

# Critical success factors for international education marketing

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This paper draws on the findings of a survey of 315 education institutions from Australia, Canada, New Zealand, the UK and the USA. Respondents were asked to rate their institutions' overall performance on a series of 17 items that an examination of the literature and previous in-depth interviews identified as being critical to the success of education institutions seeking to market themselves internationally. A factor analysis of these items identified four underlying dimensions. Promotion and Recruitment, Image and Resources, People and Culture and Coalition and Forward Integration. The relative success of these institutions was then measured using a scale consisting of four indicators relating to: growth in enrolments, demand, short to medium-term outlook and financial benefits. A logistic regression model was then constructed to identify which of these success factors were possible determinants of institutional success. Two factors, Image and Resources, and Coalition and Forward Integration were found to be significant predictors of market success.

## The economic importance of international education

The decades of the 1970s and 1980s witnessed a rapid expansion of the services sector within most industrialised countries (Blois, 1974; Plunkert, 1990). For example, in the period 1969-70 the services sector of the Australian economy contributed 54 per cent of gross industry product. This had grown to 63 per cent by 1984-86 (Clark, 1988, p. 61). In 1992 the services sector contributed over 66 per cent of GDP and accounted for about 78 per cent of all employment (ACIIC, 1993). This is a situation common to the US, Japan, Canada, the UK and Germany, where between 60 and 70 per cent of all employment is absorbed by the services sector (Dunning and Kundu, 1995).

One of the more significant service industries that emerged in the 1980s and 1990s is international education. The contribution of international education to the Australian economy can be gauged by an assessment undertaken by the Department of Employment, Education and Training (DEET, 1993). This estimated the international education of full-fee paying overseas students (FFPOS) had generated \$1.4 billion in tuition fees and living expenses, which placed it close to wheat (\$1.5 billion) as an export earner (Strickland, 1995, p. 46). By 1995 the official value of export income from overseas students to Australia was \$1.9 billion. In the same year international education accounted for 9 per cent of Australia's total service exports compared with less than 3 per cent in 1985 (Mazzarol *et al.*, 1996).

According to the Western Australian Department of Commerce and Trade, in 1992 international education in the state involved 275 institutions, provided employment for 3,786 people and generated around \$100 million in revenues (DCT, 1993, p. 22; Rowe, 1995, p. 412). Further, the international education industry in Western Australia had experienced employment growth over a five-year period of 27 per cent, and was comparable to mining, agriculture and forestry as an industry successful in generating export income (Rowe, 1995, p. 415).

This is a pattern that has been experienced in other countries. For example, according to the Government of Canada in 1991 international students contributed an estimated C\$1.5 billion to the Canadian economy and generated approximately 19,000 jobs for Canadians (MSS, 1993). The USA, which is host to the majority of the world's international students, has estimated that its universities and colleges generated a trade surplus of \$6 billion in 1993 comprising about 10 per cent of the total US services trade surplus (Evans, 1995). In addition to the revenues generated directly from tuition fees, a further \$3.6 billion is injected into the USA economy from international student spending on accommodation, food and other items (Scott, 1995).

## The nature of education as a marketable service

Despite the importance of services to national economies they have tended to be ignored or overlooked, due largely to their intangible nature (LEK, 1994, p. 18). Prior to the 1960s and 1970s services marketing was not distinguished as a separate field of investigation (Berry and Parasuraman, 1993; Fisk *et al.*, 1993). One reason given for this is the difficulty associated with the classification of services. As noted by Lovelock (1991, p. 25): "Basically the range of services is too broad to allow meaningful, in-depth analysis of the entire field".

Fisk *et al.* (1993) have traced the development of services marketing research. The traditional treatment of services in business and economic literature was to ignore them as intangibles useful only in supporting the marketing of goods. However, as the importance of services within most national economies grew during the decades following the Second World War, the level of interest in services as a distinct field of study increased (Berry and Parasuraman, 1993). During the past 20 years the level of interest in services marketing has increased, driven to a large extent by the increasing importance of service industries in most economies (Fisk *et al.*, 1993).

Absent from this research into services has been an extensive examination of education as a specific marketing problem. Like many other "professional services" education has tended to eschew marketing (Morgan, 1991). Despite this neglect, education remains a service capable of treatment as any other in terms of marketing theory. In doing this, an important starting-point is the classification of education as a marketable service.

Lovelock (1983) has offered a useful conceptual foundation for research into services marketing. This involves five criteria, each of which is examined on four dimensions. Using this framework it is possible to describe education services as having the following characteristics:

- 1 *The nature of the service act.* The education service act is directed at people (their minds rather than their bodies). It is primarily "people based" rather than "equipment based" (Thomas, 1978), and involves largely intangible actions (Shostack, 1977).
- 2 *The relationship with the customer.* Education involves a lengthy and formal relationship with the client and a continuous delivery of the service. Students have what Lovelock (1983) refers to as a "membership" relationship with the service provider. This offers the service provider an opportunity to develop strong client loyalty and enhanced client service features.
- 3 *The level of customization and judgement in service delivery.* Some services require greater customization and judgement on the part of service providers than others. The extent to which education services are customized is variable. Small tutorials or individual supervision are obviously more highly customized than mass lectures. In most cases the extent to which the service provider exercises judgement in meeting the needs of individual students is high. This is particularly the case with teaching staff. A problem arising from this is the possibility that quality can be affected due to variability of service delivery (Nicholls, 1987).
- 4 *The nature of demand relative to supply.* A service can involve a wide spread demand (e.g. electricity) or a narrow one (e.g. insurance). At the same time the ability of services to be increased quickly to meet fluctuations in demand can vary. While electricity services can be increased fairly quickly to meet peak demands, hotel accommodation is more difficult to regulate. In education the demand is subject to relatively narrow fluctuations over time, yet supply is sometimes difficult to

manage, with limitations placed on availability of staff and places in courses.

- 5 *The method of service delivery.* Delivery of services may also be classified into those requiring either single or multiple site outlets, and the nature of the customer interaction with the service. Customers may either move to the service provider, or the service provider can move to meet them. International education services traditionally involve the student coming to the institution to complete their courses. However, this is changing, with the establishment of offshore teaching programs and distance education (Soutar and Mazzarol, 1995). Modern technologies have also enabled remote service delivery (Hamer, 1993).

In a comprehensive examination of the services marketing literature, Zeithaml *et al.* (1985) identified four primary characteristics of services:

- 1 intangibility;
- 2 inseparability of production and consumption;
- 3 heterogeneity; and
- 4 perishability.

All of these can be found in education. Each produces problems that must be overcome by deliberate marketing strategies.

