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# Entry and business strategies used by international architectural, engineering and construction firms in China

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International architectural, engineering and construction (AEC) firms need to decide on the appropriate market entry mode and business strategies when undertaking projects overseas. The objectives of this research are to investigate the effective market entry modes for penetrating China and the effective business strategies for managing projects in China. The research method is based on a structured questionnaire and data were collected via postal survey. Interviews have been conducted to complement the survey. The results show that establishing a wholly owned subsidiary in China is the most effective entry mode. Foreign AEC firms need to adopt a differentiation strategy by providing niche and superior service. They must also pay great attention to customer satisfaction to gain competitive advantage and clinch and manage projects. To succeed in China, foreign AEC firms need to set up a physical office there, to develop a good understanding of local by-laws, understand client requirements better and therefore provide them with a superior product or service.

**Keywords:** China, foreign firms, international construction, market entry mode, strategies

## Introduction

China's construction industry is the world's second largest after the US, with a total output of US\$151 billion in 2000 (US Department of Commerce, 2000). With China being a member of the World Trade Organization (WTO), influx of foreign multinational corporations and hosting of the 2008 Olympics, the construction sector is booming. International architectural, engineering and construction (AEC) firms are, accordingly, pursuing work in China.

To succeed in the globalizing AEC market firms need to develop, among other things, appropriate market entry mode and business strategies, referred to in this paper as international strategies. These service providers need to select effective international strategies that contribute to enhancing their competitive advantages (Porter, 1990). Unfortunately, many AEC firms do not always know which strategies to adopt. Failure

to adopt the appropriate strategies may lead to low productivity, low efficiency, inflexible and low technology, which finally ends with low profits and even financial losses.

A priori, international construction is different from domestic construction in several areas. The international construction process is marked by the combination of business and project management skills with both mobile factors of production and location-bound support industries (Enderwick, 1993). Besides the typical risks of a domestic project, international projects have a complex and subtle web of political, economic and cultural risks (Han and Diekmann, 2001).

The aim of the research is to determine the important strategies that foreign AEC firms adopt when they undertake projects in China. The specific objectives are to investigate (1) the effective market entry modes for penetrating China; and (2) the effective business strategies for managing projects in China.

The findings are important because they can help AEC firms, whether they are already in China or are only considering moving into the country, move up the

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learning curve quickly. In this paper the 'host country' is the nation where the project is based, in this case China. 'International or foreign firms' refers to firms with headquarters outside China.

### Market entry modes

Caves (1982) identified four basic ways to expand internationally, from the lowest to the highest risk: (1) exporting; (2) licensing and franchising; (3) strategic alliances; and (4) wholly owned foreign subsidiaries. This study focused on the last two entry modes, which are generally more appropriate for AEC companies.

In a strategic alliance, organizations pool or share their resources and expertise with other firms, and the parties share the rewards or risks of starting a new venture. Strategic alliances in international construction can take various forms, such as a *project* joint venture (cooperative JV), a full-blown JV company (*equity* JV), a consortium or a marketing alliance (Sillars and Kangari, 1997). A *project* JV happens when two or more firms come together in a flexible one-off business arrangement to undertake a project. An *equity* JV is a limited liability company, where parties share investment, control, risk and profit in accordance with the equity split. Compared to project JV, an equity JV is a more permanent arrangement involving the incorporation of a new firm. Generally, JVs are popular in less developed countries because of the benefits of technology transfers, risk sharing, job creation and capital inflows (Sridharan, 1998).

When firms choose to set up wholly owned foreign subsidiaries as the entry mode, they are establishing operations in a foreign country without direct involvement of firms from that country. The provision of AEC services in foreign markets using this mode involves establishing a foreign affiliate by way of a branch or subsidiary office (United Nations, 1990). This mode allows firms to maintain a presence in the foreign country.

From the literature, 13 possible entry methods were identified (see Table 4). Hitherto, it is not known how effective each entry mode is for penetrating China. This study therefore aims to fill this gap in the literature. The results from the fieldwork will indicate which entry modes are most successfully used by foreign AEC firms.

### Business strategies

International construction is wrought with more types of risks than domestic construction, two principal types

being political and economic risks (Ashley and Bonner 1987; Han and Diekmann 2001). Political risks include risk of expropriation, war, riot and acts of foreign governments. Economic risks include currency exchange and restrictions and tax discrimination. These risks call for different strategies to be adopted in managing international projects.

There are various business strategies that AEC firms can implement to increase profits or add value when undertaking projects in international AEC markets. According to Porter (1980), managers must choose between the two basic ways of increasing the value of an organization's products: differentiating the product to add value or lowering the costs of value creation. Differentiation strategy usually involves having a core competence that competitors cannot easily match or imitate (Hamel and Prahalad, 1994). In international construction, differentiation strategy involves providing speciality or superior quality products or services. The low-cost strategy may be achieved if firms establish price competitiveness.

In contrast to Porter (1980), Christensen (1997) theorized that firms should identify and build new business through disruptive innovation. It is an idea that a company should compete not on better quality (differentiation strategy) or lower prices (low-cost strategy), but rather take on a competitor with disruptive innovations that either create new markets or disrupt the prevailing business model from the low end. Regardless of the adopted business strategy, great attention to satisfying the clients' needs is essential (Kangari and Lucas, 1997). To achieve this, the head office should provide good support.

