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How Product Attributes Influence Internationalization: A Framework of Domain- and Culture-Specificity

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Abstract This paper introduces two dimensions of product attributes in the context of internationalization: domain- and culture-specificity. Products can be high or low in domain- or culture-specificity, thereby being one of four broad categories in a two-by-two matrix. This framework of product attributes helps explain a series of gradations on how cultural difference influences the difficulty of selling a product internationally. By examining four cases, one from each of these categories, this paper shows that different product attributes affected the difficulty or ease with which the products of these firms were internationalized. While all four cases were able to derive international sales, the domain- and culture-specificity of their products constrained the international markets these products could feasibly enter into, and how soon this could take place. In general, more culture-specific products face higher hurdles in a culturally dissimilar international market compared with the home market. However, given products of similar culture-specificities, highly domain-specific products tend to have less difficulty in selling to a culturally different international market than products that are not domain-specific.

Keywords International new ventures · Born globals · Product attributes

1 Introduction

The emerging literature on international new ventures, or 'born globals' (e.g., Hedlund and Kverneland 1985; Oviatt and McDougall 1994; Rialp et al. 2005),

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positions itself in sharp contrast to the classic, staged-internationalization process enshrined in the 'traditional' international business literature (e.g., see the Uppsala model of staged internationalization in Johanson and Wiedersheim-Paul 1975; Johanson and Vahlne 1977, 2003)—which posits that cultural difference is a major impediment to the international expansions of firms. The significant cost involved in adapting and marketing a product to a different culture means that it often makes sense for firms to first focus their operation in their respective home markets before incrementally increasing their international activities and commitments (Lau 1992; Chang 1995; Elango and Pattnaik 2011). Expanding to international markets at inception or early in their corporate histories, the so-called 'born globals', or 'international new ventures' appear to have been able to defy cultural and socio-institutional constraints faced by many traditional, sequentially internationalizing firms.

While many scholars (e.g., Shrader et al. 2000) describe how different this new breed of firms is from traditional, staged-internationalizing ones, some have documented similarities between them (Kandasaami and Huang 2000; Madsen and Servais 1997; Coviello and Munro 1997). Most crucially, as noted by Gabrielsson et al. (2008: p. 385), "[over] a decade after Oviatt and McDougall's (1994) seminal work, [scholars] still do not know enough about what happens to [born globals] after their initial phase and when they become established." In response to this and the acknowledgement by Sapienza et al. (2006, p. 918) that neither schools "adequately considers the entire range of performance implications of early versus late internationalization", this paper aims to advance the understanding on international new ventures by exploring their continuity with their staged-internationalizing counterparts.

Yip (2003) describes certain attributes that would enhance the international orientation of mass-marketed products around the world, implicitly arguing for a local versus global dichotomy. Increasingly, researchers point to the existence of a continuum in product attributes that may in one extreme favour staged-internationalization but in another the born global's perspective of fast internationalization. Small ventures with advanced technology studied by Autio et al. (2000) clearly benefited in sales from early internationalization. Gabrielsson and Kirpalani (2004) highlighted how different distribution channels can help new firms internationalize their products. At one extreme, manufacturers of automotive components could, for instance, rely on their out-sourcing multi-national corporations (MNCs) to act as system integrators to spread their products internationally. In some instances, producers could rely on the Internet to distribute their end-products globally, facilitating the chance of unplanned international sales (Hennart 2014). In other cases, the need for a full-time sales force to market a particular product would translate into high upfront investment for internationalization, thereby favouring staged internationalization (Hennart 2014). Sequential acquisitions also tend to benefit more from a staged internationalization process (Chang 1995; Elango and Pattnaik 2011). While technology-related products have been common in studies of born globals (e.g., Bell 1995), two-thirds of born globals based in Canada invested less than 10 % of their revenue in research and development (Spence et al. 2011). At the same time, some born globals have been reported to follow a more gradual internationalization path later (Hashai and Almor 2004).

Meanwhile, scholars comparing between born globals and their staged-internationalizing counterparts have confirmed that some with similar product characteristics could later turn out to be either kind—some turning out to be born globals while others become staged-internationalizers (Chetty and Campbell-Hunt 2004; Fan and Phan 2007; Evers 2010). In some cases, many aspects of those firms that turned out to be born globals remained very similar to the staged-internationalizers (e.g., Zhang et al. 2009; Spence et al. 2011).

To reconcile this wide array of research findings, we focus in this paper on two key product attributes that could influence the contingencies on internationalization. We propose a conceptual framework that helps tease out some of the nuances between the born-global and the staged-internationalization schools, help bridge the two seemingly opposing perspectives, and yet provide inspirations for more detailed investigations going forward. Through four illustrative case studies, we demonstrate how certain products could achieve fast international sales as the firm expands to culturally similar international markets, but stall in its further internationalization to culturally dissimilar markets. In contrast, other products may have a higher chance of achieving sales earlier from culturally dissimilar markets, but face difficulty in their sales growth later on. These varied examples can therefore better anchor the decision on the timing of internationalization of different firms, highlighting the realistic difficulty for some firms to enter certain international markets soon after their founding. The four case studies are chosen from companies based in the Asian city-state of Singapore in South-East Asia, whose domestic output per capita had leapt from the level of developing countries to that of industrialized economies within three decades ending in the late-1990s (Ghemawat 2003).

2 Product Dimensions Linking INVs and Staged Internationalizers

What are the predominant dimensions in products that relate to their ease of internationalization? One obvious and important dimension concerns culture. Culture is a collection of language, lifestyle, customs and preferences of a particular population at the national, provincial or other quantifiable levels. In a survey of small computer software firms in Europe, Bell (1995) notes that even among the early internationalizing ventures there is *prima facie* evidence of smaller cultural differences correlating with higher international sales.

The consumption or adoption of some products can be more sensitive to the culture of a particular international market than others. This would affect how easily a product could be sold in different international markets. Cultural specificity measures how narrow in terms of the spectrum of cultural communities a particular product or service appeals to. A product that is culture-specific (i.e., high on cultural specificity) appeals to one specific cultural community and requires significant modifications (absent the requisite education on the part of the users) to be successfully marketed to a different culture. For instance, the menorah (candelabrum used in Hanukkah celebrations) and the red packet (envelopes used in Chinese

New Year or other auspicious occasions to hold gift money for children or young relatives) have deep meanings to the Jewish and Chinese communities respectively. Practically all members of these communities recognize the value of these products respectively but it is very difficult to market these two products outside of their respective cultures with the same cultural reverence. For instance, a red packet could be used by members of non-Chinese communities to hold shopping vouchers intended to be gifts at special occasions, but the same non-Chinese communities could also use other envelopes for the same purpose, i.e., producers of the red packets could not charge more for their products than ordinary envelopes to non-Chinese communities. In this way, products that are culture-specific generally face enormous hurdles for firms to market internationally to culturally distant markets. The potentially adverse effect of cultural difference on internationalization is much reduced if a product is not culture-specific.