Intangibility is a major distinguishing feature of services, but applies particularly to education where the specific nature of the service offering is difficult to define. One of the effects of intangibility is that services cannot be stored (Sasser, 1976; Berry, 1980). For education institutions this can pose problems through either overcrowding or a lack of capacity. Intangibility also creates difficulties for the protection of services through patents (Judd, 1968). This is a major problem facing many services within international markets, particular in Asia (LEK, 1994, p. 98). Intangibility also makes it difficult to easily display or communicate services to the customer (Rathmell, 1966). This has been a problem for the promotion of Australian international education, which has received criticism in the past for supplying insufficient detail and taking a glossy "touristy" approach to publicity materials (AGB, 1992). Further, the setting of prices in many service industries is made more difficult by intangibility (Dearden, 1978; Thomas, 1978). Fee setting within international education has been one of the more contentious issues (Harris and Jarrett, 1990).

The difficulty in separating production from consumption in services poses additional problems. One of the principal outcomes of this aspect of services is the need to involve the customer in the production of the

service (Booms and Nyquist, 1981). This is particularly the case with education, where student participation in their learning process is a critical factor in determining success (Shuell and Lee, 1976, pp. 4-9). Another aspect of this same problem is the likelihood that more than one consumer will be involved together in the production of the same service (George, 1977; Gronroos, 1978). Education has long been undertaken within a group and has been viewed as an important cultural transmission process (Singleton, 1974). Most education institutions are "socialising organisations", designed to process large groups of people (Brim and Wheeler, 1966, p. 57). This concentration of students into mass lectures or large classes with common "core curricula" is an endeavour by institutions to overcome another problem facing services - the difficulty of centralising production (Upah, 1980). Unfortunately, high student-teacher ratios do little for the development of quality learning outcomes due to the individual differences between peoples' learning behaviours (Riding, 1977, pp. 111-29).

The heterogeneity of services poses significant problems in the area of quality control and standardisation (Berry, 1980; Booms, and Bitner, 1981). Quality management within education is a major focus of attention for countries such as Australia, France, the UK and USA (Baldwin, 1991; Marceau, 1993; Harman, 1994; Lindsay, 1994; Edmond, 1995). Finally, the perishability of services means that they cannot be placed into inventory and thereby creating the problem of under or over supply (Sasser, 1976).

### Critical success strategies for marketing international education

The special characteristics of education described above create additional problems for institutions attempting to recruit offshore. Education institutions seeking to achieve success in international markets must undertake a range of activities designed to attract prospective students from around the world. For many students and their families, the decision to study overseas is one of the most significant and expensive initiatives they will have ever undertaken. Further problems may arise as a result of differences between various target markets, for example Indonesia is quite different to Japan.

Perhaps as a result of this the marketing of an education institution within international markets requires both sensitivity and sophistication. Relatively little has been written on the marketing of education within international markets (Altbach *et al.*, 1985; Altbach

and Wang, 1989; Smart and Ang, 1992b). It is therefore difficult to apply any ready-made strategies or solutions to the problems facing institutions in their marketing activities.

An examination of the literature relating to services marketing and competitive advantage, as well as discussions with a panel of experts located within the international offices of several Australian universities, identified 17 factors critical to the success of education institutions operating in international markets. These "critical success factors" are examined in the following subsections.

### Quality of reputation, and level of market recognition/profile

These two factors have been highlighted in several studies as being important to the development of competitive advantage (Aaker, 1989; 1991; Hall, 1992; 1993). They are not identical to each other although they are closely related. In marketing education the success of Ivy League institutions, for example, is linked to their image and reputation regardless of their teaching quality (Huber, 1992). Aaker (1989) found that managers of service enterprises ranked a "reputation for quality" and "name recognition/high profile" as significant sources of competitive advantage.

### Possession of international strategic alliances or coalitions

The importance of possessing international strategic alliances or coalitions has featured in the literature as a source of competitive advantage. Porter and Fuller (1986) note the importance of coalitions to international marketing. The primary benefits of coalitions being the ability to gain: "economies of scale"; "access" (to distribution channels, capital, local knowledge etc.); "reduction of risk"; and the ability to shape competition. Coalition activity can be a source of competitive advantage (Dunning and Pearce, 1985; Ohmae, 1985). The evidence of this is suggested by the recent growth in coalition activity among education services exporters (Scott, 1994). Within the international business community the trend has been toward the formation of strategic alliances, although care needs to be taken to ensure that the nature of the alliance is clearly understood with performance benchmarks established (Pekar and Allio, 1994).

### Possession of offshore teaching programs, and recruiting offices

The inseparability of production and consumption increases the need for international services exporters to integrate forward into the overseas marketing channel and establish "foreign manufacturing facilities" (Nicouland,

1989). Services such as education involve a high degree of “consumer/producer interaction” creating a strong desire for direct control and presence by the producer during the early phases of export development (Vanermerwe and Chadwick, 1989). Erramilli (1991) supports this view. Service exporters prefer to retain a high level of control over their export channel until their experience within the market increases. The degree of forward integration may be a further source of competitive advantage for service enterprises in international markets.

Advice from the expert panel suggested that offshore teaching programs and offshore recruitment offices might also offer a source of competitive advantage to institutions engaged in international education. This was supported by research suggesting that service enterprises were more likely to integrate forward into the export channel due to the inseparability of production and consumption (Erramilli and Rao, 1990). An empirical study using the PIMS data base undertaken by Bharadwaj and Menon (1993) found that forward integration increased the market share of service enterprises and had a significant positive effect on their financial performance.

#### **Quality and expertise of staff**

The ability of institutions to recruit and retain quality staff was examined as a critical success factor. Bharadwaj *et al.* (1993) highlight the importance of organisational learning and expertise as a source of competitive advantage. In the education services industry, for example, students select courses on the reputation of teaching staff (Hughes, 1988). Winter (1987) suggests that organisational learning is a source of competitive advantage if two criteria are met: the learning is “tacit” and not easily copied by competitors, and the knowledge underlying the expertise is complex (thus making imitation difficult).

#### **Organisational culture**

The role of culture in enhancing organisational performance has been widely supported in the literature (Peters and Waterman, 1982; Barney, 1986), in particular the need to develop a customer oriented service culture (Gronroos, 1990). This was examined as a potential critical success factor. Managing culture for sustainable competitive advantage requires careful attention to be paid to the language and behaviour used within the enterprise, as well as the values and beliefs (Fiol, 1991). The symbols used to define the organisation’s structure and behaviour of its members can also play a decisive role in defining the nature of the culture (Barley, 1983).

