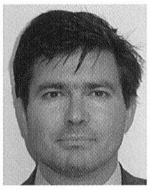
Linking business level strategy with activities and knowledge resources

Peter Massingham



Peter Massingham is the Head of the Management Department at the University of Wollongong, Wollongong, NSW, Australia. He also leads the Faculty of Commerce's International Business Program and is the Director of the Center for Knowledge Management (peterm@uow.edu.au).

Abstract Increasingly, managers are becoming aware of the importance of knowledge resources in pursuing international business strategy. Knowledge provides the capability to identify, examine and capture market opportunities. It develops competence in important activities and helps resolve problems. Knowledge is also changing the way firms compete, particularly in international business where opportunities to create value are shifting from managing tangible assets to managing knowledge-based strategies. This shifting competitive landscape is being driven by the speed of competition. Firms require a framework for managing knowledge resources in dynamic and rapidly changing market conditions. This article uses a case study approach to examine knowledge management for an Australian firm with operations throughout Asia. Based on depth interviews with the firm's 20 most senior executives, we developed a knowledge management strategy for the firm's international business operations that aimed to address these issues. Our model explains a process for managing knowledge in order to achieve a quantum change in international business strategy. This is particularly important in international business as firms' recognize the need for different strategic approaches in overseas markets. Our model extends Kaplan and Norton's concept of strategic themes to incorporate the strategic management imperative of value creating activities. In doing so, it provides a way to link strategy and knowledge resources in order to achieve significant strategic change.

Keywords Corporate strategy, Knowledge management, International business

Managing knowledge is a key to international business success (Ghoshal *et al.*, 2000). Knowledge provides the capability to identify, examine and capture market opportunities. It develops competence in important activities and helps resolve problems. Knowledge is also changing the way firms compete, particularly in international business where opportunities to create value are shifting from managing tangible assets to managing knowledge-based strategies (Kaplan and Norton, 2001). This shifting competitive landscape is being driven by the speed of competition. Firms require a framework for managing knowledge resources in dynamic and rapidly changing market conditions.

Traditionally, managers have considered strategy to be about establishing and defending an industry position to maintain competitive advantage (Porter, 1985). In international business, this translates to corporate level strategy decisions of scope, e.g. location and product, and business level strategy decisions about how to achieve differentiation or cost leadership. The objective of firms following this traditional strategy model is to identify market opportunities and

> Knowledge provides the capability to identify, examine and capture market opportunities.

capture the benefits gained through speed to market, e.g. first mover advantages. However, firms can no longer sustain competitive advantage in this way for several reasons. First, most firms know that the world's most attractive overseas markets are China, India, parts of South America and Eastern Europe and are either already there or about to enter. Second, while in the past Western firms could expect to have an advantage over local firms in these markets, this is no longer the case because they are now competing with other multinationals, who are likely to have similar or superior capabilities. Third, some argue that the growth global markets are too dynamic to maintain superior industry position or competition is too intense for an organizational resource to provide anything more than temporary advantage (Cooper, 1995). Therefore, benefits gained through speed to market and traditional sources of advantage are being eroded and firms need to find alternative ways of competing in international business.

Globalization has increased the volume of market opportunities but it is also changing the nature of strategy, largely because traditional product life-cycles will be increasingly shorter, requiring a more accelerated recovery of investment (Lorange, 2000). Under these dynamic market conditions, managers require a new model of strategy to create sustainable competitive advantage. Knowledge management provides a solution to strategic management in these turbulent times. The knowledge economy has replaced the industrial age and knowledge-based assets are now the major sources of competitive advantage in international business. In knowledge-based competition, value creation occurs through intangible assets such as customer relationships, responsive operating processes, innovative products and services, information technology and databases, and employee capability, rather than traditional tangible assets such as inventory, property and plant. However, there is an enormous variety of knowledge available to the firm and managers need ways to evaluate knowledge resources. Resource-based view (RBV) logic argues that firms can create competitive advantage through decisions on resource acquisition and deployment. In order to make the correct decisions, managers need to be able to identify their most valuable knowledge resources, so that they can prioritize resources.

This raises several questions. How can firms develop a sustainable advantage in dynamic rapidly changing market conditions? How can firms use knowledge resources to create competitive advantage? What are the components of an international knowledge strategy? We address the above issues in this article and explain how managers can implement systems and practices that allow their organization to benefit from knowledge in international business.