The same survey of computer software firms by Bell (1995) noted many international sales along specialized industry domains. For instance, a Norwegian firm producing software for the oil industry was able to sell to oil-producing countries like Venezuela, Indonesia, the Middle East and the UK early in its history; a Finnish producer of a hotel management program sold to hotels in Spain, Portugal, Turkey and Yugoslavia. Other studies have also confirmed the importance of knowledge-intensive products in the rise of born globals (e.g., Hoy et al. 1992) in radar technology (Boter and Holmquist 1996), the electricity utility sector (Moen et al. 2003), wireless customer relationship management (Laanti et al. 2007), and for new ventures founded in both developed and developing countries (Lopez et al. 2009; Spence et al. 2011). In other words, the literature on international new ventures finds that cultural difference is only one of possibly two factors heavily influencing international sales. The way in which the Norwegian computer software firm in Bell (1995) specializing in applications for the oil industry can sell to clients in other oil-producing countries with relative ease, implies that the specialized domain knowledge inherent in industry-specific software programs can mitigate the adverse effects posed by cultural difference on international trade.

Fan and Phan (2007) coined the term "domain-specific familiarity" to describe how products appealing to and/or making use of specialized knowledge can easily connect specialist users in different cultures. By definition, specialized knowledge is not instantly recognized or understood by the general public: The spread of such specialized knowledge to the general public can take a long time. However, specialists from around the world working in the same industry domain are likely to face similar issues, understand the same scientific equations or use standard applications relevant to that domain. In other words, these specialists speak and understand the technical language, whether it is physical equations or programming logic. It is this domain-specific knowledge that transcends cultural barriers and connects specialists from different cultures together. In practice, the emergence of a plethora of international conferences or internet forums that focus on a particular industry or technical domain is evidence of this domain-specific familiarity. More importantly, the culture-transcending quality of domain-specific familiarity can help mitigate, but not entirely eliminate, the adverse effect of cultural difference on international trade. This observation is consistent with Autio et al. (2000), who conclude that many early internationalizing firms “depend on [specialized] knowledge as a source of competitive advantage”, and also broadly with Bloodgood et al. (1996), who explain that product differentiation (catering to a select customer segment who can come from different cultures) favours internationalization.

In essence, domain specificity measures how much specialized or technical knowledge users and/or producers are required to use or make a specific product. A product that is domain-specific (i.e., high on domain specificity) addresses the needs of a specialized industry domain. For instance, non-destructive testing tools for ship boilers and electronic circuitry designed to safely recharge battery each requires specially trained individuals to operate, and may not be easily used for purposes outside of their original designs—these products are highly domain-specific. Because of the specialised nature of domain-specific products, there may not be too many producers around the world who are direct competitors to one another. As a result, domain-specific producers can be sought out by specialist customers who have a particular need for the products, facilitating accidental international sales for the firms involved (Hennart 2014).

In contrast, a product that is not domain-specific can appeal to a large audience, or the ‘mass market’ in the same culture. A computer mouse (accessory) and mobile telephones (as in Jolly et al. 1992) are designed to be used by individuals from virtually all walks of life and are therefore not very domain-specific.

3 Domain- and Cultural-Specificity Matrix

The preceding discussion suggests domain- and culture-specificity as two orthogonal dimensions on how products or services in general aim at a specific clientele. With these two dimensions, a simple two-by-two matrix can be constructed, as illustrated in Fig. 1—with its vertical dimension representing domain specificity and its horizontal dimension cultural specificity.

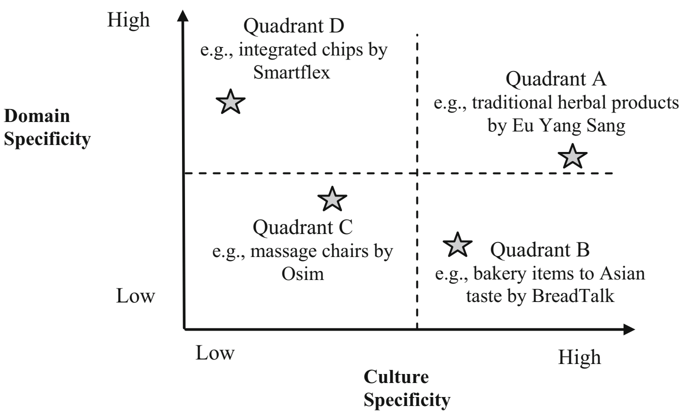

Fig. 1 Domain- versus culture-specific products

With products that can be either high or low on the two dimensions of domain- and cultural-specificity, four broad categories of products emerge with this framework: (a) highly domain- and culture-specific, (b) highly culture-specific but not domain-specific, (c) highly domain-specific but not culture-specific, and (d) neither domain- nor culture-specific. We describe below each of these categories of products and a case study in each.

To look for relevant case studies with respect to our domain and cultural specificity framework, we examined companies that have been publicly listed since 2000 to ensure access to all of their annual reports digitally. We chose our case studies from companies based in the tiny city-state of Singapore for several reasons. First, the small size of this English-speaking city-state (with a population of only 5 million) ensured that internationalization would be a primary focus for a significant number of companies and not just an afterthought (e.g., Jones and Coviello 2005). Second, the state's domestic output per capita leapt from the level of developing countries to that of industrialized economies in three decades ending in the late-1990s (Ghemawat 2003), ensuring plenty of companies accustomed to the latest transport and telecommunications technologies. Third, the lack of natural resources in the city-state reduced the country of origin effect (Chattalas et al. 2008; Sharma 2011) for the products from there. We also specifically avoided financial institutions or maritime-related companies in our selection because these industries might arguably be some of the better known ones in Singapore to customers outside of it. In all four cases, Singapore as the country of origin was much less of an impact for international customers than the actual products the companies sold. In fact, one of them (Osim) has been fond of using media stars from another country (Hong Kong, China) in their advertisements—the company's association with Singapore was not obvious.

Because of the significant population of ethnic Chinese in Singapore (about three quarters of the population), there is significant cultural similarity with neighbouring Malaysia (also with a sizable population of ethnic Chinese, although the legal system and cultural mores are much more different), as well as in Hong Kong and the Greater China region (including mainland China, Macau and Taiwan) in general. This setting allows us to demonstrate the nuanced interplay between simply venturing international (in terms of sales) versus venturing to an international market that is also culturally very different from the home market.