#### **Innovation**

The degree to which an enterprise encourages innovation has been viewed as important to developing competitive advantage (McIntyre, 1982; Quinn, 1985, p. 79; Takeuchi and Nonaka, 1986; VanDenVen, 1986). The importance of organisational culture to sustainable competitive advantage has been outlined by Barney (1986) who notes that while culture needs to be firmly based within the organisation, it should also be flexible to encourage innovation. Gronroos (1990) refers to the need for service enterprises to develop customer oriented service cultures in which the organisation chart is inverted and customer and front-line staff become the primary focus. The ability of culture to provide a source of competitive advantage is also linked to its ability to generate strategically valuable innovation via the process of organisational learning (Williams, 1992). A enterprise needs to develop strong core values that emphasize innovation and flexibility in order to develop sustained superior financial performance (Barney, 1986).

#### **Effective use of information technology and technical superiority**

Porter and Millar (1985) have emphasised the importance of information technology to the achievement of competitive advantage. The effective use of information technology was considered as a potential source of competitive advantage. Also examined was the level of technical superiority within the institution. Since the emergence of modern information technology the value of computers to the development of competitive advantage has been highlighted (Gerstein and Reisman, 1982). Information technology has been viewed as offering enterprises the ability to adopt “generic” positioning strategies. Computer aided design (CAD) or computer aided manufacturing (CAM) can assist in achieving cost leadership, while differentiation can be assisted by selected information technologies (Parsons, 1983).

#### **Financial resources**

The importance of financial performance as a source of competitiveness has been highlighted in the literature (Buzzell and Gale, 1987).

#### **Ability to offer a broad range of courses/ programs**

The possession of economies of scope has been suggested as a potential source of competitive advantage in international marketing (Takeuchi and Porter, 1986). Discussions with the expert panel suggested that an institution’s ability to offer a broad range of

courses and programs was a potential source of competitive advantage.

### **Scale effects (strength of alumni and market share)**

Scale economies have been viewed as a source of competitive advantage (Bharadwaj *et al.*, 1993). Within the questionnaire the possession of a strong alumni base, size of student population, size of campus and possession of a large market share measured this.

### **Advertising and promotion**

Whatever the merits of advertising it has not been widely used within education marketing. A survey of international students in Australia found that only some 3 to 8 per cent of respondents (depending upon type of institution attended e.g. university, secondary, ELICOS) claimed mass media advertising to be their main source of information prior to selecting their institution (Harris and Rhall, 1993, p. 46). Perhaps its most significant weakness is the perception that appears to exist among many prospective international students that institutions which advertise cannot be of high quality (AGB, 1992).

Research into the advertising of services emphasizes that it requires a different approach to more conventional products (Bateson, 1979; Zeithaml *et al.*, 1985; Legg and Baker, 1991). It has been suggested that education institutions seeking to make use of advertising need to emphasize their positive qualities via use of testimonials (Danko, 1986). Advertisements that show the prospective consumer how the service will be delivered to them are likely to enhance the differentiation of the service offering and may also assist the consumer's understanding and evaluation of the service (Day, 1992).

### **Use of private recruitment agents**

The use of recruitment agents to promote international education has been one of the more controversial issues within Australia. Some commentators have criticized agents for giving false information and engaging in unethical practices (Davis, 1989). Others have indicated support for agents as a valuable form of promotion (Edwards and Browne, 1991; Smart and Ang, 1992b; Harris and Rhall, 1993). Surveys of international students in Australia support the view that agents are an important source of information. One study found 29 per cent of students surveyed had consulted an agent, and 20 per cent had relied heavily upon their advice (Harris and Rhall, 1993, p. 62). Another study found that nearly half the students surveyed had used agents (DCT, 1993, p. 49).

### **Use of government promotion agencies**

The effectiveness of government information centres is difficult to gauge. A survey of international students in Australia found that 55 per cent had neither used nor heard of the Australian Education Centres (AECs) (located in ten Asia-Pacific capitals) (Harris and Rhall, 1993, p. 52). Another study found AECs recruited only 7 per cent of students sampled compared to 33 per cent from agents (Smart and Ang, 1993, p. 28). These findings were supported by another similar survey undertaken by the Western Australia Government who found their own WA Education Offices (WAEOs) more effective in attracting students to that state (DCT, 1993, p. 49). Nevertheless, a considerable investment is being made by countries such as Australia, Canada, the UK and the USA in establishing and maintaining education information and promotion centres in selected target market countries. Most are professionally run, well resourced and distribute information to a substantial number of prospective students each year (DEET, 1993).

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### **A Survey of institutions**

During 1994 a survey was mailed to 1,255 education institutions in Australia, Canada, New Zealand, the UK and USA. A final usable sample of 315 was produced. The majority of the institutions (82 per cent) were Australian, and the largest group was private secondary schools. Other institutions comprised universities; TAFE colleges, polytechnics; privately owned business colleges; English language Intensive Courses for Overseas Students (ELICOS) centres; air training schools; government schools or institutions; theological colleges and other institutions not classified elsewhere. The sample also comprised 46 per cent of all Australian universities, and 81 per cent of TAFE college systems, 24 per cent of Australian private business colleges and 33 per cent of all ELICOS centres listed in the Commonwealth register of Institutions and Courses for Overseas Students (CRICOS) in 1994. This register lists all Australian educational institutions engaged in the recruitment of full-fee paying overseas students (FFPOS). Of the non-Australian institutions surveyed, 47 per cent had enrolments of over 10,000 students. The majority of these institutions were universities.

The survey was targeted at the international offices and marketing or recruitment managers. Just over half (52 per cent) of respondents listed their function as administration, and 34 per cent as marketing. The majority (75 per cent) had been involved with education for over ten years and the average

length of time in their positions was six years. Seventy-five per cent of respondents said they were frequently involved in planning decisions relating to international marketing for their organisations. This suggests that the sample represent an experienced and relatively expert group.

### Institutional rating of the critical success factors

Institutions were asked to rate their own institution's performance in terms of its international marketing on each of the 17 "critical success factors". The rating for each item was placed on a seven-point scale where 1 = extremely poor performance and 7 = extremely high performance. Table I shows the results of the institutions' responses to these questions.

It can be seen in Table I that the majority of respondents considered their institution's performance was best in the areas of the encouragement of innovation and the quality and experience of staff. These two items were rated significantly higher than the other 15 by the institutions and had mean rating scores of 5.67 and 5.64 respectively.

### Factor analysis of the critical success factors

A factor analysis was undertaken of the 17 "critical success" items. In keeping with the

principal components method, eigenvalues greater than one were selected to determine the appropriate number of factors. A varimax rotation was applied to provide ease of data interpretation. The measure of sampling adequacy for the 17 items was 0.83 indicating that the items were suitable for factoring (Kaiser, 1974; Stewart, 1981). Table II shows the results of this analysis.