Theoretical model

Knowledge in the context of international business

We begin by explaining the key terms that are relevant to our arguments. First, we follow Schulz' (2001) pragmatic perspective and assume that knowledge arises through experience. Traditionally, researchers have examined the role of knowledge in international business in terms of experiential learning or knowledge creation and transfer. The main contribution of the internationalization process literature is the concept that the internationalization of the firm often occurs in a number of evolutionary stages, and that firms gain knowledge through experience (see Johanson and Widersheim-Paul, 1975; Rugman, 1980; Andersen, 1993). This knowledge allows the firm to make sensible decisions necessary to expand international business operations: progressing from market exploration, to the stage where the firm has gained a sustainable competitive position in its overseas market(s). A growing number of researchers have criticized the internationalization process literature for failing to adequately explain the experiential knowledge components necessary to progress through the stages (Lam and White, 1999). In terms of the knowledge management literature, the main contribution has been to understand how knowledge is created and transferred. In international business, the firm needs to source and share knowledge within a complex business network, including subsidiaries, partners, suppliers, customers, Government, and even competitors. Therefore, much of the recent knowledge management research has focused on the process of organizational learning across organizational boundaries, something that creates particular management challenges (see Nonaka and Takeuchi, 1995; Teece, 1998; Inkpen and Dinur, 1998), particularly in an international context.

The literature on the internationalization process and knowledge management fails to resolve several important issues. First, what does the firm need to do to achieve its international business strategy? Second, what does the firm need to know? Recent studies explain that the ability to execute strategy is actually more important than the quality of the strategy itself. One study of prominent CEO failures explained that ''in 70 percent of cases, the real problem isn't bad strategy ... but bad execution'' (Charan and Colvin, 1999). This high proportion of failed strategy execution is because managers are doing the wrong things to implement their strategy. They are persisting with managing physical assets (e.g. plant and inventory) as the way to create value at a time when the value created by tangible assets is continually reducing. Kaplan and Norton argue that the reason many firms fail in their strategy implementation is that they are trying to execute strategies designed for industrial age competition, e.g. creating and sustaining an industry position, when the 21st century requires strategies designed for knowledge-based competition (Kaplan and Norton, 2001). Further, where strategies are appropriately designed for knowledge-based competition, managers often fail to execute the strategy because they continue to think that strategy is about establishing and defending industry position. The solution is to recognize that intangible assets, such as knowledge, are now the key source of competitive advantage.

Towards a knowledge management strategy

On their own, resources do not create any value for the organization. For example, human resources may sit idle at their desks unless given something to do armed with tools and processes to work with. Resources need to be combined with other resources to create capabilities (Grant, 1996). These capabilities are employed to enable the organization to perform activities. Superior performance comes from developing unique, value creating activities (Porter, 1996). Therefore, in order to develop a knowledge strategy, it is necessary to understand how knowledge resources are used to perform the organization's key activities and the value they create.

Knowledge only becomes valuable if it is used to create superior capability in an activity that is valued by customers. Kaplan and Norton's concept of strategy maps provides a useful framework for linking strategy, activities, and knowledge resources (Kaplan and Norton, 2001). Strategy maps are a way ''to provide executives with a framework for describing and managing strategy in a knowledge economy.'' The key components of strategy maps are strategic themes, which Kaplan and Norton describe as ''the drivers of knowledge-based strategy.'' Strategic themes are ''the recipe for combining the intangible ingredients of skills, technologies and organizational climate with internal processes, such as sourcing and distribution, to create tangible outcomes-customer loyalty, revenue growth, profitability.'' The themes reflect what the management team believes must be done to succeed and allow organizations to segment their knowledge-based strategy into several categories, e.g. build the franchise, increase customer value, achieve operational excellence, and be a good corporate citizen. The relative importance of these themes will vary for each organization. The themes providing a starting point for identifying the knowledge activities that may lead to sustainable competitive advantage.

The resource-based view (RBV) and the knowledge-based view of the firm provide ways to identify what the firm must know to implement knowledge-based strategies. According to Barney, resource based logic can help managers ''more completely understand the kinds of resources that can generate sustained strategic advantages'' (Barney, 2001). He adds that this assists managers to ''identify ... the most critical resources controlled by the organization ... and to nurture and maintain these resources.'' RBV logic argues that inter-firm performance differences occur through heterogonous access to valuable resources. This creates ''isolating mechanisms'' representing entry barriers at the industry level and mobility barriers at the industry group level, that sustain the firm's competitive advantage (Rumelt, 1984; Mahoney and

Pandian, 1992). From a knowledge management perspective, the same logic applies. Managers make choices about knowledge resources leading to organization heterogeneity and sustainable advantage. Valuable knowledge resources are then combined to create superior capabilities leading to above average organization performance.