We looked for cases from companies listed in the Singapore Stock Exchange because of the wealth of information available in the public domain for these companies. Our focus on companies with their roots and significant headquarter functions in Singapore immediately excluded almost one-fifth of trading entities listed there from 2000 to 2009, as Singapore is a popular place for other Asian companies or financial vehicles to list for share trading. Of the remaining companies, about half were what we considered localized service-based companies, dominated by construction-related and engineering-focused firms. While these companies can technically internationalize their services, many owe a large part of their business to local connections and compliance to local laws. For them to expand to neighbouring countries—with significant differences in governmental ties and legal framework—would be tremendously difficult, and indeed, many remained largely local entities through the years. We focused instead on companies that produce physical products which did not have to be significantly modified before being shipped to an international market. Some, such as a bed-linen producer Aussino, already had sales from major continents in the world by the time they went for an initial public listing, and were therefore less informative in its internationalizing path. By looking for cases that would provide us with sufficient information to tease apart the notions of mere internationalization versus cultural specificity, we therefore implicitly followed the established approach of "theoretical sampling of cases" (Glaser and Strauss 1967; Eisenhardt and Graebner 2007). In all four cases discussed below, we derived much of our information from company annual reports or public media, and we interviewed or communicated with a senior officer at three of these four companies. As illustrated below, all four companies expanded internationally with their 'traditional' core set of products, and their exports in turn have not been materially modified from their domestic versions.

3.1 Quadrant A: Products of High Domain- and High Culture-Specificity

Products that are both highly culture- and domain-specific require specialized knowledge to make and/or use, and difficult to market to a different culture. Examples of products that are both domain- and culture-specific include the ink-stones, brushes and special paper used in oriental (Chinese, Korean or Japanese) calligraphy. The value of quality ink-stones and specialist calligraphy accessories are appreciated mostly by those who are well-trained in oriental calligraphy—these individuals represent only a small minority among all those in their respective home countries, and an even smaller minority in an international market. There is no wonder why no born-global firm has until now significantly internationalized products in this category.

Instead of requiring that users also have a specialized knowledge to apply a specific product, some products simply require that producers have a specialized knowledge to manufacture them—dramatically expanding the customer base even though the products remain culture-specific. One such firm with products that are both highly culture- and reasonably domain-specific is Eu Yan Sang, which has been selling traditional Chinese herbal and medicinal products to the mass market for over 120 years. One of the authors had a conversation with a former Chief Executive of Eu Yan Sang. The following information was derived from Annual Reports from the listed company.

For much of the past century, Eu Yan Sang has been well-trusted in Hong Kong and the Chinese communities in Malaysia and Singapore. Many in the Chinese communities in these three places trace their descendents from southern China, with a relatively deep reverence for traditions. Hong Kong and Malaysia house important manufacturing facilities of this company. Some of the most established products include several traditional Chinese herbs aimed for women and infants: Bak Foong (*White Phoenix*) Pills, MenoEase Pills and Infants Pills. A series of ready-to-eat bottles of cooked swallow bird nests (crystallized from birds' secretions), traditional Chinese medicinal clinics and retail outlets for traditional Chinese herbs (requiring special care to cook at homes) for the mass market complement the above-mentioned products. These represent the company's core products, although Eu Yan Sang also conducted wholesale operations and ran traditional Chinese medicine

Table 1 Eu Yan Sang's sales by geography, after more than 120 years in operations

Revenue breakdown	2001	2005	2009	2013
Singapore (%)	21	22	28	24
Malaysia (%)	22	20	27	26
Hong Kong (%)	57	49	44	39
Outside of Asia (%)	0.0	8.6	0.2	11
Total revenue (S$M)	75.8	165.9	222.5	222.5

Eu Yang Sang produces and sells traditional Chinese herbal products, of high domain- and culture-specificity

clinics in South-East Asia. In terms of revenue, the retail operation built around the core products described above contributed a lion's share (from 66 % to most recently 80 %) of the total revenue for the entire company in the past decade.

However, in spite of the strong following in Hong Kong, Malaysia and Singapore for traditional herbal products, Eu Yan Sang had not been successful in marketing its products outside this traditional sphere of influence. According to its second annual report in 2001 (shortly after it was listed in Singapore in the year before), the company's sales from beyond these three core markets stood at exactly 0.0 %, after a century in existence (see Table 1). The company's annual report in 2002 documented how it had started "Integrative Medicine Centres—a practice that [combined] Western medicine with traditional Chinese medicine and other natural therapies (p. 6)" as a way to enter the Australian market—the first systematic effort outside of the Chinese communities of South China and South-East Asia (but some of the products associated with holistic Western medicine have since been withdrawn). By bundling with other herbal products—where few other established and resourceful firms also offered, Eu Yan Sang was able to finally penetrate the markets outside of its traditional stronghold in Asia. The report went on to note how they founded these centres in Sydney, Australia, at the end of 2001, where there was a sizable community of ethnic Chinese—whose number had swollen as a result of uncertainties surrounding Hong Kong's handover of its sovereignty to China in 1997. Sales from outside of Asia as a portion of total sales declined after 2006 as a result of the cessation of a special skincare product line in Australia (Eu Yan Sang Group Annual Report 2006, p. 12).

In other words, while the traditional herbal products of Eu Yan Sang transcended the boundary of its listed home base in Singapore, to Malaysia and Hong Kong (where operational roots were laid a century ago), they had for many decades been unable to sell beyond this sphere of traditional Chinese culture. The cost of educating the non-Chinese public of the benefits of traditional Chinese herbal products has been too high even for this century-old enterprise.

3.2 Quadrant B: Products of High Culture-Specificity but Low Domain-Specificity

Products of high culture-specificity but low domain-specificity are generally faster to internationalize outside of the home markets by simply '[following] their clients'

(Bell 1995) than products that are both highly culture-specific and domain-specific, but may still have difficulty crossing cultural boundaries.

While traditional Chinese herbal products mentioned earlier require a specialist to source and process, bread baking is relatively much more widespread, and therefore of lower domain-specificity. A specialist bakery called BreadTalk was set up in 2000 in Singapore to offer bread and related bakery items for sale with an East Asian flavour, and this company has received much press coverage since its initial public offering in 2003. The following information on BreadTalk was derived from its annual reports.