Procurement plays an important role in international business. Firms undertaking international business are expected to procure globally by sourcing goods and services from locations around the globe to take advantage of the cost and quality of factors of production (Levitt, 1983). The strategy of 'localization' through the employment of citizens of host countries has been shown to be effective means for managing international construction business (Soubra, 1993).

Structuring a financing scheme for clients from developing countries is an important way to win bids for projects that are funded by international funding agencies (Tiong and Yeo, 1993). AEC firms may also provide financing or take an equity stake in the project through the build-operate-transfer arrangement (Wang *et al.*, 2000).

Because international construction projects are usually complex, a business strategy involving building up a network of contacts (e.g. subcontractors, trade specialists, financier and legal advisers) in the host countries is usually needed (Strassmann, 1989).

Obtaining political backing for the project is also vital (Titus, 2000).

A total of 22 business strategies (Table 5) were identified from the literature as options available to AEC firms to manage their projects after they have entered the foreign market (using one or more of the 13 entry modes identified earlier). The fieldwork was undertaken to determine the more important business strategies adopted by international AEC firms when executing projects in China.

## Research method

A two-pronged research design was utilized for this study, the first being a structured questionnaire survey. There were three parts in the questionnaire, the first part requiring respondents to provide information about themselves and their firms for the purpose of data classification. The second part sought information about a representative international project that their firm had recently completed. Information such as project type, approximate contract sum, project location and procurement method adopted was asked.

The third part asked respondents to indicate which entry modes and strategies they had used and their perception on how effective these were on a seven-point Likert scale, where 1 represented 'strategy played a negative role' and 7 stood for 'strategy played a very important role in achieving success'. Success is operationalized as meeting project objectives such as within budget, on time and to acceptable quality.

The population frame for this study comprised AEC firms that had undertaken and completed projects outside their home countries. As there is no world registry on AEC firms that export their services, the size of the population is not known. A research decision was made to limit the study to the authors' home countries (i.e. Singapore and the US). Therefore, the sampling frame comprised AEC firms which have headquarters in the US or Singapore, and had undertaken international projects.

The USA samples comprised all US-based international contractors and international design firms ranked by the *Engineering News Record* in 2001 and 2002. Altogether, there are 150 such firms. The Singapore sample size was also set at 150, to avoid bias. In Singapore, all the Building and Construction Authority listed top 30 firms that export AEC services were selected. Due to a lack of published data, another 120 firms were selected randomly from the registry of Singapore Contractors Association (SCAL), Singapore Institute of Architects (SIA) and Association of Consulting Engineers Singapore (ACES).

A pilot study was conducted and this led to a few minor adjustments to the questionnaire. The finalized questionnaire was then distributed by post to the selected samples in August and September 2002. The questionnaire was self-administered, which precluded verification of responses.

The second research prong was 13 interviews of practitioners conducted in November and December 2002. The purpose of the interviews was to validate and elaborate on the postal survey findings. Interviewees

**Table 1** Characteristics of respondents and their firms

| Respondents' characteristics | Frequency     | Percentage* |
|------------------------------|---------------|-------------|
| Designation                  |               |             |
| Top management               | 20            | 62.5        |
| Middle management            | 10            | 31.3        |
| Professionals                | 2             | 6.2         |
| Years in industry            |               |             |
| 1–10 years                   | 2             | 6.2         |
| 11–20 years                  | 10            | 31.3        |
| >20 years                    | 20            | 62.5        |
| Mean                         | 24.6 years    | –           |
| Median                       | 28 years      | –           |
| Workforce                    |               |             |
| 10–100 employees             | 7             | 21.9        |
| 101–200 employees            | 7             | 21.9        |
| 201–500 employees            | 7             | 21.9        |
| >500 employees               | 7             | 21.9        |
| Information not provided     | 4             | 12.5        |
| Mean                         | 623           | –           |
| Median                       | 250           | –           |
| Revenue (USD)                |               |             |
| Up to \$50 million           | 15            | 46.9        |
| \$51–100 million             | 3             | 9.4         |
| >\$100 million               | 10            | 31.3        |
| Information not provided     | 4             | 12.5        |
| Mean                         | \$1.1 billion | –           |
| Median                       | \$37 million  | –           |
| International revenue        |               |             |
| 1–10% of total revenue       | 12            | 37.5        |
| 11–20% of total revenue      | 4             | 12.5        |
| 21–30% of total revenue      | 5             | 15.6        |
| >30% of total revenue        | 4             | 12.5        |
| Information not provided     | 7             | 21.9        |
| Mean                         | 20.4%         | –           |
| Median                       | 11%           | –           |
| Respondents' home country    |               |             |
| Singapore                    | 16            | 50.0        |
| USA                          | 16            | 50.0        |
| Nature of firm (predominant) |               |             |
| Design and consultancy       | 17            | 53.1        |
| Construction and management  | 15            | 46.9        |

\*Rounding-off error may have occurred.

were selected from among construction industry professionals known to have managed projects in China. While it would be ideal to interview experts from many different countries, time and cost constraints prevented this. Instead, experts from the authors' home countries (i.e. Singapore and the US) were selected for face-to-face interviews. Hong Kong experts were interviewed to contrast Singaporean and Americans' views. As Hong Kong returned to China not long ago, the Hong Kong experts were a special group of 'foreign insiders'. They were interviewed via e-mail.