The factor analysis of the 17 items found four factors with eigenvalues greater than one, which accounted for 61 per cent of variance. All 17-factor loadings yielded clear results with statistics ranging from 0.54 to 0.84. Five items relating to institutional "Promotion and recruitment" loaded onto the first factor, which was accordingly titled. A further five items, relating to institutional reputation, market profile and strength of finances and alumni loaded onto the second factor which was labelled "Image and resources". Five items relating to internal culture, staffing and use of technology grouped into a third factor, which was labelled "People and culture". The last two items, relating to possession of international strategic alliances and offshore teaching programs, loaded on the fourth factor, "Coalition and forward integration".

### Measures of market success

Measuring success within the international education sector is complicated by a variety of influences. Recruitment success in terms of total enrolments is an unsuitable measure due to the differences that exist between various types of institutions. For example, a university with total student enrolments in excess of 15,000 might consider themselves unsuccessful if they failed to recruit less than 100 international students. However, a private secondary school with international student enrolments of only 75 may view itself as successful, particularly if this is their annual quota set by government policy and they consistently fill it without difficulty.

In order to accommodate these problems a series of five questions were asked which were designed to measure the relative success of the institution in recruiting international students. Respondents were asked to rate their agreement with five statements defining the five success measures. The responses were recorded on seven point scales where 1 = strongly disagree and 7 = strongly agree. Table III shows the nature of these questions. It can be seen from the table that the overall sample did not rate their success particularly high with all mean scores below 5. An examination of the rating

**Table I**

Critical success factors – performance rating by institutions

Success factor	Performance rating total sample means
1 Encourages innovation	5.67
2 Is highly successful at recruiting and retaining quality, experienced staff	5.64
3 Has a high-quality image	5.32
4 Has a strong customer-oriented culture	5.23
5 Makes effective use of information technology	5.20
6 Has strong financial resources	5.19
7 Is technically superior to most in its field	5.15
8 Offers a broad range of courses and programs	4.95
9 Is well known	3.87
10 Has a very strong and active Alumni	3.52
11 Has many international strategic alliances and coalitions	3.06
12 Has a very large overseas student population	2.93
13 Relies heavily on private recruitment agents	2.83
14 Relies heavily on government overseas promotion centres	2.68
15 Has a large overseas advertising and promotion budget	2.59
16 Has many offshore recruitment offices	2.22
17 Has many offshore teaching programs	1.72

Note: 1 = low performance; 7 = high performance

means for different institutional types to the five items was undertaken using an analysis of variance (ANOVA) test. This found no differences between any of the tertiary institutions with the exception of the ELICOS colleges who were more likely to agree with the statement that without overseas student fees they would experience financial difficulties. This is not surprising given that such institutions are wholly dependent upon international students for their survival.

These findings suggest that success is viewed in a similar manner by institutions regardless of their country of origin. Secondary schools were found to be different to their tertiary counterparts which may be explained by the schools not having experienced the same level of growth in international student enrolments as have the

tertiary institutions. Further, the secondary schools appear much less dependent upon international student fees than the tertiary institutions for their financial security. Few of these findings are surprising and reflect the concentration of international student numbers within the tertiary sector of the industry.

### A factor analysis of the success measures

The measure of sampling adequacy for the five items measuring market success was 0.75, suggesting suitability for factor analysis (Kaiser, 1974). The analysis of the five items measuring market success found two factors with eigenvalues greater than 1 which accounted for 70 per cent of variance. The rotated factor loadings yielded clear results, with four of the five items grouping into the first factor, which was labelled "Market success". The remaining item – "without overseas student fees the institution would experience financial difficulties" – loaded onto a second factor which was retained as an independent variable. Table IV shows the results of this factor analysis. A test of the reliability of the factor was undertaken (Cronbach, 1951). The reliability coefficient for the factor was 0.76 suggesting that the factor construct was reliably indicated by the four variables.

No significant difference was found between the Australian and overseas tertiary institutions in their mean rating scores for the factor market success suggesting that country differences could be ignored in further analysis. A significant difference was found between the schools and the universities in their rating of the factor, although this is not surprising given the major flow of fee-paying international students is into the higher education sector.

### Estimation of the logistic regression model

Logistic regression or logit analysis is suitable where a binary or dichotomous dependent variable exists. This procedure estimates the coefficients of a probabilistic model, involving a set of independent variables that best predict the value of the dependent variable. A positive coefficient increases the probability, while a negative value decreases the predicted probability of the outcome being in either of the two dependent variable categories (Hair *et al.*, 1992, pp. 130-1). In predicting the probability of multiple independent

**Table II**

Factors analysis of institutional performance on critical success factors

Factor label	Item	Factor loadings	Mean scores
<b>Promotion and recruitment</b> (alpha = 0.82)	Use of private recruitment agents	0.84	2.83
	Size of overseas advertising and promotion budget	0.77	2.59
	Possession of offshore recruitment offices	0.72	2.22
	Use of government information offices overseas	0.71	2.68
	Size of international student enrolments	0.54	2.93
<b>Image and resources</b> (alpha = 0.74)	Level of market profile or recognition	0.76	3.87
	Strength of financial resources	0.64	5.19
	Reputation for quality	0.63	5.32
	Size and influence of alumni	0.60	3.52
	Range of courses and programs	0.55	4.95
<b>People and culture</b> (alpha = 0.77)	Level of innovation within the institutions' culture	0.80	5.67
	Level of customer orientation within culture	0.77	5.23
	Effective use of information technology	0.68	5.20
	Quality and expertise of staff	0.66	5.64
	Level of technical superiority	0.57	5.15
<b>Coalition and forward integration</b> (alpha = 0.61)	Possession of international strategic alliances	0.78	3.06
	Possession of offshore teaching programs	0.78	1.72

**Table III**

Respondent rating of institutional success rating of questions

Question	Mean rating
The outlook over the next 3-6 years is for continued growth in overseas student numbers	4.33
Growth in overseas student body has regularly been high	3.68
The financial benefits to the institution have regularly exceeded forecasts or expectations	3.22
Demand for places from overseas students regularly exceeds supply	2.85
Without overseas student fees the institution would experience financial difficulties	2.58

Note: 1 = strongly disagree; 7 = strongly agree

variables on a single dichotomous dependent variable the model used is:

$$P(y=1) = \frac{1}{1 + e^{-z}}$$

where:  $z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n$

$x_n$  = a set of independent variables

$\beta_0$  = an intercept term

$b_n$  = a set of parameters for the independent variables

$e$  = the quantity 2.71828+, the base of natural logarithms

$y$  = the dichotomous dependent variable, market success

$P(y=1)$  = the probability of a firm being classified as high or low success.