The RBV has been criticized for its lack of managerial manipulation and even leading RBV researchers accept the problem is that a "firm's strategic advantage is based on causally ambiguous resources, and managers in that firm cannot know, with certainty, which of their resources actually generate their strategic advantage" (Priem and Butler, 2001; Barney, 2001). Part of the problem is due to the "exogenous determination of value" within the RBV literature. Critics also argue that resource advantages are highly context dependant, and that what is valuable in one industry is not valuable in another. The same criticisms apply to the management of knowledge resources. While there have been attempts to measure the contribution of knowledge to firm performance (Sveiby, 1997), managers are still unsure how to evaluate their most important knowledge resources. The inability to manage knowledge comes from the failure to measure the cause and effect relationship emerging from knowledge resource decisions. Despite this, it is important to parameterize the value variable, so that managers may estimate resource value when making strategic decisions about accessing or developing knowledge resources. Managers are faced with huge volumes of information and knowledge, particularly in the dynamic, complex international business environment. In order to manage this resource, managers require a way to prioritize knowledge resources for strategic action. We suggest this dilemma may be resolved by linking strategy with knowledge activities and resources.

Therefore, before we began interviewing executives within our case firm, we had identified several constructs that formed the basis of our questions. First, we followed traditional strategic management definitions to examine the nature of our case firm's strategy. Second, we used the concept of strategic themes to help us identify the firm's most important activities. Third, we used RBV logic to explore the type of knowledge resources necessary to perform these activities well. However, we were unsure how to evaluate knowledge resources to enable managers to prioritize them for acquisition and deployment decisions. We were also unsure about the cause and effect relationship between strategy, activities and resources within the dynamic context of international knowledge management. Our ideas in these areas developed from the research data and in our discussions with our case firm executives about our research findings.

Our case firm

Our case firm provides an excellent opportunity to explore knowledge strategy in international business. It is a leading Australian firm in the building materials sector. It has held a dominant market position in its domestic market since the inception of the industry. It has operated in Asia for more than 30 years and now has businesses in six countries. The firm is changing its strategy from operational excellence to customer focus in response to changing market conditions. It wants to achieve market growth in Asia and, to achieve this it must improve its ability to create value for its customers. But this presents major challenges for the firm. Since its inception, it has operated as a commodity business where its focus has been on achieving production efficiencies. Its technology advantage has been eroded and it can no longer maintain cost leadership. It has reached the productivity frontier where competitors have imitated the firm's processes and technologies leading to competitive convergence and a destructive war of attrition. With no further cost cutting available in a commodity market, the firm faces a critical strategic problem: how to re-invent the company and ensure its survival? The answer is not product related because there is no source of differentiation. The solution is service related. It must change its business model to focus on service, while maintaining

"On their own, resources do not create any value for the organization."

threshold standards in production. In order to achieve this quantum shift in strategy, it must develop an intimate knowledge of its customers and its markets and it must learn fast.

Research model

The case study research method was chosen because our goal in this investigation was to gain an in-depth understanding of both the phenomenon (knowledge management) and the context (international business decisions) in which the phenomenon is occurring. The research was based upon face-to-face and telephone depth interviews with 20 senior executives of the case study organization.

Interviewing the managers

The executives interviewed were those responsible for business strategy and activities within their firm, and were at the President (country), Vice-President, and Executive General Manager level. The interviews used a semi-structured questionnaire to allow for comparisons across the sample. The interviews lasted between two and four hours. Discussions were wide-ranging but specifically covered:

- **International strategy** – What was the firm trying to achieve? How was the firm trying to compete, its strategic posture, i.e. global, multi-domestic, or transnational strategy? What was its source of competitive advantage?
- **Activities** – What are the most important activities the firm needs to do to achieve its strategic objectives? What processes underlie these activities? We used the concept of strategic themes to identify the most important activities in the following way. First, we began with a list of key performance indicators from the firm's "strategic plan." The senior executives were required to report weekly against performance in each of these indicators and were, therefore, familiar with each activity. Second, we asked respondents to rank these activities in order of importance, in terms of their contribution to the firm's strategy. Third, we categorized each activity into strategic themes, e.g. grow the business.
- **Knowledge resources** – What does the firm need to know to perform these activities well? How does the firm acquire this knowledge? How should the firm acquire this knowledge? We used resource-based view logic to help understand the linkage between knowledge resources and activities. For example, each activity required "bundles of resources." We asked questions about the sub-processes underlying each activity, in order to properly understand the nature of the knowledge resources required to perform the activity well.
- **Firm performance** – The firm's satisfaction with its international business activities, and the reasons for this perception, linked to knowledge based strategy.