### Data sample characteristics

Questionnaires were sent to 300 AEC firms. Seventy responses were received (23% response rate). This

paper focuses on the 32 firms that had China experience. Details of the respondents and projects are given in Tables 1 and 2, respectively. Most respondents are from the top management and have 20+ years of industry experience. More than one-third of the firms have more than 10% of their revenue derived from overseas projects.

The majority of the projects are private sector. This is expected because many public projects would have been undertaken by Chinese AEC firms. A large percentage of the projects is general building, procured through selective tendering and based on design-bid-build system. This underscores the importance of developing business relationships in China rather than relying on open bid invitations.

As mentioned, 13 personal interviews were conducted to validate and elaborate on the postal survey

**Table 2** Project characteristics

| No | Project characteristics              | Frequency       | Percentage* |
|----|--------------------------------------|-----------------|-------------|
| 1  | Location in China                    |                 |             |
|    | Beijing                              | 3               | 9.4         |
|    | Shanghai                             | 9               | 28.1        |
|    | Guangzhou                            | 4               | 12.5        |
|    | Hong Kong                            | 5               | 15.6        |
|    | Others                               | 11              | 34.4        |
| 2  | Contract sum (US\$)                  |                 |             |
|    | Up to \$25 million                   | 14              | 43.8        |
|    | \$26–50 million                      | 7               | 21.9        |
|    | >\$50 million                        | 6               | 18.8        |
|    | Information not provided             | 5               | 15.6        |
|    | Mean                                 | \$391.2 million | –           |
|    | Median                               | \$31 million    | –           |
| 3  | Ownership                            |                 |             |
|    | Public                               | 13              | 40.6        |
|    | Private                              | 19              | 59.4        |
| 4  | Types of project                     |                 |             |
|    | General building                     | 19              | 59.4        |
|    | Manufacturing                        | 2               | 6.3         |
|    | Power                                | 2               | 6.3         |
|    | Industrial process                   | 2               | 6.3         |
|    | Petroleum                            | 1               | 3.1         |
|    | Transportation                       | 6               | 18.8        |
| 5  | Procurement method                   |                 |             |
|    | Design-bid-build                     | 21              | 65.6        |
|    | Design-build                         | 6               | 18.8        |
|    | Build-operate-transfer               | 3               | 9.4         |
|    | Management contracting               | 2               | 6.3         |
| 6  | Bidding procedure                    |                 |             |
|    | Open competitive bidding             | 6               | 18.8        |
|    | Selective tendering/prequalification | 19              | 59.4        |
|    | Negotiation                          | 7               | 21.9        |

\*Rounding-off error may have occurred.

findings. The interviewees are very senior and have extensive experience in managing projects in China (see Table 3). Their views are discussed together with the survey findings.

### Entry modes into China

Table 4 shows the entry modes adopted by the respondents. Among the 13 possible entry modes shown in Table 4 (columns 3–6), only three entry modes were perceived to be effective in helping the project achieve success ( $p < 0.05$ ):

- Set up a branch office in China (E1) (mean = 5.105)
- Set up a subsidiary firm in China (E2) (mean = 5.579)
- Set up a project JV with a Chinese firm (E7) (mean = 5.143).

Those that did not produce a successful outcome are those that failed the *t*-test. These include forming equity joint ventures (E4, E5 and E6) and merging or acquiring a Chinese firm (E3).

Considering only contractors (columns 7–8, Table 4), there seemed to be no specific entry mode is perceived as effective ( $p < 0.05$ ). For consultants (columns 9–10), the entry modes that were effective at a statistically significant level are the three modes listed above; merger and acquisition; and forming alliances with financial institutions and clients.

### Wholly owned subsidiary (E1, E2, E3)

A wholly owned subsidiary can be established in a foreign market in two ways: set up a new operation in that country; or acquire an established firm. With China's WTO membership, it has permitted wholly foreign owned AEC enterprises to be set up in China. However, there is non-national treatment such as restricting these firms to projects funded by foreigners and multi-lateral international financial organizations. The Chinese government has committed to abolishing these non-national treatment restrictions by 2005 (Ministry of Foreign Trade and Economic Cooperation, 2002).