The factor market success was converted into a dichotomous variable comprising those institutions with low success and those with high success. The mean rating score for the entire sample was 3.5 with a normal distribution. A cut point of 4 was selected to provide two distinct groups: those institutions with high market success (mean = 5.21); and those institutions with low market success (mean = 2.71).

Of the 315 institutions 188 (65 per cent) were classified as low market success, while 103 (35 per cent) were classified as high market success. An examination of the relationship between country of origin and institutional type and membership of either of these two categories found no significant association.

A logit analysis was undertaken using this dichotomous success measure as the dependent variable and the four critical success factors: promotion and recruitment, image and resources; people and culture; and coalition and forward integration as the independent variables. A total of 286 of the 315 cases were used to estimate the model. Twenty-nine cases were not included because they were missing data for one or more of the variables. The final model, which contained two significant terms, is shown in Table V. Both variables were significant at the 0.05 level.

The first significant variable in the model was the factor variable "Image and

resources" which measured the level of market profile or recognition, the strength of financial resources, reputation for quality, size and influence of alumni and range of courses and programs. The positive coefficient for this term indicated that institutions which were identified as high market success were more likely to be performing better in the areas associated with this factor than those institutions classified as low market success.

The second significant term selected for inclusion in the model was the factor variable "Coalition and forward integration" which measured the possession of international strategic alliances and possession of offshore teaching programs. The positive sign for this term's coefficient indicated that those institutions, which possessed these attributes, were more likely to be classified as high market success.

#### Goodness of fit of the model

One method of assessing the goodness of fit of logistic models is to examine the -2LL measure. This measure is calculated by the SPSS Logistic Regression procedure each time a model is developed. If a model fits perfectly, then the value for -2LL will be 0. The -2LL is also calculated for the model that contains the constant only. This enables an estimation of the level of improvement gained by adding the model terms (Norusis, 1993, p. 10). These two values for -2LL are shown in Table VI. -2LL for the model with the constant was found to be 372.64, while that for the full model was 322.18.

Seeing how well the model classifies the data is another way of determining how well a logistic model performs. This involves a comparison of the observed number of cases for each state of the dependent variable with the predicted number of each state as derived from the model (Wrigley, 1985, p. 50). Table VI illustrates the classification performance of the model.

The prior probabilities indicate the probability of a case being correctly classified into one of the two groups before the model is applied to the data (Afifi and Clark, 1984, pp. 263-4). The relative sizes of the two populations in the current model determined the value of 64.34 per cent for the prior probabilities. The posterior probabilities express the probability for each case of belonging to a particular group as determined by the chosen model (Afifi and Clark, 1984, p. 262). The results of applying the model to the data are shown in the bottom half of Table VI. This shows that the model correctly classified 72.73 per cent of the 286 cases.

**Table IV**

Results of factor analysis of market success measures

Factor label	Item	Factor loadings	Mean scores
<b>Market Success</b> (alpha = 0.76)	Growth in overseas student enrolments	0.85	3.68
	Financial benefits from international students	0.79	3.22
	Demand for places regularly exceeds supply	0.74	2.85
	The outlook for the next 3 to 6 years is for growth	0.64	4.33
<b>Independent variable</b>	Without overseas student fees the institution would experience financial difficulties	0.89	2.58



### Discussions with institutions over the critical success factors

In order to gain a better understanding of the nature of these success factors a series of in-depth interviews were conducted with representatives from a selected sample of 14 Australian institutions in Australia. Selection of the 14 institutions was on the basis of size, institution type and relative experience within the international market. The institutions interviewed included universities; private business or vocational colleges, ELICOS colleges, TAFE colleges, private secondary schools and a pilot training school.

During the interviews the critical success factors identified in the survey were explained and the institutional representatives were asked to comment on whether they considered these to be applicable to their own institutions. In each case there was a high degree of agreement with the survey findings and recognition of the importance of the success factors. To illustrate the outcome from these interviews four institutions have been selected as examples of how these critical success factors are applied within the industry. At the request of the institutions their names have not been provided.

### University no. 1

University no. 1 is one of Australia's most successful international educators. In 1995 it had 5,000 overseas students enrolled. The university had been a major provider of subsidized places to international students during the 1970s and early 1980s. This helped to enhance its market profile and recognition. Since 1987 the university had undertaken a coordinated program via its international office to enhance and develop its image within its overseas markets.

In terms of coalition and forward integration strategies, University no. 1 possessed a wide range of international agreements and alliances. It also operated a number of highly successful offshore programs and worked conscientiously to manage the quality of these via careful selection of joint venture partners and local teaching staff.

### University no. 2

University no. 2 is among the top ten Australian universities in the field of international education. The respondents at University no. 2 explained that the institution had worked consciously over many years to develop a strong image. University no. 2 was one of the first Australian institutions to consider the use of a corporate logo or "brand name". It was also a winner of an Australian University of the Year Award that had further assisted its market image. University no. 2 had made a decision to make all its programs relevant not only to Australian students, but to students from throughout the Asia-Pacific region.

The university was aware of the importance of developing international strategic alliances. It had established offshore teaching programs in South-east Asia and was active in developing international agreements with other institutions throughout the world.

### ELICOS college

This privately owned ELICOS college was established in the 1980s by a group of English as Foreign Language (EFL) teachers to take advantage of the emerging market for EFL teaching in Australia. It remains a cooperative school where all staff have input into the overall management of the college. The college has two campuses located in key inner city locations.

The college has enjoyed substantial success and growth over recent years. It was one of the first Australian ELICOS colleges to become a member of the International Association of Language Colleges (IALC) and was a founding member of the ELITE colleges of Australia. This is a group of independent ELICOS colleges aimed at representing the

**Table V**

Logistic model for market success

Model term	Coefficient	Significance level
Image and resources	0.73	0.0000
Coalition and forward integration	0.29	0.0026
Constant	-4.66	

-2 log likelihood for model with constant only = 372.64

-2 log likelihood for full model = 322.18

**Table VI**

Classification table for logistic model

Prior probabilities			
Actual	Predicted		Total
	Low success	High success	
Low success	184	0	100.0 per cent
High success	102	0	0.0 per cent
Classification accuracy of prior probabilities			64.34 per cent
Posterior probabilities			
Actual	Predicted		Total
	Low success	High success	
Low success	161	23	87.50 per cent
High success	55	47	46.08 per cent
Classification accuracy of posterior probabilities			72.73 per cent

best schools in the country. The college has also established collaborative links with Australian universities to provide ELICOS programs. These alliances were viewed as an important contribution to the overall success of the college.