The respondents' answers to questions were written down by the interviewer, later coded, and analyzed using pattern-matching techniques. As soon as we had analyzed the data, we prepared a progress report. We then discussed our findings with our case firm's three senior executives in a workshop. The majority of the research findings that follow are based on the ideas that emerged from the depth interviews. However, in some areas, for example the identification of strategic themes, the firm's senior executives clarified our thinking during the workshop. We also sent a copy of our report to all respondents for comment. Finally, we forwarded a copy of this article to the President of our case study firm for comment prior to submission. In this way, we had a number of checkpoints in the evolution of our thinking that achieved verification through triangulation of the data.

Strategy

> "We have no choice but to be a customer solutions focused business. As a commodity business we will die. It is difficult to sustain technology differentiation, so we must compete based on our marketing effort. We have an advantage in that we sell into the market at different stages in the value chain from our different businesses. We have the opportunity to provide a total customer solution because of our channel position." (*Vice-President*)

> “Knowledge only becomes valuable if it is used to create superior capability in an activity that is valued by customers.”

Our first step in developing an international knowledge management strategy for our case firm was to clarify its strategy. We did this in a number of ways. First, we determined what the firm was trying to achieve. Its objective was quantum market growth in Asia. It could not achieve this in its domestic market – Australia – because the market was relatively small and stable and it was facing increasing competitive threats from imports. In order to achieve quantum growth, the firm must develop either new products or new markets or preferably both. Second, we considered whether the firm's existing strategy could be sustained. It felt it had competitive advantage through its industry position. It had established excellent brand awareness from being in Asia for more than 30 years. It also had better geographic and value chain coverage than its competitors, most of whom were smaller domestic companies that operated in only one Asian country and in only one business area. However, it felt that it could only achieve incremental growth if it continued to rely on these sources of competitive advantage. It also felt that it was becoming increasingly difficult to maintain this industry position, due to competitor imitation, and it required a new way to compete. Third, we identified the firm's generic strategy. Historically, our case firm has adopted a cost leadership strategy based on technology advantage. Unfortunately for our case firm, its product – building materials – was essentially a commodity that was very difficult to differentiate. It had developed innovative product variations, that had allowed it to charge a small premium in certain market segments, but this was only likely to bring incremental growth. Under the changing market conditions caused by its competitive advantage being eroded, the firm had to react quickly to re-invent itself, or it would not survive. Faced with the strategic challenge of differentiating a commodity product, the firm tried to identify how it could create value for its customers, other than through product differentiation. It decided on the strategy of offering "total customer solutions" based on trying to resolve customer problems. Fourth, we checked the "alignment" amongst senior management. This was critical for our case firm because it was undergoing such a dramatic change in strategy. Our case study President felt that it was very important that all senior managers supported the "total solutions provider" strategy.

Strategic themes

> "In China, we sell materials to new factories in the new economic zones. The building companies get a contract to build the factory, we supply the materials. So the end user just wants a big, basic factory or warehouse. We want to supply the whole building. Lets work with the customer to give them an alternative solution that generates more business for us. Anything that cuts cost and saves the customer management time creates value. If he can get his building built, get difficult grades, achieve symmetry, and a seamless delivery, he is happy. In the commercial segment in Asia, it is all about cost, it is about getting it built quickly and efficiently, it doesn't have to look good – speed of erection is the key." (*Vice President*)

The second step was to identify what our case firm needed to do to achieve its strategy. Our challenge was to identify which knowledge-based activities could create unique value for our case firm. We began with Porter's idea that strategy is the unique and sustainable way by which organizations create value. Kaplan and Norton call these activities "strategic themes": what the management team believes must be done to succeed. We identified our case firm's strategic themes by asking executives to identify the firm's most important activities. They evaluated the importance of each activity against the firm's strategy of becoming a "total solutions provider." At the completion of this exercise, two activities emerged as most important: customer relationship management and business development.