This study found that foreign construction firms do not favour mergers and acquisitions (E3), while consultancy firms do. This is consistent with the practice of

**Table 3** Characteristics of interviewee-practitioners

| Ref | Designation            | Home country | Experience in industry | Experience in China | Project type in China  | Services provided by interviewees' firm in China          |
|-----|------------------------|--------------|------------------------|---------------------|------------------------|---|
| US1 | Senior Project Manager | USA          | 15 years               | 10 years            | Manufacturing facility | Engineering design and prime contractor                   |
| US2 | CEO                    | USA          | 50 years               | 12 years            | Transportation         | Engineering design  |
| US3 | President              | USA          | 30 years               | 22 years            | Building               | Architectural and engineering design                      |
| SG1 | Senior Vice President  | Singapore    | 28 years               | 5 years             | Building               | Full consultancy and management services                  |
| SG2 | Deputy CEO             | Singapore    | 26 years               | 5 years             | Building               | Full consultancy and management services                  |
| SG3 | Managing Director      | Singapore    | 28 years               | 12 years            | Petroleum              | Engineering design and subcontractor                      |
| SG4 | General Manager        | Singapore    | 16 years               | 11 years            | Building               | Prime contractor  |
| SG5 | Director               | Singapore    | 14 years               | 13 years            | Building               | Prime contractor  |
| SG6 | Executive Director     | Singapore    | 20 years               | 10 years            | Building               | Quantity surveying  |
| HK1 | Manager                | Hong Kong    | 10 years               | 10 years            | Building               | Architectural and engineering design and prime contractor |
| HK2 | Director               | Hong Kong    | 23 years               | 11 years            | Building               | Quantity surveying  |
| HK3 | Project Manager        | Hong Kong    | 10 years               | 9 years             | Building               | Real estate development and project management            |
| HK4 | Business Manager       | Hong Kong    | 24 years               | 17 years            | Manufacturing          | Prime contractor  |

**Table 4** Survey results of market entry modes

| No  | Market entry mode adopted and its effectiveness in achieving success                     | Overall ( <i>n</i> =32) |       |         |        | Contractors ( <i>n</i> =15) |       | Consultants ( <i>n</i> =17) |        |
|-----|--|-------------------------|-------|---------|--------|-----------------------------|-------|-----------------------------|--------|
|     |  | <i>N</i>                | Mean  | T-value | Sig.   | Mean                        | Sig.  | Mean                        | Sig.   |
| 1   | 2  | 3                       | 4     | 5       | 6      | 7                           | 8     | 9                           | 10     |
|     | Wholly owned subsidiary  |                         |       |         |        |                             |       |                             |        |
| E1  | Set up a branch office in China  | 19                      | 5.105 | 2.447   | 0.012* | 4.667                       | 0.131 | 5.500                       | 0.031* |
| E2  | Set up a new subsidiary firm in China  | 19                      | 5.579 | 3.880   | 0.001* | 4.818                       | 0.085 | 6.625                       | 0.000* |
| E3  | Merged with or acquired a firm in China  | 11                      | 4.455 | 0.713   | 0.246  | 3.000                       | 0.851 | 5.667                       | 0.021* |
|     | Equity JV  |                         |       |         |        |                             |       |                             |        |
| E4  | Set up a new firm by JV with a Chinese firm (equity JV)                                  | 11                      | 4.545 | 0.971   | 0.177  | 3.833                       | 0.579 | 5.400                       | 0.054  |
| E5  | Set up a new firm by JV with another firm from home country (equity JV)                  | 9                       | 3.889 | -0.155  | 0.560  | 2.750                       | 0.880 | 4.800                       | 0.228  |
| E6  | Set up a new firm by JV with an international (non-home country) firm (equity JV)        | 11                      | 4.273 | 0.404   | 0.347  | 3.500                       | 0.702 | 5.200                       | 0.142  |
|     | Project JV   |                         |       |         |        |                             |       |                             |        |
| E7  | Undertook the project jointly with a Chinese firm (project JV)                           | 14                      | 5.143 | 2.232   | 0.022* | 4.167                       | 0.436 | 5.875                       | 0.001* |
| E8  | Undertook the project jointly with another firm from home country (project JV)           | 11                      | 4.636 | 1.075   | 0.154  | 3.800                       | 0.593 | 5.333                       | 0.079  |
| E9  | Undertook the project jointly with an international (non-home country) firm (project JV) | 10                      | 4.200 | 0.294   | 0.388  | 2.750                       | 0.929 | 5.167                       | 0.119  |
|     | Other alliances  |                         |       |         |        |                             |       |                             |        |
| E10 | Formed alliances with financial institutions   | 10                      | 4.300 | 0.410   | 0.346  | 2.000                       | 0.992 | 5.833                       | 0.014* |
| E11 | Formed an alliance with the home country client who invested in China                    | 12                      | 4.667 | 1.232   | 0.122  | 3.200                       | 0.853 | 5.714                       | 0.008* |
| E12 | Formed an alliance with the Chinese client   | 13                      | 4.538 | 1.074   | 0.152  | 3.167                       | 0.929 | 5.714                       | 0.008* |
| E13 | Formed an alliance with the foreign client who invested in China                         | 15                      | 4.800 | 1.740   | 0.052  | 4.000                       | 0.500 | 5.500                       | 0.005* |

\*Strategy is effective at 0.05 significance level.

interviewee US3's firm (US firm no.3 in Table 3) which provides AE design services. Interviewee US3 said that his firm would only acquire local Chinese firms if it does not possess a certain skills set. Therefore, its choice of strategy is based on first identifying

what it lacks, and then deciding how to fill this gap. International contractors avoid acquisition because it is very costly and risky, and there are additional problems such as trying to marry divergent corporate cultures (Hill and Jones, 1995).