The college had enhanced its image by providing training to EFL teachers and regularly ran courses offshore in countries such as Indonesia and New Zealand. This enhanced the overall level of image and market profile, particularly among private education agents who later referred students to the college. The EFL teachers whom the college trained were also a valuable source of word of mouth referrals.

### Private secondary school

This private Christian boy's school was established in 1923. Since 1987 the school has actively sought international students and has consistently attracted one of the largest numbers of such students of any private boy's school in Australia. The school has a quota of 76 international students and regularly turns away many more applicants than it has places.

The school views part of its success to be a function of its image and overall market profile. It has an established reputation for academic success. Seventy-five per cent of the school's graduates go on to university. In its marketing the school has emphasized this high academic standard and makes use of its own selection test for international students prepared by its staff. Its international students regularly achieve well in the state university entrance examinations. The school makes use of their success in its marketing communications.

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## Conclusions

Developing competitive advantage for international education suppliers via marketing strategies is a complex issue. Education is a product that is both highly intangible and has characteristics, which create special problems for marketing. This research has identified four critical success factors that appear important to institutions marketing internationally. The logit analysis undertaken suggests that success for an education institution in international markets is positively associated with the following two factors:

- 1 *Image and resources.* This factor variable measured the level of market profile or recognition, strength of financial resources, reputation for quality, size and influence of alumni and range of courses and programs.

- 2 *Coalition and forward integration.* This factor variable measured possession of international strategic alliances and offshore teaching programs.

The analysis also suggests that these findings are applicable to institutions in most of the world's leading international education supplier countries. The evidence from the qualitative research undertaken subsequent to the survey reinforces the empirical findings and provides an insight into the nature of how institutions can achieve successful strategies within their international markets. The adoption of carefully managed branding and positioning strategies designed to enhance the institution's image and overall market is consistent with past research findings into the competitive advantage of service industries (Aaker, 1991; Hall, 1992, 1993).

Development of a breadth and depth in the courses and programs offered by the institution, or developing these courses to provide a degree of product differentiation for the institution is also consistent with the literature. Previous research into the development of competitive advantage for service firms has highlighted the importance of developing "Resources/skills stock" (Dierickx and Cool, 1989; Bharadwaj *et al.*, 1993). By this process the organisation achieves a competitive lead over its competition by the sheer scale or complexity of its various assets and activities.

Finally, the possession of strategic alliances, particularly with international partners and the forward integration into the marketing channel is supported by other research (Dunning and Pearce, 1985; Ohmae, 1985; Erramilli, 1991; Bharadwaj and Menon, 1993). Strategic alliances enable education institutions to enhance their marketing coverage and their market profile in overseas markets by leveraging off the resources of local partners.

Further research is needed to fully explore the nature of these critical success factors. Of benefit would be a longitudinal examination of the success of institutions in several countries. Nevertheless this study attempts to fill a much-needed gap in the literature relating to the marketing of international education.

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## References

- Aaker, D.A. (1989), "Managing assets and skills: the key to a sustainable competitive advantage", *California Management Review*, Winter, pp. 91-106.
- Aaker, D.A. (1991), *Managing Brand Equity: Capitalizing on the Value of a Brand Name*, The Free Press, New York, NY.
- ACIIC (1993), *Innovation in Australia's Service Industries*, Australian Centre for Innovation

- and International Competitiveness, University of Sydney, Department of Industry, Technology and Commerce, AGPS, Canberra.
- Afifi, A.A. and Clark, V. (1984), *Computer-aided Multivariate Analysis*, Van Nostrand Reinhold company, New York, NY.
- AGB (1992), *International Competitiveness Study*, Education Information and Publication, IDP Ltd, Canberra.
- Altbach, P., Kelly, D. and Lulat, Y.G.M. (1985), *Research on Foreign Students and International Study: An Overview and Bibliography*, Praeger, New York, NY.
- Altbach, P. and Wang J. (1989), *Foreign Students and International Study: Bibliography and Analysis, 1984-1989*, University Press of America, Washington, DC.
- Baldwin, P. (1991), *Higher Education: Quality and Diversity in the 1990's*, Policy Statement by Minister for Higher Education and Employment Services, AGPS, Canberra.
- Barley, S.R. (1983), "Semiotics and the study of occupational and organizational cultures", *Administrative Science Quarterly*, 28 September, pp. 393-413.
- Barney, J.B. (1986a), "Organizational culture: can it be a source of sustained competitive advantage?", *Academy of Management Review*, Vol. 11 No. 3, pp. 656-65.
- Bateson, J.E. (1979), "Why we need service marketing", in Ferrell, O.C., Brown, S.W. and Lamb, C.W. (Ed.), *Conceptual and Theoretical Developments in Marketing*, American Marketing Association, Chicago, IL, pp. 131-46.
- Berry, L.L. (1980), "Service marketing is different", *Business*, Vol. 30, (May-June), pp. 24-9.
- Berry, L.L. and Parasuraman, A. (1993), "Building a new academic field - the case of services marketing", *Journal of Retailing*, Vol. 69 No. 1, Spring, pp. 13-60.
- Bharadwaj, S.G. and Menon, A. (1993), "Determinants of success in service industries: a PIMS-based empirical investigation", *Journal of Services Marketing*, Vol 7 No. 4, pp. 19-40.
- Bharadwaj, S.G., Varadarajan, P.R. and Fahy, J. (1993), "Sustainable competitive advantage in service industries: a conceptual model and research propositions", *Journal of Marketing*, Vol. 57 No. 4, pp. 83-99.
- Blois, K.J. (1974), "The marketing of services: an approach", *European Journal of Marketing*, Vol. 8, (Summer), pp. 137-45.
- Booms, B.H. and Nyquist, J. (1981), "Analysing the customer/firm communication component of the service marketing mix", in Donnelly, J.H. and George, W.R. (Ed.), *Marketing Services*, American Marketing Association, Chicago, IL, pp. 172-7.
- Booms, B.H. and Bitner, M.J. (1981), "Marketing strategies and organization structures for service firms", in Donnelly, J.H. and George, W.R. (Ed.), *Marketing of Services*, American Marketing Association, Chicago, IL, pp. 47-51.
- Brim, O.G. and Wheeler, S. (1966), *Socialization After Childhood: Two Essays*, John Wiley and Sons, New York, NY.
- Buzzell, R.D. and Gale, B.T. (1987), *The PIMS Principles: Linking Strategy to Performance*, Free Press, New York, NY.
- Clark, D. (Ed.) (1988), "The services sector", in *Student Economic Briefs, 1988/89*, The Financial Review Library, Sydney, pp. 60-8.
- Cronbach, L.J. (1951), "Coefficient alpha and the internal structure of tests", *Psychometrika*, Vol. 16, pp. 297-334.
- Danko, W.D. (1986), "Attracting the mature student: the case for community colleges", *Journal of Professional Services Marketing*, Vol. 2 No. 1/2, Fall/Winter, pp. 169-77.
- Davis, D. (1989), "Australian education: information counselling offshore", in Williams, S.B. (Ed.), *Overseas Students in Australia, Policy and Practice*, International Development Program, Canberra.
- Day, E. (1992), "Conveying service quality through advertising", *The Journal of Services Marketing*, Vol. 6 No. 4, Fall, pp. 53-61.
- DCT (1993), *Industry Marketing Strategy: Department of Commerce and Trade International Trade in Professional Services*, May, Department of Commerce and Trade, Perth.
- Dearden, J. (1978), "Cost accounting comes to service industries", *Harvard Business Review*, Vol. 56, September-October, pp. 132-40.
- DEET (1993), *Review of Australian Education Centres*, Vol. 2, Department of Employment, Education and Training, Canberra.
- DEET (1996), *Overseas Student Statistics 1995*, Department of Employment Education and Training, International Division, AGPS, Canberra.
- Dierickx, I. and Cool, K. (1989), "Asset stock accumulation and sustainability of competitive advantage", *Management Science*, Vol. 35 No. 12, December, pp. 1504-13.
- Dunning, J.H. and Pearce, R.D. (1985), *The World's Largest Industrial Enterprises*, Gower, London.
- Dunning, J.H. and Kundu, S.K. (1995), "The internationalization of the hotel industry - some new findings from a field study", *Management International Review*, Vol. 35 No. 2, pp. 101-33.
- Edmond, M. (1995), "Quality support services for international students: AVCC code of ethical practice in the provision of education to overseas students by Australian higher education institutions", *Journal of Tertiary Education Administration*, Vol. 17 No. 1, May, pp. 51-62.
- Edwards, S. and Browne, M. (1991), *Destination Australia: Pre-departure Needs of Temporary Residents and Immigrants*, Bureau of Immigration Research, AGPS, Canberra.
- Erramilli, M.K. and Rao, C.P. (1990), "Choice of foreign market entry modes by service firms: role of market knowledge", *Management International Review*, Vol. 30 No. 2, pp. 135-50.
- Erramilli, M.K. (1991), "The experience factor in foreign market entry behavior of service