Customer relationship management (CRM) allows the firm to increase customer value by expanding, deepening, or redefining relationships with existing customers. It requires a business process that develops and maintains an intimacy with the customer. The CRM process should explain to all staff with customer contact, how to build customer relationships and how to capture customer knowledge that can be used to design total solutions for them. This requires alignment between the firm's internal activities and the firm's value proposition that may be done through customer management processes. Effective CRM would allow the firm to sell more to existing customers in existing markets, i.e. market penetration, by selling the whole solution, not just part of the solution. In this context, the whole solution is the design, supply and construction of the whole factory, not just the roofing or walling materials.

Business development enables the firm to make large-scale investment decisions. It requires a process that identifies, evaluates and monitors business opportunities. The business development process should explain to all staff involved in large-scale investment decisions how opportunities may be generated, what information to gather to evaluate the opportunity, how to write the business proposal, how to evaluate a proposal, how decisions are made, how to implement decisions, and how to monitor progress. Effective business development would allow the firm to sell to new customers in new markets, i.e. a diversification strategy in new countries. It also has an important role to play in communicating with the investor market as explained by this executive:

> "The effectiveness of our business development process communicates to the market the credibility of the range of growth opportunities that we are trying to exploit. Credibility is the key. Investors need to have confidence in our growth strategy. This comes from the processes we use to identify our growth opportunities and in delivering results from our investment decisions. If we get the business development process right, we make the right decisions, and the outcomes are we deliver on the growth strategies that we promised to our investors." (*Vice President*)

At the workshop with our case firm's senior executives, we discussed the role of technical knowledge in creating a sustainable competitive advantage for the firm. We found that the management of technical knowledge provided further insight into the relationship between strategy, activities and knowledge resources. Historically, the firm's technical knowledge has been pooled into a research and development unit staffed by research scientists and engineers. However, this unit has not delivered value for the firm as explained by the President:

> "Despite millions of dollars invested in R&D over the years, 90 percent of our revenue is still generated by two core products that were developed 30 years ago. The R&D unit has been too concerned on achieving breakthrough product innovations that would allow us to charge substantial premiums. They wasted too much money on this. Instead, they should have looked at incremental improvements. Our product is a commodity. They were looking at value creation in the wrong way. Our opportunity to create value is not product-related." (*President*)

The problem was that our case firm considered research and development as a separate function and, in our context, another strategic theme. However, the President's comment illustrates that while the firm possessed valuable technical knowledge resources, they were not being used effectively. In order to address this problem, the firm had to reconsider the role of its technical knowledge in achieving its strategy. It could not achieve quantum market growth through product innovations. Therefore, its technical knowledge was being managed in the wrong way. This could be addressed by using technical knowledge as an enabling function for the two key strategic themes, rather than as a separate theme. Our case firm executives identified two ways that the firm's technical knowledge could be used to create value in the two other key processes. For CRM, technical staff could be used to create innovative solutions for customers that are not product-related. For example, materials that are easier or quicker to erect. For business development, technical staff could help in ideas generation, and in evaluating opportunities from a supply chain and operational perspective. The contribution of these knowledge resources is then to generate business ideas, in conjunction with operational staff, but also to assess whether ideas may be implemented, e.g. whether the firm can manufacture a "customer solution" profitably.

This illustrates the importance of linking strategy with knowledge resources. In this example, he wanted the firm's technical knowledge to facilitate the change in strategy toward a "total solutions provider" by focusing technical staff on customer service and business opportunities. It also illustrates the changing nature of strategy. The traditional way that the firm used these technical knowledge resources was to try to defend its industry position through product variations or production efficiencies. This is no longer sustainable due to competitor imitation and, therefore, valuable knowledge resources are wasted. This shows a more effective way of using these resources was to employ them in key knowledge-based strategies.

Identifying knowledge resources

> "In Taiwan, it is not about manufacturing excellence or operational efficiency. We have best practice production processes in Taiwan and everyone knows how to do it so we can't differentiate here. Our focus must be to compete on relationships with customers, building our brand, and developing new products that meet our customers' changing needs. For example, the traditional industrial market is leaving Taiwan; MNCs are no longer investing in building factories here, they are going to China. The only ones left are the high tech manufacturing plants e.g. computer chips. They never want our traditional products. We have to develop a total solution for them, a new way of business." (*President*)