The results in Table 4 show that setting up wholly owned foreign subsidiaries, either as branch offices (E1) or newly incorporated subsidiaries (E2), is a strategy that has a good chance of success. Companies that operate in this mode must bear all the risk associated with operating abroad, and must bear more costs because it is a much more expensive mode than others due to a higher level of foreign investment and presence of more threats (Hood and Young, 1979). As can be seen from Table 4 (items E1 and E2), this is also the most commonly used entry mode. There appears to be a contradiction here, whereby AEC firms more commonly use the most risky mode of entry.

Interviewee US1 revealed that his firm enters the China market alone, without forming JVs because it is one of the world's biggest constructor of manufacturing facilities. US2 advocated operating alone, without any direct involvement from other companies, because his firm receives all of the rewards. In addition to keeping all the profits himself, this executive felt that the risks were lower because the firm has control over all aspects of the foreign subsidiary's operations. This mode also affords tighter control over proprietary technology and know-how, which is especially useful to knowledge-intensive AEC.

When there is no regular flow of projects, firms prefer to set up a branch office in China (SG1, SG2 and SG6). The branch office in China indicates to clients that they can count on the well-established parent firm, instead of a small, recently incorporated China-based firm. It gives clients confidence, but also makes it riskier for the foreign firm.

From the findings, it can be generalized that firms that are expanding overseas should set up an international division or branch within its organization structure to undertake international work. By doing this, they can realize location and experience curve economics. Once more business is obtained, they can proceed to set up wholly owned subsidiary firms that have their own legal entities. The implication is that the risk exposure to the parent firm is limited.

#### **Joint ventures (E4, E5, E6, E7, E8, E9)**

When entering the international market, a foreign firm may set up an equity JV or a project JV. In the light of China's entry into the WTO in December 2001, foreign investors will be officially allowed to set up Sino-foreign joint ventures (Ministry of Foreign Trade and Economic Cooperation, 2002).

This study showed that it is effective for foreign consultants to form project JVs with Chinese firms (E7). The lesson learned from interviewee US3's joint ventures with Chinese firms is that it was able to reduce

its risks and improve its knowledge of China's market by learning from the JV partner and being led by them.

HK1 stressed that the JV partner should be selected carefully, and should preferably have influence on the host government to avoid government interference. The local Chinese partner need not have technological superiority, but should know the local market (cheaper labour and materials, for instance) and regulatory conditions. SG6's firm look for partners that can create synergy and win-win situations.

The study revealed that JVs are not effective for contractors. One possible reason that foreign construction firms do not form JVs readily is because the union may not be profitable. The shared ownership may lead subsequently to conflicts and battles for control between the investing firms (Inkpen and Beamish, 1997; Park and Ungson, 1997). There are also problems with enforcing contracts.

Unlike what was proposed by Neo (1976), this study did not find it effective to form project JVs with a firm from the home country (E8) or another international firm (E9). This further attests to the importance of having local partners to react to pressures for local responsiveness (Prahalad and Doz, 1987).

From the finding, it can be generalized that consultants should form project JVs with Chinese firms. The advantages to foreign firms include: reduce risks and access to superior technology (Sridharan, 1998); tapping of a local partner's knowledge of the host country's competitive conditions, culture, language, political systems and business systems (Kogut, 1988); lowering of development costs and risks by sharing these with the local partner; and lowering of government interference risk (Bradley, 1977).

The lesson learned is that consultancy firms need not have their JVs formally incorporated into new companies. Project JVs are more advantageous than equity JVs because they can be set up quickly, and dissolved at the end of the project without incurring high exit costs such as corporate liquidation.

#### **Other forms of strategic alliances (E10, E11, E12, E13)**

Table 4 shows that other forms of strategic alliances (E10-E13) are effective in helping foreign consultants achieve project success. Consultants that form strategic alliances with clients from their home countries have the additional benefit of having the same cultural background, which lessens the differences in management style. With long-term alliances, consultants and clients have also built the necessary trust between them, further facilitating a smooth project implementation (Khanna *et al.*, 1998).



The results show that consultants who form alliances with home-country clients who invest in China (E11) do well ( $p=0.008$ ). This concurs with interviewees US2 and US3's firms which formed alliances with US clients to enter China's market. US2 has specialized geo-technical engineering skills and would be engaged by US contractors to solve a specific part of their design problems. US3 monitors its US clients who are expanding overseas, and then markets itself to the parent company in US and also the client's branch office in China. The advantages of entering China with US clients are the smaller developmental costs, lessened risks and faster payments. HK1 shared that many Hong Kong clients who enter China will try to award projects to Hong Kong firms, even when their bids are not the lowest. This creates a possibility for future relationships among the Hong Kong firms through the strategic alliance.

SG2's firm forms strategic alliances with any suitable world class firm, regardless of whether it is a Singapore, Chinese or foreign firm. SG4 formed strategic alliance with the Chinese government. This turned out to be a good move because SG4's interests were well protected and it did not face any bribery and corruption problems that other firms faced.

This study found that these loose forms of strategic alliances are not effective for foreign contractors (Table 4). This may be because contractors are generally selected based on their bids and track record, instead of their alliances.