BreadTalk followed a broader trend observed in Japanese bakeries in adapting bread to the local taste, and came up with uniquely South-East Asian delicacies such as its featured item of pork floss on buns (pork floss has been a delicacy among the ethnic Chinese, and is literally made of flavoured fine dried flosses of pork meat). Other bread-related items are typically flavoured with sweet ingredients, or with ham or sausage. While such delicacies have not made it into proper meals of the locals in the same way as plain bread has been in European-based cultures, they have been popular items for breakfast or snacks. Most of these bakery items, including the signature pork floss buns (or chicken floss buns for places where pork is not consumed), typically retail for only USD $1 each—definitely affordable for the masses. Plain loaves of bread suitable to be buttered contribute only a small portion of the total sales at BreadTalk, as bread is typically not consumed alongside main meal items by East Asians.

In 2004, the year after it became publicly listed, BreadTalk derived just below 20 % of its total sales from outside of Singapore—the rest mainly from its operations in Greater China (see Table 2). In the next 8 years, BreadTalk's revenue from outside of Singapore increased to 49 %, with 7.6 % coming from the rest of Asia outside of Singapore and Greater China. In this period, BreadTalk also diversified its business into a Chinese specialist restaurant chain famous for its steamed dumplings among the ethnic Chinese communities (Din Tai Fung, as early as in 2003), as well as food courts in shopping centres in Singapore—all of which share nearby retail spaces with its original bakery outlets.

However, as of 2013, BreadTalk had not recorded any sales outside of Asia, highlighting that the high cost of educating the non-Asian public of the attractiveness of its Asian-flavoured bakery items relative to the profits to be had

Table 2 BreadTalk's sales by geography, after being founded in 2000

Revenue breakdown	2004	2008	2012
Singapore (%)	83	49	51
Greater China (%)	13	36	41
Rest of Asia (%)	4.5	9	7.6
Outside of Asia (%)	0.0	0.0	0.0
Total revenue (S$M)	50.19	212.2	447.3

BreadTalk produces and sells bread and bakery items in Asian taste, of low domain- but high culture-specificity within the Asian culture. In fact, only in 2009 did BreadTalk start to open three retail bakery outlets under a franchise agreement in the Middle East with the help of local business partners (BreadTalk Annual Report 2009, p. 13). This certainly had not been because BreadTalk did not want to grow. As early as in 2002, BreadTalk already aimed to quickly grow to ten countries within 5 years (Li 2002)—and they just managed that by 2007, including its one-outlet presence in Taiwan, two-outlet presence in Hong Kong, and three-outlet presence in Thailand.

All this time, bakery retail has been BreadTalk's prime revenue source, accounting for 80 % of its revenue in 2004 and still more than half of its revenue in 2012 after diversifying into running food courts and restaurants in shopping malls (accounting for 25 and 22 % in revenue respectively). In 2012, out of BreadTalk's total of 609 bakery outlets, 512 (or 84 % of total) were located outside of Singapore. This showed that the bulk of BreadTalk's international revenue has come from the original bakery business (BreadTalk does not separate revenue simultaneously by geography and product line).

While both traditional Chinese medicinal products and Asian-flavoured bakery items are culture-specific, i.e., they are generally not popular outside of Asia, the more domain-specific nature of the former means that at least a small number of customers (e.g., supporters of natural therapies outside of Asia) may actually seek out the products of Eu Yan Sang. The same cannot be said for BreadTalk—in part because their lack of domain-specificity translates into a plethora of competitors both within and outside of Asia. To be close to its customers, BreadTalk's strategy has been to open as many retail outlets as the market can bear—24 bakery outlets were operational in the 716-km^2 (276 square miles) state of Singapore within its first 5 years of operation, 52 outlets by the end of 2009, and 97 outlets by end of 2012.

3.3 Quadrant C: Products of Neither Domain- nor Culture-Specificity

Compared with products of high domain-specificity but low culture-specificity, this category of products requires less specialized knowledge to produce and/or use. For instance, computer accessories like the mouse and mobile telephones (Jolly et al. 1992) can be used by individuals from many occupations *as well as* from many different countries. Nike athletic shoes represent another example in this category, and are frequently referred to as an example of a global product strategy—it has a global appeal because individuals from different cultures and industries can readily appreciate a fine pair of athletic shoes. Differences across many different cultures around the world do not materially affect how these products are used, and individuals with different training can easily learn to make use of these products.

One example of this category of products we use as a comparative case study is the (automatic) electric massage chairs produced and retailed by Osim of Singapore. Since the end-consumers of these products make their purchase decisions directly with Osim and use these products personally, we can infer that the products of Osim are generally less domain-specific than those of, say, Smartflex (discussed in the next section), which require several layers of intermediaries before reaching the hands of the end-consumers.

Within a few years of Osim Incorporation being founded in 1983, the founder-Chairman-Chief Executive Mr. Ron Sim opened stores in Hong Kong, Taiwan and Malaysia, and sales from these international markets soon surpassed that of the domestic market—making it an early born global. One of the authors had a short conversation with Mr. Sim over afternoon tea, but the specific information described below was drawn from the company's annual reports.

While Osim was originally a retailer of health care products such as hand-held massagers and foot reflexology rollers manufactured by others, it in 1995 entered into a joint venture with a Japanese company (Daito Electric Machine) to manufacture electric massage chairs under its own brand, thereby becoming a vertically integrated player in this market. It was also at this point that Osim began to feature popular media personalities in its advertisements, and it was this type of massage chairs with which Osim became synonymous. By 2012, Osim was selling massage chairs that synchronized its massage rhythm with music, in addition to other health-enhancing equipment.

Table 3 shows the breakdown of sales by geography for Osim, highlighting how international sales quickly made up three quarters of Osim's total revenue as early as 1999, the first year in which it publicly reported its revenue breakdown by geography. By 2003, its international sales (from outside of Singapore) accounted for 85 % of its total revenue. At that time, the small proportion of sales coming from outside of Asia (5 %) increased in the next few years to a maximum of 17 % before dropping back to 6 % after the financial crisis significantly dented sales in North America and Europe. At least until 2012, Osim's model of selling health care products in its dedicated stores formed the bulk of its operation, accounting for a

Table 3 Osim's sales by geography, after being founded in 1983

Revenue breakdown	1999	2003		
Singapore (%)	24	15		
Malaysia (%)	6	12		
Hong Kong (%)	48	36		
Taiwan (%)	17	20		
China (%)	5	12		
Rest of Asia (%)	0	2		
Rest of the world (%)	0	3		
Revenue breakdown	1999	2003	2007	2011
South Asia (%)	24	29	48	57
North Asia (%)	76	68	35	37
Outside Asia (%)	0	3	17	6
Total revenue (S$M)	103	136	168	239

1999 was the earliest year in which Osim broke down its sales by country, and since 2003, Osim only disclosed its sales by categories such as North and South Asia. Osim began manufacturing automatic massage chairs and related products in 1995 with a joint manufacturing venture with a Daito Electric Machine of Japan, of relatively low domain- and low culture-specificity total of 590 out of a total of 1137 outlets (52 %). In particular, 278 (24 %) of these outlets in 2012 were run under Brookstone stores (an inorganic acquisition a few years earlier) in North America, but North American revenue accounted for less than 6 % of the Osim's total revenue. This showed that the bulk of Osim's internationalization came from its 'traditional', core set of health-care products with its massage chair being the hallmark product.