- firms", *Journal of International Business Studies*, pp. 479-501.
- Evans, K.E. (1995), "Educational services as a national industry", in Davis, T.M. (Ed.), *Open Doors 1994/95: Report on International Educational Exchange*, Institute of International Education, New York, NY, pp. 117-18.
- Fiol, C.M. (1991), "Managing culture as a competitive resource: an identity-based view of sustainable competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 191-211.
- Fisk, R.P., Brown, S.W. and Bitner, M.J. (1993), "Tracking the evolution of the services marketing literature", *Journal of Retailing*, Vol. 69 No. 1, Spring, pp. 61-103.
- George, W.R. (1977), "The retailing of services: a challenging future", *Journal of Retailing*, Vol. 53, Fall, pp. 85-98.
- Gerstein, M. and Reisman, H. (1982), "Creating competitive advantage with computer technology", *The Journal of Business Strategy*, Summer, pp. 53-60.
- Gronroos, C. (1978), "A service-oriented approach to marketing of services", *European Journal of Marketing*, Vol. 12 No. 8, pp. 588-601.
- Gronroos, C. (1990), *Service Management and Marketing: Managing the Moment of Truth in Service Competition*, Lexington Books, Lexington, MA.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1992), *Multivariate Data Analysis With Readings*, 3rd ed., Macmillan, New York, NY.
- Hall, R. (1992), "Strategic analysis of intangible resources", *Strategic Management Journal*, Vol. 13, pp. 135-44.
- Hall, R. (1993), "A framework linking intangible resources and capabilities to sustainable competitive advantage", *Strategic Management Journal*, Vol. 14, pp. 607-18.
- Hamer, G.A. (1993), *The Use of Technology to Deliver Higher Education in the Workplace*, AGPS, Canberra.
- Harman, G. (1994), "Australian higher education administration and the quality assurance movement", *Journal of Tertiary Education Administration*, Vol. 16 No. 1, May, pp. 25-43.
- Harris, D.R. and Rhall, T.M. (1993), *Survey of International Students, Department of Employment Education and Training*, ACT, Braddon.
- Harris, G.T. and Jarrett, F.G. (1990), *Educating Students in Australia: Who Benefits?*, Allen and Unwin, Sydney.
- Huber, R. M. (1992), "Why not run a college like a business?", *Across the Board*, November, pp. 28-32.
- Hughes, H. (1988), "Education as an export industry", in Hogbin, G.R. (Ed.), *Withering Heights: The State of Higher Education in Australia*, Allen and Unwin, Sydney, pp. 217-55.
- Judd, R.C. (1968), "Similarities or differences in products and service retailing", *Journal of Retailing*, Vol. 43, Winter, pp. 1-9.
- Kaiser, H.F. (1974), "An index of factorial simplicity", *Psychometrika*, Vol. 39, pp. 31-6.
- Legg, D. and Baker, J. (1991), "Advertising strategies for service firms", in Lovelock, C.H. (Ed.), *Services Marketing*, Prentice-Hall, Englewood Cliffs, NJ, pp. 282-91.
- LEK (1994), *Intelligent Exports: "...and the Silent Revolution in Services"*, LEK Partnership, Australian Trade Commission, Sydney.
- Lindsay, A. (1994), "Quality and management in universities", *Journal of Tertiary Education Administration*, Vol. 16 No. 1, May, pp. 55-68.
- Lovelock, C. (1983), "Classifying services to gain strategic marketing insights", *Journal of Marketing*, Vol. 47, Summer, pp. 9-20.
- Lovelock, C. (1991), *Services Marketing*, 2nd ed., Prentice-Hall, Englewood Cliffs, NJ.
- Marceau, J. (1993), *Steering from a Distance: International Trends in the Financing and Governance of Higher Education*, Department of Employment, Education and Training, AGPS, Canberra.
- Mazzarol, T., Kemp, S. and Savery, L. (1996), *A Survey of International Students who Choose Not to Study in Australia (Taiwan and Indonesia)*, paper presented at the Australian International Education Foundation 1996 Business Meeting, Adelaide, Australia, 29-30 September.
- McIntyre, S.H. (1982), "Obstacles to corporate innovation", *Business Horizons*, January-February, pp. 23-8.
- Morgan, N.A. (1991), *Professional Services Marketing*, Butterworth-Heinemann, Oxford.
- MSS (1993), *International Education: The Asia Pacific Region and Canada*, Minister of Supply and Services, Canada.
- Nicholls, J. (1987), "Offshore education marketing: professional and industrial issues", *Australian Universities Review*, Vol. 29 No. 2, pp. 45-48.
- Nicoulant, B. (1989), "Problems and strategies in the international marketing of services", *European Journal of Marketing*, Vol. 23 No. 6, pp. 55-65.
- Norusis, M.J. (1993), *SPSS for Windows: Advanced Statistics Release 6.0*, SPSS Inc., Chicago, IL.
- Ohmae, K. (1985), *Triad Power: The Coming Shape of Global Competition*, The Free Press, New York, NY.
- Parsons, G. L. (1983), "Information technology: a new competitive weapon", *Sloan Management Review*, Vol. 25 No. 1 .
- Pekar, P. and Allio, R. (1994), "Making alliances work - guidelines for success", *Long Range Planning*, Vol. 27 No. 4, August, pp. 54-65.
- Peters, T.J. and Waterman, R.H. (1982), *In Search of Excellence*, Harper and Row, New York, NY.
- Plunkert, L.M. (1990), "The 1980s: a decade of job growth and industry shifts", *Monthly Labour Review*, Vol. 113, September, pp. 3-16.
- Porter, M.E. and Millar, V.E. (1985), "How information gives you competitive advantage", *Harvard Business Review*, July-August, pp. 149-16.
- Porter, M.E. and Fuller, M.B. (1986), "Coalitions and global strategy", in Porter, M.E. (Ed.), *Competition in Global Industries*, *Harvard Business School*, Boston, MA, pp. 315-43.