It can be generalized that consultancy firms should try to form alliances with clients to enter China together. The main implication is that a shift in mindset is necessary. Instead of waiting for the 'Request for Proposal' consultancy firms should be proactive, marketing themselves to form the alliances with clients.

### Business strategies adopted in China

Table 5 shows the results regarding the business strategies adopted by the respondents. All the respondents ( $n=32$ ) pursued two strategies: provided speciality or niche product or service (B1.1); and built network and contacts in China (B4.2). Among the 22 possible business strategies shown in Table 5 (columns 3–6), all but three were perceived to be effective in helping the project achieve success at  $p<0.05$ . The three ineffective strategies relate to project financing (B3).

Compared to foreign consultants, there appears to be fewer strategies for foreign contractors (columns 7–8, Table 5) that are perceived to lead to project success. For example, employing Chinese citizens to manage

the project (B2.2), obtaining political backing (B4.1), and undertaking structured studies (B1.8) and research and development (R&D) (B1.9) did not bring about project success to contractors but were perceived to bring success to consultants.

Nineteen of the 22 strategies are effective in contributing to foreign consultants' project success (columns 9–10, Table 5). The results show that consultants preferred to use their in-house expertise instead of procuring globally for engineers and architects (B2.1) (mean=5.143,  $p=0.061$ ). They also avoided providing project financing (B3.1) and taking equity in the project (B3.3).

### Services and products offered

The results in Table 5 show that it is very important to offer niche/speciality products or services (B1.1), and these must be of superior quality (B1.2). The interviewees agreed with this finding. Firms may also differentiate themselves by completing projects in shorter times (B1.3) and providing packaged or integrated services (B1.4). The findings show that AEC firms need to adopt Porter's (1980) differentiation strategy when undertaking international construction. Interviewee US2 emphasized that foreign AEC firms should find something special to offer to China. SG2's firm exports its core competency, which it identified as providing clients with one-stop consultancy service covering the entire value chain. SG3 also emphasized the need to have very strong core competency. General competency is not good enough to survive in China.

HK1 felt that foreign firms should be able to offer new ideas and management superiority. He is not for selling of technology for two reasons: China has most of the technology in place and it does not need a high level of mechanization because it needs to create employment for its huge (low-cost) population.

SG4's view is that foreign construction firms should offer project management services rather than undertake physical construction work. This is because foreign firms are seldom able to compete with the Chinese contractors who have low cost advantages.

Unfortunately, not all construction firms are able to differentiate themselves, and competition is based mainly on price. Also, having superior quality may attract higher cost, leading to reduced competitiveness. The results show that, to be successful, AEC firms need to be able to establish price competitiveness (B1.5). This reinforces Porter's (1980) advocacy of low-cost strategy. Taken together, the results show that AEC firms need to have overall competitiveness (B1.6). It is an onerous task to implement both differentiation and low-cost strategies.

**Table 5** Survey results of business strategies to manage projects successfully

| No   | Business strategies adopted and their effectiveness in achieving success | Overall (n=32) |       |         |       | Contractor (n=15) |       | Consultant (n=17) |       |
|------|--|----------------|-------|---------|-------|-------------------|-------|-------------------|-------|
|      |  | N              | Mean  | T-value | Sig.  | Mean              | Sig.  | Mean              | Sig.  |
| 1    | 2  | 3              | 4     | 5       | 6     | 7                 | 8     | 9                 | 10    |
| B1   | Services and products offered  |                |       |         |       |                   |       |                   |       |
| B1.1 | Provide specialty/niche service/product                                  | 32             | 6.188 | 12.822  | 0.000 | 5.867             | 0.000 | 6.471             | 0.000 |
| B1.2 | Provided superior product/service  | 31             | 6.258 | 12.586  | 0.000 | 5.929             | 0.000 | 6.529             | 0.000 |
| B1.3 | Reduced project time scale   | 23             | 5.043 | 3.970   | 0.000 | 4.857             | 0.017 | 5.333             | 0.004 |
| B1.4 | Provided packaged/integrated services                                    | 24             | 5.792 | 7.224   | 0.000 | 5.786             | 0.000 | 5.800             | 0.000 |
| B1.5 | Established price competitiveness (compete based on price)               | 25             | 5.240 | 3.518   | 0.001 | 5.214             | 0.009 | 5.273             | 0.028 |
| B1.6 | Established overall competitiveness                                      | 26             | 5.462 | 5.588   | 0.000 | 5.214             | 0.001 | 5.750             | 0.001 |
| B1.7 | Paid great attention to customer/client satisfaction                     | 31             | 6.290 | 14.144  | 0.000 | 6.286             | 0.000 | 6.294             | 0.000 |
| B1.8 | Undertook structured studies of China before entry                       | 25             | 4.920 | 3.071   | 0.003 | 4.364             | 0.220 | 5.357             | 0.001 |
| B1.9 | Invested in R&D relating to the project or China                         | 21             | 4.905 | 2.740   | 0.006 | 4.286             | 0.345 | 5.214             | 0.002 |
| B2   | Procurement policies   |                |       |         |       |                   |       |                   |       |
| B2.1 | Procured globally  | 19             | 5.000 | 2.788   | 0.006 | 4.917             | 0.034 | 5.143             | 0.061 |
| B2.2 | Employed Chinese citizens to manage the project                          | 20             | 5.100 | 4.067   | 0.000 | 4.667             | 0.098 | 5.455             | 0.000 |
| B2.3 | Posted management staff from head office to manage the project           | 27             | 5.889 | 9.037   | 0.000 | 5.857             | 0.000 | 5.923             | 0.000 |
| B2.4 | Employed professional staff from China                                   | 24             | 5.417 | 6.309   | 0.000 | 5.000             | 0.004 | 5.909             | 0.000 |
| B2.5 | Posted professional staff from head office                               | 26             | 5.538 | 7.107   | 0.000 | 4.917             | 0.004 | 6.071             | 0.000 |
| B2.6 | Engaged subcontractors from China  | 21             | 5.476 | 5.247   | 0.000 | 5.571             | 0.000 | 5.286             | 0.024 |
| B2.7 | Head office provided good support to this project                        | 30             | 5.900 | 6.967   | 0.000 | 5.143             | 0.018 | 6.563             | 0.000 |
| B3   | Project financing  |                |       |         |       |                   |       |                   |       |
| B3.1 | Provided project financing services                                      | 12             | 3.500 | -0.565  | 0.702 | 3.800             | 0.611 | 3.000             | 0.885 |
| B3.2 | Structured a financing package   | 12             | 4.750 | 1.682   | 0.060 | 3.600             | 0.762 | 5.571             | 0.009 |
| B3.3 | Took an equity in the project  | 12             | 3.917 | -0.143  | 0.556 | 3.000             | 0.885 | 4.571             | 0.254 |
| B4   | Networking   |                |       |         |       |                   |       |                   |       |
| B4.1 | Obtained political backing   | 15             | 4.933 | 2.288   | 0.019 | 4.000             | 0.500 | 5.556             | 0.002 |
| B4.2 | Built network and contacts in China                                      | 32             | 5.313 | 7.440   | 0.000 | 5.200             | 0.000 | 5.412             | 0.000 |
| B4.3 | Became a member of a consortium in China                                 | 16             | 5.188 | 3.230   | 0.003 | 5.000             | 0.031 | 5.333             | 0.025 |