The third step was to identify our case firm's key knowledge resources by asking executives what our case firm needed to know to perform its strategic themes well. From this exercise, market knowledge and customer knowledge emerged as the most important knowledge. The firm needed a deep understanding of its markets in order to make sensible large-scale investment decisions, while it needed an intimate understanding of its customers in order to know how to provide total solutions. However, these knowledge areas are very broad and during the interviews managers would ask: what do we need to know about our customers? In answering this question, we found it useful to identify the process steps underlying the strategic themes. For example, for large-scale investment decisions, our case firm's business development process had seven steps: idea generation; information gathering; proposal preparation; proposal evaluation; decision; implementation; and control. For the total solutions provider strategy, our case firm's customer relationship management process had eight steps: segmentation; targeting; positioning; sales; service expectation; service delivery; performance review; and improvement. Details of these knowledge resources and the processes necessary to manage them are provided in Table I.

Specifically, Table I illustrates how to break knowledge resources into manageable components. By identifying knowledge components, the firm makes a leap from strategy to action. Up to this point, we have been identifying strategic knowledge resources, that is, what our case firm needs to know to perform well in the key activities necessary to achieve its strategy. By identifying the knowledge components underlying each knowledge resource, the firm may "operationalize" them by explaining specifically what information is needed to develop the firm's capability in this resource area. For example, the first step in executing market information gathering is to identify what macro- and micro-environment information is needed. Table I also includes several supportive actions explaining the management process for each knowledge component. For example, identifying what information is needed requires templates to ensure consistency and rigor in the data capture. Together, these knowledge components and supportive actions can help establish a solid foundation for an effective international knowledge strategy by identifying the actions necessary to execute the strategy and develop competence in the knowledge resources.

Evaluating knowledge resources

RBV logic explains that the firm must prioritize its resources in order to make strategic decisions about resource acquisition and allocation. As with any organization, our case firm has finite resources and must decide how best to use them. By identifying what market and customer knowledge was most important, our case firm could take action to ensure it had sufficient knowledge resources necessary to achieve its strategy.

Table I Identifying and managing knowledge components

Knowledge resource	*Knowledge components*	*Supportive actions*
Market information gathering	What information is needed? ■ Macro-environment data ■ Micro-environment data	Templates: ensure consistency and rigor
	Who has got the information? ■ Accurate ■ Timely ■ Accessible	Evaluation: ensure the best information is identified
	Get the information ■ Access it ■ How to manage the knowledge transfer	Capture: ensure the knowledge is captured and used
Customer service expectation	What does the customer want? ■ Selection criteria ■ Service level attributes ■ Service relationship	Expectation: ensure the firm understands customers' needs
	How can the firm create value? ■ Can the firm deliver what the customer wants? ■ Where is the opportunity to create value? ■ What is the contribution to the firm?	Alignment: ensure the firm may benefit from meeting customer needs

Of the seven steps involved in the firm's business development process, the second, information gathering, involved the most important knowledge. It was considered the most important because of its crucial role in the business development process. The quality of the information gathered directly affects all other process steps, particularly the proposal evaluation and decision. Of the eight steps involved in the customer relationship management process, the fifth step, service expectation, was the most important because it specifically involves customer value creation. It also takes the firm's focus away from the product, which is difficult to differentiate, toward the customer relationship.

We also checked each knowledge component against RBV logic. They may be considered a source of sustainable competitive advantage if they result in "isolating mechanisms and uncertain imitability" (Rumelt, 1984; Mahoney and Pandian, 1992). Imitation is the most direct form of competition, so for competitive advantage to be maintained over a reasonable period of time, barriers to imitation must exist. Barriers are most likely to occur when it is difficult to identify the reasons for the firm's success, that is, causal ambiguity, because attempts to imitate are subject to uncertain success. The same logic applies to knowledge resources. Our case firm's knowledge can be considered to create a sustainable source of competitive advantage, if the firm has barriers to imitation in each knowledge component, that creates entry barriers at the industry level or mobility barriers at the industry group level. For example, the firm has created knowledge barriers in its process of information gathering because it takes a holistic supply chain view of the market and its opportunities. Similarly, it has created knowledge barriers in its understanding of customer service expectations because it owns one of its main customers and can use this knowledge to understand other customers.