Similar to the case of Smartflex (Quadrant D), Osim has its share of competitors in the global marketplace, notably from several other Japanese manufacturers. This is perhaps an important reason why Osim never entered the Japanese market in a significant way, but has concentrated on South-East Asia and Greater China from the beginning. This kind of decisions to avoid direct competition from leading competitors in their strongholds has been shown to increase the performance of new ventures (Fan 2010). Many of the media personalities featured in Osim's advertisements have been brought to fame in Hong Kong, appealing to both audiences within Greater China as well as the Chinese communities in South-East Asia.

3.4 Quadrant D: Products of High Domain-Specificity but Low Culture-Specificity

This category of products requires some specialized knowledge to produce and/or use, but the applications can transcend cultures. One example of such products is the integrated circuit chip that is now ubiquitous in credit cards, mobile telephones and other smart-cards. Smartflex of Singapore is one such integrated chip module assembly and test service provider. The test service was developed mainly as a value-added service to the integrated chips it produced, and so the primary product remains the integrated chips themselves (and this product line remains the company's sole business at this writing). Brief telephone and email correspondences were made with a senior financial officer at Smartflex, but he was unwilling to release more information beyond what was published. The following was therefore derived from the company's annual filings (Smartflex 2009–2012).

Purchasers of Smartflex's products are typically large companies that interface with other intermediaries such as credit card companies and telephone operators. End-customers who actually use the smart cards with the embedded integrated chips

Table 4 Smartflex's sales by geography, after being founded in late 2003

Revenue breakdown	2009	2010	2011	2012
Singapore (at most[a]) (%)	46	51	60	57
Rest of Asia (at least[a]) (%)	28	28	13	23
Outside of Asia (%)	26	21	27	20
Total revenue (US$M)	18.1	26.8	25.3	25.1

[a] Smartflex only provides breakdown of sales to either North Asia or South Asia within Asia. Portion of sales from North Asia was therefore the minimum portion of sales derived from Asia outside of Singapore. Smartflex provides integrated chip module assembly and testing, of high domain- but low culture-specificity

coming from Smartflex do not simply purchase the physical chips directly from Smartflex.

An integrated chip produced according to prescribed specifications transcends the local culture of the engineering and manufacturing locations, as the use of this technology has spread to different cultures around the world. As a result of this attribute, Smartflex was able to achieve international and even intercontinental sales within a few years of its launch in late 2003. Table 4 shows that within 6 years of operation (and the first year that it made such disclosure), Smartflex earned a quarter of its revenue from outside Asia, and more so outside of its home country. This qualifies Smartflex to be a born-global firm by Shrader et al. (2000) and McDougall et al. (2003).

Smartflex's revenue intensity from outside its area of cultural affinity shows that for products that are not culture-specific, the potential for fast international or worldwide sales is realistically far higher than, say, for products that are similarly domain-specific but more culture-specific. In particular, corporate customers of integrated chip products from around the world might be interested to look at what Smartflex had to offer before finalizing their purchases elsewhere. Having customers actively seek out a specific producer is more prevalent in specialized, domain-specific products than broad-market, unspecialized products.

Certainly, being easier to capture the international market also means that a producer that is of high domain-specificity but low culture-specificity might be subject more to the vagaries of the global market place than to those of the regional economies. As a result of the globally depressed climate after the financial crises around 2008–2009, Smartflex's growth in sales stalled. In this respect, being a born-global or international new venture alone could not help advance its growth.

4 Analysis and Synthesis of Cases of Different Domain and Cultural Specificities

The case studies of BreadTalk, Eu Yan Sang and Osim showed that for many companies based in the small country of Singapore, achieving international sales is generally not too difficult. Because of the small confines of the city-state, the entrepreneurs behind these businesses were generally aware of both the limited size of their home market and the relative need to tap into the greater demand from neighbouring countries. Specifically, these three companies tapped into the ethnic Chinese communities across South-East Asia, Taiwan and Greater China, and expanded to these markets before others. Table 5 shows the cultural distance between Singapore and many international markets mentioned earlier, based on Kogut and Singh's (1988) formulation, using Hofstede's latest six dimensions: power distance, individualism, masculinity, uncertainty avoidance, pragmatism and indulgence. Expanding from Singapore to Hong Kong and mainland China incurs a small cultural distance and therefore was the logical choice for Osim and BreadTalk. Vietnam is also very culturally similar to Singapore, but has been several decades behind mainland China in opening up its economy for development.

Table 5 Cultural distance of select countries from Singapore, from Hofstede's 6 dimensions

Region	Country	Cultural distance
East Asia	Vietnam	0.331
	Hong Kong	0.536
	China	0.564
	Indonesia	0.713
	Malaysia	0.913
	Philippines	1.419
	Taiwan	1.738
	Thailand	1.843
South Asia	India	0.946
Middle East	Jordan	2.249
	Saudi Arabia	2.716
Europe	Germany	2.806
	UK	2.851
	France	3.330
North America	Canada	2.813
	USA	3.492
Oceania	Australia	3.897

Cultural distance based on Kogut and Singh's (1988) formulation, but on Hofstede's latest six dimensions: power distance, individualism, masculinity, uncertainty avoidance, pragmatism and indulgence (http://geert-hofstede.com/countries.html), downloaded in July 2014

For Eu Yan Sang and BreadTalk, expanding international sales beyond Asia has been particularly difficult because of the significant investment involved in educating the public about their products. This highlighted the difficulty of entering culturally distant markets even for these international companies.

For Osim, its deepening of markets in the Greater China region could in part be attributed to the company's conscious recruitment of media personalities in Hong Kong in many of its advertisements (Hong Kong's many local songs, movies and television programs enjoy much popularity in the Greater China region, and to some extent in Singapore and Malaysia as well). Interestingly, Osim's North American revenue has remained low for many years, and even after its acquisition of the Brookstone Group there.

For Smartflex, in spite of its relatively large proportion of sales derived from outside of Asia—far higher than for the other three companies studied, it still derived a sizable amount of sales from its home base of Singapore and South Asia. Fan and Phan's (2007) study of airline entrants in Europe, as well as Freeman, Hutchings and Chetty's (2012) study of internationalizing Australian firms showed a similar finding that cultural difference still played an important role even for firms that eventually turned out to be born globals. These lead us to the following proposition:

Proposition 1: It is generally more difficult to sell to a culturally more dissimilar market than a culturally similar one.