Note: italics indicates strategy is not effective at 95% confidence level.

AEC firms must also pay great attention to customer satisfaction (B1.7) such as meeting time, cost and quality objectives. SG2 also emphasized the importance of focusing on satisfying the client. There is a need to provide the client with good experience by meeting project delivery goals. Staff are urged to develop client relationships, so as to ensure the next project. SG2 tries to build a strong rapport with clients through the art of positive relationship, mutual respect and sincerity. To achieve these goals, SG2's firm trains its architects and engineers to have a good attitude and on how to create a positive client relationship. Their training sessions include subjects such as: how to

deliver the promise of excellent service; how to enhance client experience and expectation; understanding client culture; and a reminder that the client has the freedom and power to choose from many consulting firms.

Previous studies have found that it is important to undertake structured studies before entering a market (B1.8) (Quak, 1991) or to invest in R&D relating to the project or host country (B1.9). This study found these activities to be important for foreign consultants' success but not for contractors. Interviewee HK1 said that by the time structured studies are conducted, the business opportunity may be missed. HK3 concurred with this and divulged that some of his company's deals

were made over karaoke sessions and dinner. There was no time to obtain lawyers and auditors to conduct due diligence. He claimed that being too cautious means being too slow and having limited success. Foreign firms need to be flexible and daring.

Consistent with the results that show foreign consultants should undertake structured studies (B1.8), US3 confirmed that his firm undertook an extensive background search of China, the client and the project before agreeing to take up the project. His company emphasizes identifying the actual people controlling the market/industry and forming personal relationships with them.

From the findings, it can be generalized that foreign AEC firms need to offer niche product or service at competitive prices. One way to achieve this is to produce 'cheap and good' products through the process of disruptive innovation suggested by Christensen (1997).

### Procurement policies

This study found that effective procurement strategies include posting managers (B2.3) and professionals (B2.5) from the home country to execute the project. This means setting up permanent and physical offices in China. HK2 observed that there are some foreign firms that manage China projects by 'auto-pilot, remote control and flying visits'. He felt that it is very important to have staff stationed in China so that they are familiar with the territory, have a sense of what is achievable and not achievable, and have a good feel of China so that they can make decisions quickly. Having a physical office in China allowed SG2 and SG6 to develop a good understanding of local by-laws; understand client requirements better; be more responsive and close to clients; demonstrate long-term commitment (as opposed to a hit-and-run opportunistic operation); and establish their brand names in China.

HK1 cautioned that the posting needs to be more permanent in nature so that the managers work towards long-term goals. If they know that they are posted to China for two to three years only, they may take a short-term view or 'hold the fort' just to make sure there is no trouble under their watch.

This study found that head office must provide strong support (B2.7) for the projects in China to succeed. Interviewee US1 articulated that his firm could succeed in China because it is 'hungry enough', leading the top management to be committed in projects in China. It shows its commitment by sending the best people for its China ventures. SG2's firm presents its strongest candidates to compete with the best in the world for a project in China, instead of sending the second best.