- Quinn, J. B. (1985), "Managing innovation: controlled chaos", *Harvard Business Review*, May-June, pp. 73-84.
- Rathmell, J.M. (1966), "What is meant by services?", *Journal of Marketing*, 30 October, pp. 32-6.
- Riding, R.J. (1977), *School Learning: Mechanisms and Processes*, Open Books, London.
- Rowe, P.W. (1995), "Western Australian services exports", Submission No. 35, *Inquiry into the Implications of Australia's Exports of Services to Indonesia and Hong Kong*, Canberra, Joint Standing Committee on Foreign Affairs, Defence and Trade, Vol. 2, pp. 380-468.
- Sasser, W.E. (1976), "Match supply and demand in service industries", *Harvard Business Review*, Vol. 54 November-December, pp. 133-40.
- Scott, P. (1994), "Wider or deeper? International dimensions of mass higher education", *Journal of Tertiary Education Administration*, Vol. 16 No. 2, October, pp. 179-94.
- Scott, R.L. (1995), "International students: are communities paying attention?", in Davis, T.M. (Ed.), *Open Doors 1994/95: Report on International Educational Exchange*, Institute of International Education, New York, NY, pp. 108-9.
- Shostack, G.L. (1977), "Breaking free from product marketing", *Journal of Marketing*, Vol. 41 April, pp. 73-80.
- Shuell, T.J. and Lee, C.Z. (1976), *Learning and Instruction*, Brooks-Cole Publishing, Monterey, CA.
- Singleton, J. (1974), "Implications of education as a cultural transmission", in Spindler, G.D. (Ed.), *Education and Cultural Process: Toward an Anthropology of Education*, Holt, Rinehart and Winston, New York, NY, pp. 26-38.
- Smart, D. and Ang, G. (1992a), *A Comprehensive Bibliography: Export of Education Services and Australia Full-Fee Policy for Overseas Students*, Working Paper No. 9, Asia Research Centre, Murdoch University, Perth.
- Smart, D. and Ang, G. (1992b), *Medium Term Market Opportunities for Australian Higher Education: A Pilot Survey of Singapore*, Policy Paper 2, Asia Research Centre, Murdoch University, Perth.
- Smart, D. and Ang, G. (1993), *Medium Term Market Opportunities for Australian Education: A Survey of Hong Kong*, Policy Paper No. 12, August, Asia Research Centre, Murdoch University, Perth.
- Soutar, G. and Mazzarol, T.W. (1995), "Gaining competitive advantage in education services exports: forward integration and strategic alliances in a maturing market", in Tower, G. (Ed.), *Proceedings of the Academy of International Business Southeast Asia Regional Conference, Asia Pacific International Business: Regional Integration and Global Competitiveness*, Murdoch University, Perth, pp. 85-110.
- Stewart, D.W. (1981), "The application and misapplication of factor analysis in marketing research", *Journal of Marketing Research*, 18 February, pp. 51-62.
- Strickland, G. (1995), *Report of the Formative Study of the Western Australian Provision of International Education*, Education Department of Western Australia, Perth.
- Takeuchi, H. and Nonaka, I. (1986), "The new product development game", *Harvard Business Review*, January-February, pp. 137-46.
- Takeuchi, H. and Porter, M.E. (1986), "Three roles of international marketing in global strategy", in Porter, M.E. (Ed.), *Competition in Global Industries*, Harvard Business School Press, Boston, MA, pp. 111-46.
- Thomas, D.R.E. (1978), "Strategy is different in service businesses", *Harvard Business Review*, Vol. 56 No. 4, July-August, pp. 158-65.
- Upah, G.D. (1980), "Mass marketing in service retailing: a review and synthesis of major methods", *Journal of Retailing*, Vol. 56, Fall, pp. 59-76.
- VanDenVen, A. (1986), "Central problems in the management of innovation", *Management Science*, Vol. 32 No. 5, May, pp. 590-607.
- Vanermerwe, S. and Chadwick, M. (1989), "The internationalization of services", *The Services Industries Journal*, January, pp. 79-93.
- Williams, J.R. (1992), "How sustainable is your competitive advantage?", *California Management Review*, Vol. 34 No. 2, Spring, pp. 29-51.
- Winter, S.G. (1987), "Knowledge and competence as strategic assets", in Teece, D.J. (Ed.), *The Competitive Challenge*, Harper and Row, New York, NY, pp. 159-84.
- Wrigley, N. (1985), *Categorical Data Analysis for Geographers and Environmental Scientists*, Longman, London.
- Zeithaml, V.A., Parasuraman, A. and Berry, L.L. (1985), "Problems and strategies in services marketing", *Journal of Marketing*, Vol. 49, Spring, pp. 33-46.