In general, highly culturally specific products tend to have an even harder time achieving sizable sales from culturally dissimilar markets than do less culturally specific products. For Eu Yan Sang, only after more than a century of operation was it finally able to systematically enter the international market of Australia—the first culturally distant market away from its home base in Asia, and this was possible only thanks to the large East Asian immigrant population there. Smartflex—another highly specialized and hence domain-specific but less culture-specific producer—earned a far higher proportion of sales from outside of Asia within the first 5 years of operation, but the growth has since stalled as a result of the sluggish global economy.

Figure 2 compares the proportion of total revenue deriving from outside of Asia for the four companies studied, a clear measure of the portion of revenue coming from culturally distant markets from the domestic home front. Our discussion earlier noted that while these four companies have undertaken varying degrees of product diversification, their international sales revenues have come primarily from their original, core set of products. Note that within the first 10 years of operation, only Smartflex and Osim—producers of less culture-specific products—managed to derive a noticeable portion of their total sales from outside of Asia. Only after a

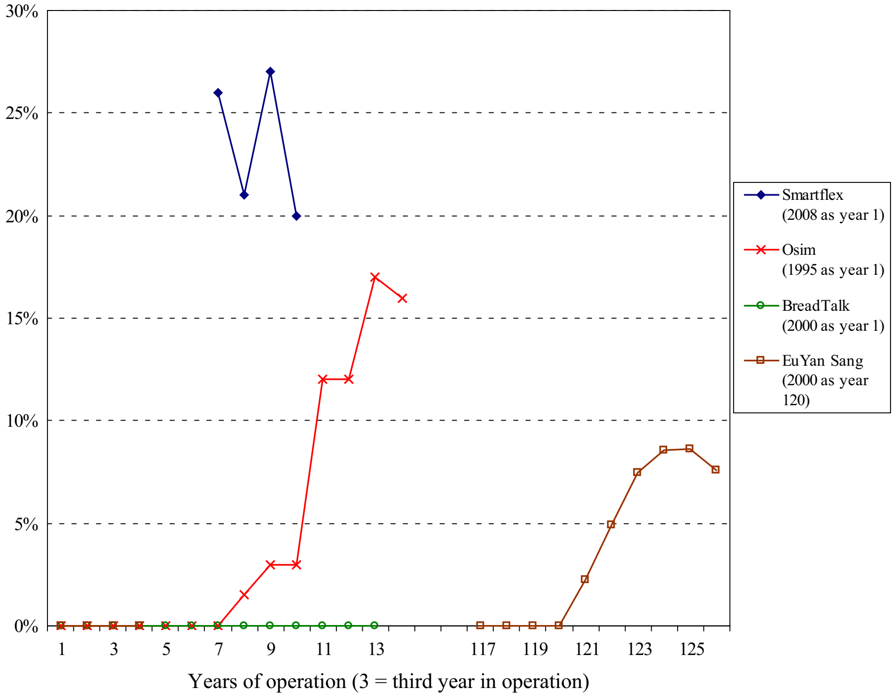

Fig. 2 Portion of total sales deriving from outside of Asia (clearly culturally distant markets)

century of existence did Eu Yan Sang (producer of highly domain- and culture-specific goods) manage to systematically enter a significant market (Australia) outside of Asia—and that was aided by the influx of Asian immigrants there in the late 1990s. Even then, Osim's and Eu Yan Sang's portion of total sales deriving from outside Asia has stalled in the most recent years, while Smartflex's figure failed to increase beyond past trends. This leads us to the following:

Proposition 2: Highly culture-specific products are more difficult to sell to a culturally dissimilar international market than less culture-specific products.

Like BreadTalk, Osim's products are subject to local competition. Being close to the customer is an important precursor of sustained profitability. In this regard, Osim indicated in its first annual report of 2000 that it by that time had 46 retail outlets within the tiny city-state of Singapore (p. 15), a number that grew rapidly to 72 in the next 3 years (the last year Osim reported Singapore-specific figures). Note that BreadTalk also opened a similar number of retail outlets in Singapore—between 52 and 97 outlets from 2009 to 2012. In comparison, Eu Yan Sang's number of retail outlets in Singapore was significantly lower, at 19 by end of 2004 and only 50 by the end of 2012—likely because only a small portion of residents in Singapore patronize traditional Chinese medicinal products compared with the more general bakery items and electric massage chairs. Nevertheless, even though Eu Yan Sang's number of retail outlets lagged behind that of BreadTalk or Osim, its revenue generated from Singapore was no less: SGD \$30 million (~USD \$21 million) in 2004 alone for Eu Yan Sang versus SGD \$41 million for BreadTalk and SGD \$43 million for Osim (2003).

In other words, the highly domain-specific nature of its products allowed Eu Yan Sang to achieve higher sales in spite of its significantly fewer outlets. In the case of the highly domain-specific producer of Smartflex, it simply did not need to open any overseas office to achieve its high out-of-Asia sales. This highlights how the more domain-specific (i.e., technically specialized) a product is, the less the producer would have to rely on traditional retail channels for distribution, and the more it could rely on specialized channels—through which the difficulty of conducting business is reduced. In other words, high domain-specificity mitigates at least some of the difficulty posed by cultural difference. This is consistent with the work of Gabrielsson et al. (2008), and of Hennart (2014). This leads to the following:

Proposition 3: For products that are equally culture-specific (*e.g., both being highly culture-specific, or both being not culture-specific*), *those that are more domain-specific* (*i.e., technically specialized*) *are easier to sell to a culturally dissimilar market than those that are less domain-specific.*

The three preceding propositions can in fact be represented in a single graph, as shown in Fig. 3. The vertical axis of this graph shows the difficulty in accessing a particular international market, while the horizontal axis shows the range of cultural difference that may exist between a potential international market and the domestic market of the focal producer. What we highlight in this graph is that depending on the domain and cultural specificity of a product, its curve may take on a different gradient. Proposition 1 suggests that all curves in this graph should generally have