This study found that foreign AEC firms also engage Chinese design architects and engineers (B2.4) and subcontractors (B2.6). US2 found that the Chinese engineers are well educated and understand many of the recent technologies. Some have fixed ideas about how a structure should be designed. US2 said that he would not try to change their designs unless they are unsafe. Even then, he would be very diplomatic about it.

This study found that it is not effective for international contractors to employ Chinese citizens (B2.2) to *manage* projects at this time. This corresponds with the interviewees' remark that China has some way to go to improve on the management aspects in all sectors. SG6's firm stations a manager from Singapore and this person must be chosen carefully, to ensure that he or she can provide continuous support to clients in China.

From the findings, it may be generalized that foreign firms should post management staff from home countries to manage the projects, but use professional staff from China and Chinese subcontractors to execute the projects. The implication of these findings is that firms need not pay expensive allowances to *professional* staff from the head office to be relocated to China to execute the project. The lesson learned is that international AEC firms should also apply an effective 'localization strategy' by engaging local subcontractors (B2.6). The importance of engaging subcontractors from the host country highlights the nature of international construction whereby many of the services are supported by the domestic construction industry of the host country.

### Project financing

Table 5 shows that providing project financing does not lead to project success, except when foreign consultants help to structure a financing package (B3.2). This means that the consultant must be on board early in the project (Quak, 1991).

While many studies have been conducted on the advantages of taking an equity position in a project through BOT or other such arrangements (Wang *et al.*, 2000), this study found that taking equity in projects (B3.3) may not lead to project success. Tiong and Yeo (1993) found very few Singapore contractors that are able to take equity in infrastructure projects. This is not surprising as AEC firms' main business is in design and construction, and not owning and operating projects. They are therefore doing the right thing by concentrating on their core competence (Hamel and Prahalad, 1994).

From the finding, it is generalized that foreign AEC firms should not be offering project financing or take an equity in China's projects. Instead, international consultancy firms should be able to help clients *structure* a

financing package for projects in China. Infrastructure projects that require long-term finance should be funded by the Chinese government or international funding agencies (e.g. World Bank, Asian Development Bank), rather than international AEC firms due to the high risks involved.

### Networking

Table 5 shows that building networks and contacts in China is important to ensure project success (B4.2). Networking may be strengthened by becoming a member of Chinese consortium (B4.3). Businesses in China need to form *guanxi*, which means networking, relationship or personal connection (Yeung and Tung, 1996), and stress personal relationship, trust, reciprocity and longevity. Guanxi is able to enhance reputation, power and influence for effective business relationships (Westwood and Chua, 1992). SG1 said that guanxi is an important strategy, but foreign firms need to form connections with the right people.

Interviewee HK1 said that networking should not be confined to those between foreign AEC and Chinese firms. He observed that Hong Kong firms network with each other as well to share information so that there is no need to 'learn from scratch' or reinvent the wheel.

This study also showed that obtaining political backing (B4.3) did not help international contractors achieve project success. This may be because projects are usually awarded to those who submitted low bids.

From the findings, it is generalized that networking with the right people is an important business strategy in China. This is because networks of contacts provide access to people and information of potential value.

### Conclusion

The major finding of this study is that the main market entry mode for international AEC firms that undertake construction in China is setting up wholly owned foreign subsidiaries. The implication is that AEC firms that are planning to export their services to China should begin by setting up an international division within their organization structures. When more projects are secured they could proceed to constitute subsidiary firms in China, to reduce the risk exposure of the parent company in the home country.

This study found that one of the more effective market entry modes is the formation of project JVs between the foreign AEC firm and a local Chinese firm. Foreign AEC firms usually provide superior technology while local firms provide local knowledge and connection. This combination helps project JV to gain competitive advantage.

This study is also important because it identified which entry modes should not be employed because they are less effective in China. For example, equity JVs, mergers and acquisitions should be avoided, as these entail complying with more legal and regulatory requirements.

Another contribution of this study is the identification of the more effective business strategies to be adopted when international firms undertake projects in China. The most significant finding is the need to adopt both the differentiation strategy and low-cost strategy. While this finding questions Porter's (1980) theory that firms must choose only one of the two strategies (differentiation strategy or low-cost strategy), it is possible that the theory does not apply to the construction industry. By observing the behaviour of AEC firms, it can be seen that they must bid low (low cost strategy) to clinch the project first, and then build according to specifications, which inevitably include high quality requirements (differentiation strategy).

One recommendation for AEC firms is to innovate so that they can be more cost competitive and at the same time deliver high quality. This can be achieved using Christensen's (1997) disruptive innovation methodology. According to this theory, companies should undertake disruptive innovation to further develop their core competence to help them to gain competitive advantage in the very competitive Chinese market. They can do this by not trying to change the customer, but helping them, and integrating across whatever interface that drives performance along the dimension that customers value (Christensen *et al.*, 2003).

One of the limitations of this study is the small number of responses received. This limitation is somewhat addressed by complementing the statistical results with in-depth interviews to verify the survey findings. As the paper focused on the statistical results, other richer information relating to the interviewees' projects were not reported in this paper.

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