Therefore, organizations face numerous challenges in the development of knowledge strategy within an international business context. We found that the internationalization process and knowledge management literature was limited in its usefulness in developing a strategic view of international knowledge management. This literature's focus on the process of learning and knowledge creation and transfer is too static for today's dynamic, changing international market conditions. Researchers have tended to focus on isolated problems rather than solutions, e.g. barriers to knowledge transfer. There has also been a lack of research linking strategy with knowledge management. In this paper, we have tried to address these issues and have focused on knowledge activities, i.e. what the firm needs to do, and knowledge resources, i.e. what the firm needs to know, in order to achieve its strategy. In doing so, we have tried to link strategic management theories, e.g. the resource-based view and the knowledge-based view of the firm, with theories on learning and knowledge management. We also address a critical failure in strategy execution identified by Pfeffer and Sutton (2000) – the failure to act – by linking strategy with activities and resources. Figure 1 provides a summary of our model for managing this process illustrated by our case study firm.

Managers attempting to develop an international knowledge strategy must:

(1) clarify the firm's strategy;

(2) identify the unique, value creating activities necessary to achieve this strategy;

(3) identify knowledge resources necessary to perform these activities well;

(4) prioritize the knowledge components underlying each knowledge resource; and

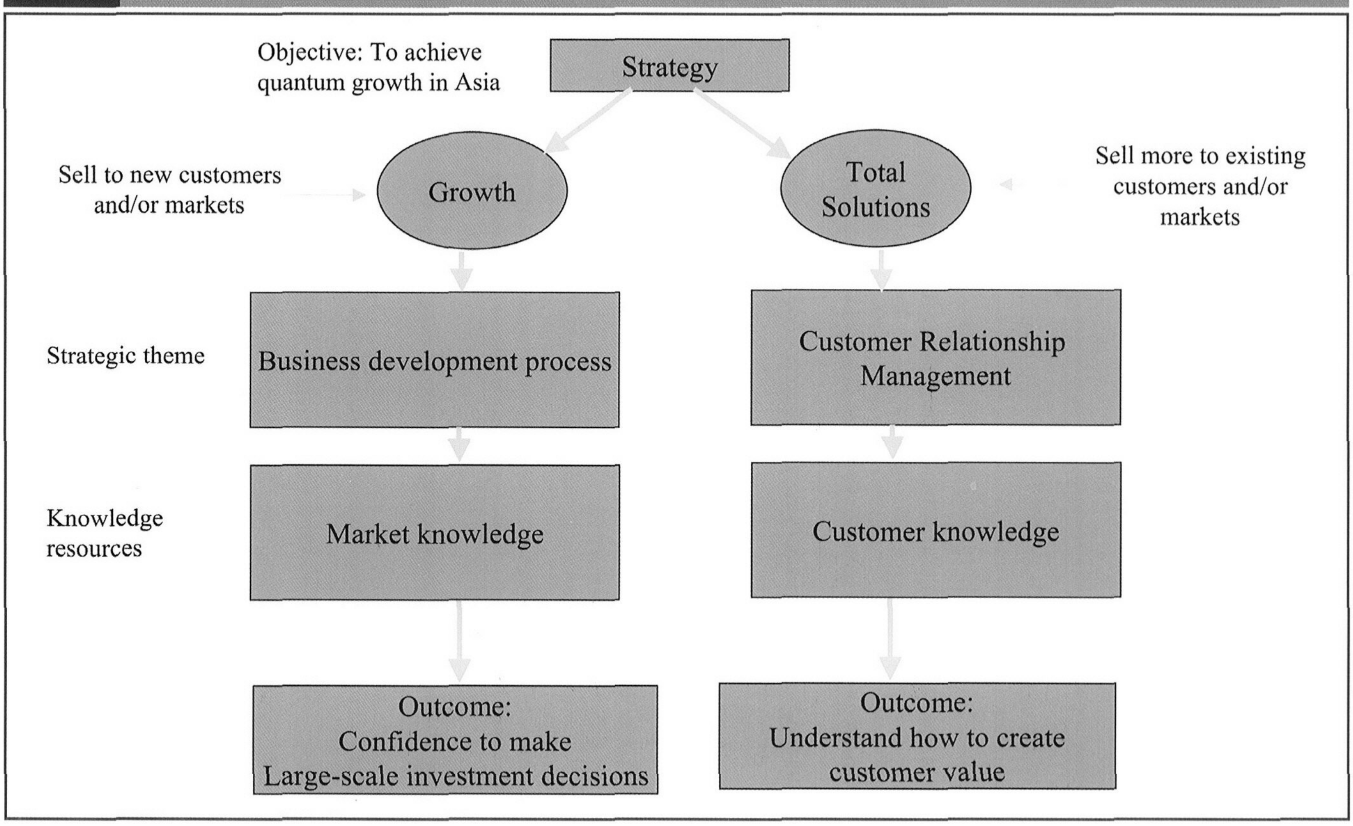
(5) decide on how to access these knowledge resources.