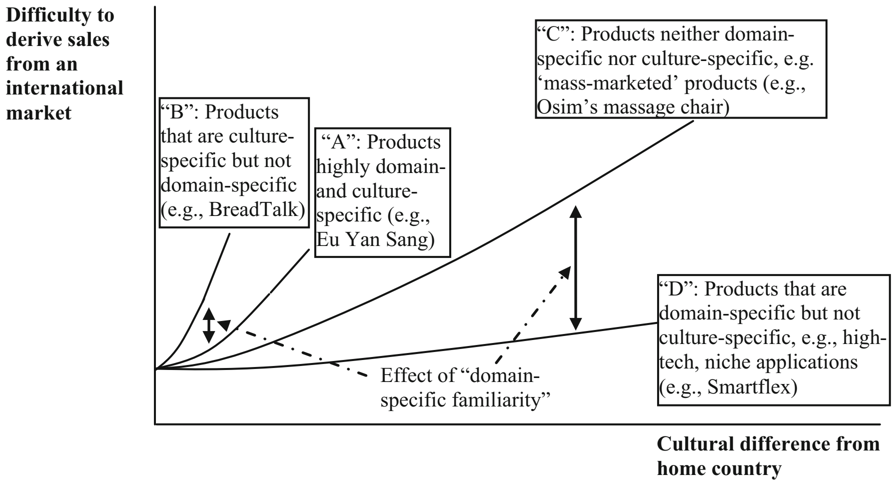

Fig. 3 Difficulty of accessing international markets for different products

positive slopes—so far conforming to the literature in international business. Proposition 2 suggests that in general, highly culture-specific products have steeper curves than less culture-specific ones. Accordingly, the curves for products in categories A and B (highly culture-specific) should be steeper than for products in categories C and D (not so culture-specific). Proposition 3 suggests that given two products of similar cultural specificity, the one with higher domain-specificity will likely have a lower gradient for the same international markets. In other words, the curve representing a product in category B should be steeper than that of category A, and the curve of product in category C should be steeper than that of category D. This reflects how domain-specificity can compensate in part for some of the increased difficulty in achieving international sales due to cultural difference (Fan and Phan 2007).

While the preceding propositions concern the ease of internationalization of products of different domain- and culture-specificities, it is important to note that the actual performance of these products depend also on the competitive landscape in the respective international markets, as illustrated in Fig. 4. Since publicly listed companies in Singapore are only required to report their sales revenue breakdown either by geography or by product segment, but not both, we were unable to obtain precisely their international revenue by product segment. However, since the bulk of international revenues for our four cases relied on the 'original', core set of products of each of these companies (as we discussed for each company), we show in Fig. 4 their total international sales revenue.

For Smartflex, even though it derived a sizable portion of its total sales from culturally distant markets outside of Asia, it has always been subject to the competitive forces of global players in integrated circuits. As the demand for integrated circuits and related services fluctuated through the financial crises, so did Smartflex's sales. As such, the international sales outside of Singapore but within

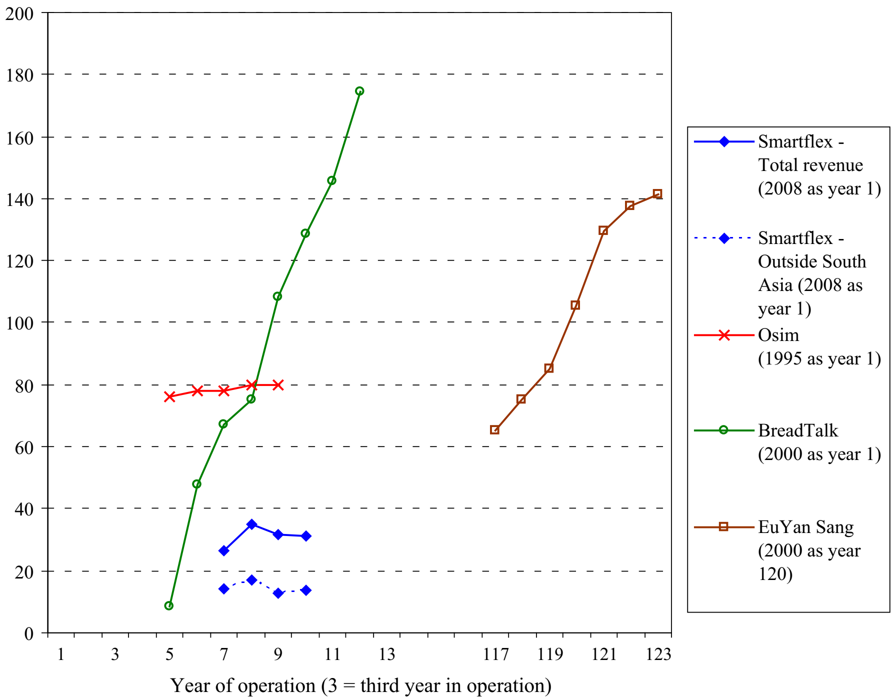

Fig. 4 Total international sales (SGD $ Million) Smartflex did not separately report Singapore sales, and hence the figures with and without South Asia (to which Singapore belonged) were shown. Osim stopped reporting Singapore sales separately from 2004 onwards, and hence only figures prior to this year were included in the figure. The bulk of international sales revenue was derived from the original set of products from these companies, not from their later diversification. These companies only report their sales revenue breakdown either by geography or by product segment, but not both—hence all of their international revenue was reported here

Asia that was achieved by Smartflex over the years have not grown to the same extent as those achieved by, say, BreadTalk (Smartflex did not separately report Singapore-based sales from the South Asia category, and if the South Asia sales are excluded, its international sales from within Asia would fall to around SGD $10 million in the corresponding years).

In contrast, the culturally specific bakery products of BreadTalk did not limit its impressive growth in international sales, as the firm benefited from the growing middle class in China and South-East Asian economies. This highlights how the ability to derive sales from an international market with relative ease may be more important than the ability to derive sales from culturally different international markets. For Eu Yan Sang, even after its successful foray into Australia, its internationalization momentum seemed to have stalled, with its actual sum of international sales growing at an increasingly lower pace in the last few years (see Fig. 2). Compared with BreadTalk's relentless increase in the absolute amount of international sales, the more domain-specific products of Eu Yang Sang may have contributed to its slowing of growth in international sales.

Extending this logic, it would be more profitable for firms founded in a large country with a reasonably homogeneous culture within and reasonably different culture from other international markets to first expand within their home country before venturing to an international market, especially if doing so involves significant upfront investment and uncertain pay-offs. This logic underscores the important inter-play between domain and cultural specificity of a product, cultural difference between the home country and other international markets, as well as the size of the home country market.

5 Discussion

The presence of multiple curves in Fig. 2 instead of only one highlights the different contingencies of the impact of cultural difference on internationalization as a function of the attributes of the focal product in question. This framework highlights how cultural difference is not the only dimension that international business scholars and business managers should concern. Domain-specificity (i.e., how technically specialized a product is) also contributes to the different level of difficulty in selling it to an international market. How quickly a firm should internationalize its products should also be a function as much of the nature of its products as it should be about the international experience of the entrepreneur. Whether this expansion within one's home country culture should involve internationalization depends to a large extent on (1) the size of the home country market relative to (2) the size of the international market of the same culture. In general, a profit-maximizing firm should consider venturing first into international markets that are of large size compared with its home market and of relative ease to enter into before other international markets that are more difficult to do so, although the decision whether or not it would be profitable to do so for a particular market would also depend on the level of competition there (Fan 2009). The pace of expansions should also be manageable and sustainable over the years (Davidsson et al. 2009; Fan et al. 2014).

