. Although there was some concern as to what would happen to this material, if the partnership was wound up, the potential loss of this IP was not considered to be a major issue.

## **V. Discussion**

Table 2 below indicates the significant operations strategy dimensions for each of the participants. It shows that each of these dimensions was identified by at least 25% of the participants. Each of these operations strategy dimensions is therefore considered to be a significant component of international operation strategy for Australian public sector organisations internationalising to China. It supports the (first) proposition that international operation strategy is present in internationalisation behaviour of Australian public sector organisations.

Insert table 2 here

The combined responses of the participants in each of those international operation strategy dimensions was compared with the characteristics of each of Miles and Snow's strategy categories. In each case, the findings were found to be highly consistent with one each of these categories. The combined behaviours of the participants mapped on to each of Miles and Snow's four categories of strategy as shown in Table 3 below. This important finding supports the (second) proposition that Miles and Snow's four categories of strategy could be used to describe the combined international operation strategy behaviours of the participants.

Insert table 3 here

The operation strategy dimensions identified in Table 2 for each organisation were matched with the Miles and Snow category indicated in Table 3 for that operation strategy dimension. This enabled the identification of the Miles and Snow category of international operations strategy that organisation had adopted. These findings are summarised in Table 4 below. This finding supports the (third) proposition that the international operation strategy behaviours of Australian public sector organisations will align with one or two of Miles and Snow's strategy categories. Although the participant data had been used to identify the relationship between the operation strategy dimension and Miles and Snow's categories in this last stage of the analysis, only combined data had been utilised. If the use of this data was the main reason for the convergence in the results in Table 4 of (rather than the dominance of certain international operation strategy behaviours), the aggregation of the findings would result in a much more uniform spread of operation strategy behaviours across all four of Miles and Snow's categories than was identified.

Insert table 4 here



The findings shown in Table 4 are of particular interest. Almost all of the organisations, with the exception of organisations six and eight, displayed a combination of prospector and analyser traits. This finding may reflect the fact that these participants viewed entry into China as a challenge in which there was much to learn and for which their skills were relatively limited. Even an organisation with a prospecting inclination in its internationalisation strategy would be strongly motivated to analyse and plan as much as possible under these conditions. Ghobadian et al's (1998) research into public sector organisations that had recently privatised identified a similar outcome. They found that some of the public sector organisations in their research presented themselves as a "cautious prospector" in which elements of analyser were also identifiable. They argued that regulatory constraints stopped these public sector organisations from taking the same levels of risk as a commercial prospector organisation would have in Miles and Snow's typology. In more recent research, French public hospitals were also found to display this phenomena, frequently existing on the continuum between prospector and analyser (Cueille, 2006). Interestingly, Desarbo's (2005) research (into commercial enterprises) found that in China (as well as the US and Japan) the prospectors and analysers were the most successful.

Organisation four had a very different operations internationalisation strategy approach to all of the other participants, displaying characteristics of each category type. This organisation supported an Australian industry in China which was experiencing tough competition from a Chinese domestic industry. It may have been the case that this organisation was attempting a multifaceted strategic approach in response to the limited sources of operational advantage at its disposal. It could be argued that this organisation adopted a defender strategy with some elements of the other strategies because internationalisation into China requires a degree of prospector behaviour is well. This finding is consistent with research into the Chinese public sector operation strategy orientation which found that these organisations tended to either adopt defender or prospector strategies, depending upon how closely they were aligned with state ownership in China. Organisations that internationalised to China through joint ventures with state-owned Chinese organisations, for example, were more likely to adopt defender strategies (Peng, Tan, & Tong, 2004). Similarly, prospectors and defenders in the UK public sector were the most successful in regard to their primary objectives (Meier, O'Toole Jr, Boyne, & Walker, 2007; Andrews, Boyne, Law, & Walker, 2009), whilst reactors were the most successful when operating in strong political environments (Meier, O'Toole Jr, Boyne, & Walker, 2007). Organisation eight also supported an Australian industry in China which was experiencing very strong competition from a domestic Chinese industry. Their approach, however, was more focused because they believed that technology and innovation could still provide a competitive advantage in the

Chinese market. Under those conditions, analysing the opportunities in the market and reacting to the identified issues would combine to create a logical internationalisation strategy for this participant. The response category of reactor was not evident in Peng's (2004) public sector operation strategy research, suggesting that further developments in the Chinese public sector environments may have occurred since Peng's research. Di Benedetto's (2003) research did identify the presence of reactors in the Chinese market and noted that these were often aggressively internationalising organisations that will also very aware of the environmental conditions, which is consistent with this observation. Desarbo's (2005) research into commercial enterprises also confirms that external environmental conditions will have a significant impact upon the Miles and Snow category. Akingbola's (2006) research suggests that not-for-profit organisations change their strategy category in response to their external environment, frequently moving to a prospector strategy. The environmental factors in China identified by the participants such as the impact of local regulation support a reactive element to their international operations strategies.