We have suggested various processes that can assist the firm develop an international knowledge strategy under each of these five steps.

A knowledge management strategy for international business

Researchers have yet to develop a strategic framework for managing knowledge within an international business context. The literature has tended to focus on identifying barriers to international knowledge creation and transfer within the intra-firm and acquisition contexts, supplemented by some recent work on purchasing knowledge resources. While Goh (2002) has developed a sound framework for effective knowledge transfer, research has tended to focus on isolated problems rather than solutions.

Figure 1 A model linking strategy, activities and knowledge resources



In this article, we have drawn upon theoretical and empirical research in a range of areas including the internationalization process literature, and the resource and knowledge based theories of the firm. We have identified a process for linking strategy with activities and resources (see Figure 1). In addition, the article has identified ways that knowledge resources can be parameterized, in terms of identifying manageable components and supportive actions (see Table I). We have shown how knowledge resources can contribute to international business performance through achieving a quantum change in strategy, that is, to become a total solutions provider, by developing competence in key knowledge activities and knowledge resources. Finally, we indicate several steps that organizations should take to prepare an international knowledge management strategy (see Table II).

Specifically, several methods for enabling organizations to manage their international knowledge resources are listed in the table: including clarifying strategy, identifying strategic themes, identifying important activities, understanding the nature of important knowledge, creating value that addresses the strategic themes, and deciding on how to access valuable knowledge resources. In addition, each method is put into practice through the use of several supportive actions. For example, the identification of strategic themes is achieved through action steps such as determining and agreeing on business level strategy, identifying what needs to be done to achieve this strategy, categorizing these actions within the strategy theme definitions, i.e. build the business, customer intimacy, operational excellence, and corporate citizenship. Such efforts should ensure the organization understands what it needs to do and know to implement its strategy. Together these methods and supporting actions can help establish an international knowledge management approach that will enable mangers to make knowledge resource decisions with confidence.

Our paper contributes to the internationalization process literature by suggesting a method for identifying the experiential knowledge components necessary to progress through the stages, i.e. strategies themes. It also contributes to the knowledge management literature by proposing a model that links strategy, with activities and knowledge resources. It identifies several areas for further research including empirical investigation into the cause and effect relationships between strategy, activities and knowledge resources; and the parameterization of knowledge resource value.

Table II Preparing an organization for an international knowledge management strategy

Method	*Actions*
1. Clarify strategy	■ Articulate the firm's objectives ■ Can the firm's existing strategy be sustained? For example, is establishing and defending an industry position still sustainable? If not, how the firm can create new market opportunities with existing and new customers? ■ Decide on the generic strategy: cost leadership or differentiation ■ Ensure agreement amongst the management team over what the firm trying to achieve
2. Identify strategic themes	■ Determine what the firm needs to do to achieve its strategy: what are the unique, value creating activities? ■ Examine how these activities add value for the firm
3. Identify knowledge resources	■ Identify what the firm needs to know to perform its strategic themes well: i.e. knowledge resources ■ Design the process steps underlying each knowledge resource ■ Identify the knowledge components underlying each process step
4. Evaluating knowledge resources	■ Consider which process steps most contribute to the firm's strategy ■ Identify which process steps create barriers to imitation
5. Knowledge decision	■ Decide whether to develop, acquire or purchase the knowledge resources in the process steps that are most valuable

Firms seeking a sustainable competitive advantage in today's dynamic international business environment must ensure they understand the value of their most important resource – knowledge. They need to manage their knowledge resources, by understanding the relationship between what they are trying to achieve, the key business processes necessary to pursue this strategy, and what they need to know to perform well in these areas. Knowledge-based strategies transfer the firm's focus away from creating and defending industry position to seeking new market opportunities, re-inventing the company, and finding new ways to compete. Knowledge resources can create a sustainable competitive advantage in dynamic, changing international markets through the creation of knowledge barriers to imitation in key knowledge components (see Table I). Firms can use these knowledge resources to establish competitive advantage by developing competence in key value creating activities (see Figure 1.) Finally, managers can develop an international knowledge management strategy by following processes that link strategy, with activities and resources (see Table II). Knowledge is now the organization's most important resource. Understanding how knowledge creates sustainable competitive advantage will become the international manager's most important skill.

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