Certainly, a more internationally exposed entrepreneur may also be more likely to be involved with a product that is less culture-specific. Such considerations are often tightly shaped and constrained by the personal networks, knowledge and resources of the entrepreneurs (e.g., Freeman et al. 2010; Ripollés and Blesa 2012). In other words, while continuous learning and product improvement is possible (e.g., Rose and Ito 2009), entrepreneurs do not in reality have complete freedom to redesign their products at all times to maximize commercial prospect, and hence the typical question for an entrepreneur concerns how best profit can be maximized by bringing the conceived products or services to an increasingly larger customer base, eventually beyond one's home market (e.g., Jones and Coviello 2005; Manev and Gyoshev 2010; Musteen et al. 2010). Often, once a product is brought to the public, many of its attributes cannot be readily and significantly altered in an economic manner, even though features of future versions of the product can still vary to some extent. In this manner, future decisions on internationalization may be impacted by both product characteristics as well as the firm's past experience (Rose and Ito 2009; Jung and Bansal 2009).

Moreover, our case studies also highlight the interactions and nuances between internationalization and cultural difference. The small domestic market of Singapore forces many entrepreneurs based there to look elsewhere to increase their scale of operation. Here, even culturally-specific products can be internationalized—with the help of the cultural similarity between the large ethnic Chinese communities in South-East Asia and the population in Greater China. Meanwhile, being international does not mean that all of Singapore-based firms can simply expand to markets further afield such as Europe and the Americas. To these firms, crossing the cultural divide turns out to be much more difficult than merely going international. Among the four cases studied, only Smartflex—whose products are not culture-specific but highly domain-specific—turns out to be able to derive a significant portion of its sales from outside of the culturally similar markets relative to its domestic one. For BreadTalk, the perceived risk-adjusted rewards of pursuing product diversification (into restaurants, food courts and related businesses) geared toward the Chinese community turned out to be higher than pursuing geographical expansion of its bakery retail business outside of the Chinese communities in East and South-East Asia.

By drawing our cases from publicly listed companies, there is a certain amount of selection bias in that many other companies who might have followed similar internationalization paths but failed before they reached the state of public listing would simply be excluded from our sampling frame. However, in our study, this actually reinforces an important conclusion that cultural difference is a significant hurdle for many companies: even the publicly listed companies—arguably the more successful ones—based in such a tiny English-speaking city-state (and therefore subject to international influences) can still face enormous hurdles in increasing their sales from culturally dissimilar market. In particular, Smartflex—one of the born globals has simply struggled to increase its international sales altogether as a result of the vagaries of its international product market.

For ease of comparison, our four case studies focus on physical products. Equivalently, however, the same framework can apply to services, where researchers have pointed to an equally varied picture of how internationalization impacts performance (Contractor et al. 2003; Capar and Kotabe 2003; Ruigrok et al. 2007). Some suggested certain client-relational and human capital resources can be of particular importance in internationalizing professional services firms (Hitt et al. 2006). In any case, among the most visibly and internationally entrenched companies in the service industry are prominent firms in accounting and banking—neither is culture-specific but reasonably domain-specific as both require specific adherence to financial regulations and the latter specifically requires large investments in information technology infrastructure. In other words, both accounting and banking services are highly domain-specific and relatively not culture-specific—similar to the products of Smartflex. At the other end of the spectrum, hair salons are typically locally managed and operated, although some may involve imported service items such as shampoo and conditioner. This can be attributed to the highly personalized nature of such services—hence subject to the influence of culture—or even micro- or sub-cultures within a population. It is therefore far more often to see the same international banks or large accounting firms than the same hair salons operating in multiple countries across continents. Our examples of banks and hair salons show that the more culturally specific a service, the less likely it is internationalized within a single organization. Perhaps scholars in the future could examine more closely the differences between internationalizing a product versus internationalizing a service.

The framework of domain- and culture-specificity helps provide a theoretical bridge between traditional, staged-internationalizing firms on the one hand and born globals on the other by explaining the relative ease or difficulty in internationalizing specific products. This framework highlights an important group of de novo new ventures (i.e., those without a corporate parent and no prior operating history) whose products are not so culture-specific. New ventures in this group can either go international (in which case they become international new ventures) or stay domestic at inception (in which case they become staged-internationalizing firms). The duality of expansion potentials of these new ventures has hitherto not received much attention in the literature. By highlighting this duality, this paper contributes to the international business literature by probing one layer deeper into the internationalization decision of these de novo ventures, and by theoretically accounting for some of the divergence of empirical results (e.g., Glaum and Oesterle 2007).

Certainly, by focusing our framework on cultural difference, we leave to the empirical researchers to decide on which measure of cultural difference would be best in a particular context. No one measure is perfect in all dimensions (Hofstede 2006; Javidan et al. 2006), and sometimes a simple measure of language commonality in a small geographical area suffices (Fan and Phan 2007).

An important implication in the proposed framework is that even with domain specificity, such as high knowledge intensity in the products or services concerned, new ventures are still subject to the costs of doing business in a culturally different market compared with their home country. In other words, increased domain specificity reduces but does not completely eliminate the adverse effects of conducting business in an international market. This is consistent with a broader number of studies that highlight the potentially adverse performance impacts of going international (e.g., Contractor et al. 2003; Barkema and Drogendijk 2007; Hennart 2007).

6 Conclusion

This paper introduces two important dimensions of product attributes in the context of internationalization: domain- and culture-specificity. Products can be high or low in domain- or culture-specificity, thereby being one of four broad categories in the matrix of domain- and culture-specificity. By examining four case studies, one from each of these four product categories, this paper shows that different product attributes affected the difficulty or ease with which the products of these firms were internationalized. In particular, the domain- and culture-specificity framework of product attributes helps explain gradations on how cultural difference influences the difficulty of selling a product internationally. While all four firms were able to derived significant international sales—in part because of the small domestic size of their home market in the city-state of Singapore, the domain- and culture-specificity of their products constrained the culturally different markets these products could feasibly enter. In general, more culture-specific products face higher hurdles to be systematically sold in a culturally different international market compared with the home market. However, given products of similar culture-specificity, highly domain-specific products tend to have less difficulty in selling to a culturally different internationally market than products that are not domain-specific at all.

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