## VI. Conclusion

This research identified significant evidence for the existence of nine operations strategy dimension in the internationalisation behaviours of public sector organisations entering China. This supports Proposition 1. These operations strategy dimensions were: operations management, operations development, operations constraints, logistical issues, supply chain management issues, technology and systems transfer, technical skill levels, infrastructure and local resource differences and IP protection.

Miles and Snow's four categories were found to be applicable to the categorisation of the international operations strategy of the participants. This supported Proposition 2 in that Miles and Snow's four categories could be used to describe the combined international operation strategy behaviours of Australian public sector organisations. As these organisations had similar counterparts in other countries (including the international market being investigated, China), it is reasonable to assume that Miles and Snow's typology can be applied to the international operation strategies of public sector organisations in other countries. The combined behaviours of the interview participants in each of the international operations strategy dimensions demonstrated an alignment with (mainly) two of Miles and Snow's strategy categories. This supports Proposition 3.

Matching the operation strategy dimensions that were significant to each of the participants and that strategy dimension's alignment with the appropriate Miles and Snow strategy category enabled the strategy categories of each of the participants to be identified. Seventy-five % of the participants were found to have adopted a *cautious prospector* approach (Ghobadian & James, 1998) to their



international operations strategy. This finding reflected the fact that these participants entered China in order to gain access to the large Chinese market and viewed this as a challenging undertaking requiring great care and considerable information collection. This finding also supported prior research into public sector organisations which suggested an adjustment to Miles and Snow's typology to accommodate a more formal cautious form of prospector (Ghobadian & James, 1998).

The findings relating to the other 25% of the participants which had not adopted a prospector/analysers strategy also reflected their individual international operation strategy approach. In both cases, these organisations were operating in an industry in China where competition from the Chinese domestic industry was extremely intense. In both cases, this environment would have precluded the organisation from a prospector/analysers strategy and drove it to the international operation strategy identifies.

The findings of this study and the analysis approach adopted warrant further empirical testing. Opportunities for empirical examination of single public sector industries is limited as most public sector industries within a single country will contain very few organisations that may choose to internationalise. In addition, cross-country analysis of similar public sector organisations will be complicated by the different domestic competitiveness of the industry to which that public sector organisation is connected. The education and tourism industries, however, provide potential for further and critical testing of these concepts.

## References

**Please contact the author.**

ID	Description	Structure of internationalisation(s)	Number of staff in China	Total number of staff dedicated to China	Used local agents for marketing
1	Government utility involved in distribution	Network Alliance, Joint-venture partnerships, WOFE	120	150	no
2	Commerce NGO	Exporting, WOFE	10	30	no
3	Large municipal Council	WOFE, Network Alliance, exporting	4	8	yes
4	Agricultural NGO	Exporting, network alliances, local contractors	1	5	yes
5	University	Exporting, joint-venture partnerships	0	20	res
6	University	Exporting, joint-venture partnerships	0	15	yes
7	University	Exporting, joint-venture partnerships	0	Closed down China office	yes
8	Research centre	Exporting	0	3	yes

*Table 1. Summary of internationalisation of participants*



Dimension of Operations Strategy	Organisation							
	1	2	3	4	5	6	7	8
Operations management	✓					✓		✓
Operations development	✓	✓	✓	✓	✓	✓	✓	✓
Operations constraints	✓	✓	✓	✓	✓	✓	✓	✓
Logistical issues				✓		✓	✓	✓
Supply chain management issues	✓		✓		✓			✓
Technology and systems transfer	✓		✓				✓	
Technical skill levels	✓							✓
Infrastructure and local resource differences	✓		✓					✓
IP protection	✓		✓	✓	✓		✓	

Table 2. Operation Strategies Dimensions that were Significant Issues for Each Organisation

Issue	Miles and Snow Category			
	Prospector	Defender	Analysar	Reactor
Operations management			✓	
Operations development	✓			
Operations constraints			✓	
Logistical issues				✓
Supply chain management issues			✓	
Technology and systems transfer	✓			
Technical skill levels		✓		
Infrastructure and local resource differences				✓
IP protection		✓		

Table 3. Match of Operation Strategy Dimensions to Miles and Snow's Four Strategic Approaches



Participant	Miles and Snow Category			
	Prospector	Defender	Analysers	Reactor
1	✓		✓	
2	✓		✓	
3	✓		✓	
4	✓	✓	✓	✓
5	✓		✓	
6			✓	
7	✓		✓	
8			✓	✓

*Table 4. Match of each participant to Miles and Snow's Four Strategic Approaches*