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THE RESOURCE BASED VIEW AND TRANSNATIONAL TECHNOLOGY STRATEGY

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Abstract

Despite its considerable appeal, the Resource Based View of the firm as currently articulated is inadequate for the job of explaining transnational technology strategy, although it does explain some phenomena. Its explanatory power can be significantly increased through the inclusion of a resource portfolio perspective and by the acknowledgement that imitation as well as the pursuit of the unique can be a viable resource strategy.

THE RESOURCE BASED VIEW AND

TRANSNATIONAL TECHNOLOGY STRATEGY

In recent years R&D, like most other business functions, has become increasingly internationalized (Chiesa, 1996a, b; Coughlan & Brady, 1996; Dalton and Serapio, 1995; Florida, 1997; Gates, 1995; Granstrand, Hakanson and Sjolander, 1992; Kuemmerle, 1997; Medcof, 1997; Pearce & Singh, 1992a, b; Pearson, Brockhoff, and von Boehmer, 1993; Zander, 1997). Initially, the location of technical work outside the home country was driven primarily by the need to provide offshore marketing and manufacturing activities with appropriate technical support. More recently, the appropriation of cutting edge and/or cost effective technologies located at extra-national sites has come to be an important motivator, particularly in technology intensive industries. Many transnational firms now have numbers of technology units located in several countries and their effective management is crucial to competitive success (Albertini and Butler, 1995; Bartlett & Ghoshal, 1990; Granstrand, *et al*, 1992; Hakanson, 1990; Kuemmerle, 1997; Malnight, 1995; Ohba, 1996). Given the increasing numbers of off-shore technology units and the large investments of resources they represent, and the wide variety of roles they can play, there is a pressing need to develop articulated strategies for their deployment and to integrate those strategies into the general strategic plans of the firms of which they are a part. Managers and scholars now give high priority to transnational technology strategy and seek models and theories to help structure their understandings and develop their plans. (Abetti, 1997; Chiesa, 1996a, b; Cusumano and Elenkov, 1994; Dalton and Serapio, 1995; Florida, 1997; Gassmann and von Zedtwitz, 1998; Gates, 1995; Granstrand *et al*, 1992; Kuemmerle, 1997; Penner-Hahn, 1998; Rhyne and Teagarden, 1995; Zander, 1997).

Recently, the Resource Based View (RBV) of the firm has received increasing attention as a promising model for explaining strategic decision making in, and the strategic behaviour of, organizations (Amit and Shoemaker, 1993; Barney, 1991; Dierickx and Cool, 1989; Peteraf, 1993; Rumelt, 1984; Teece, Pisano and Shuen, 1997; Wernerfelt, 1984, 1995). The RBV proposes that sustained competitive advantage comes from having a set of unique resources that create value in the marketplace. According to Barney (1991), a resource is valuable when it enables strategies that improve efficiency and effectiveness (ie. exploit opportunities and/or neutralize threats) and uniqueness derives from being **rare** (at most, only a few other firms have the resource), having **imperfect imitability** (other firms cannot imitate or acquire it) and **non-substitutable** (there are no other strategically equivalent resources available to other firms).

The widely held optimism concerning the potential of the RBV as a basis for strategic understanding makes it a natural for consideration by those concerned with the development of transnational technology strategy (Cheng, 1998; Duysters and Hagedoorn, 1998; Florida, 1997; Henderson and Cockburn, 1994; Kuemmerle, 1998; Medcof, 1998; Methe and Yoshihara, 1998; Toyama and Methe, 1997). The expectation of the usefulness of the RBV in this context is strengthened by the frequent discussion of technology resources by RBV theorists. However, to date, there has been no systematic and extensive attempt to assess the value of the RBV for understanding transnational technology strategy and management. Such a systematic approach is necessary to rigorously evaluate the claims of the optimists.

This paper will demonstrate that although the RBV has considerable promise as a theory for explaining some of the empirical findings concerning transnational technology strategy, it has significant limitations. Those limitations amount to general weaknesses of the RBV which must

be remedied if it is to be a broad theory of organizational strategy. The areas of promise and inadequacy of the RBV in the context of transnational technology strategy will be reviewed and suggestions made for extending the RBV to remedy its limitations . These proposed extensions can provide the basis for further scholarly work and food for thought for practising managers.

The Resource Based View of the Firm

The essence of the RBV is that **sustained competitive advantage comes from access to resources of sustained value and uniqueness**, but there are variations in the way these fundamentals are presented by different authors which enable the theory to be elaborated in various useful ways. For example, while Barney (1991) speaks of sustained competitive advantage, value, rareness, imperfect imitability and substitutability; Peteraf (1993) speaks of competitive advantage, *ex post* limits to competition, *ex ante* limits to competition and imperfect mobility; and Teece *et al* (1997) speak of capabilities being honed to a user need, unique and difficult to replicate.

The RBV gives primacy of place to the idea that every firm is unique, even though it may share some characteristics with other firms. Because of firm uniqueness, there is heterogeneity among the firms competing in an industry. Competitive advantage comes from having a resource, or resources, that is (are) unique and has (have) value. There is no competitive advantage in having a resource that is unique but has little value, for example, in having the most antiquated computer system in the industry. Neither can one gain advantage over competitors by having a valuable resource that competitors also have, for example, having the same state-of-the-art computer system that everyone else has. Uniqueness and value are both necessary, but neither is sufficient, for competitive advantage.

But competitive advantage is something that can be eroded, particularly in the current, fast-moving business environment (Bettis and Hitt, 1995; Chakravarthy, 1997; Hitt, Keats and DeMarie, 1998; Teece *et al*, 1997). Barney (1991) deals with this issue by stating that sustained competitive advantage comes from resources whose value and uniqueness are intrinsically more enduring than those of other firms. The trick is to identify and appropriate the resources with the enduring qualities. But even this advantage can, eventually, be eroded. Teece *et al* (1997) consider this point further and bring it to centre stage in their thinking. They argue that most value and uniqueness can be swiftly competed away in the current, very dynamic, business environment, and that the key to sustained competitive advantage is to keep renewing uniqueness and value through continuous self-transformation. Sustained competitive advantage comes, not from having a stock of resources with enduring uniqueness and value (that is impossible), but from being able to outrun the competition. To do this the organization needs dynamic capabilities, the ability to continuously develop new resources that are unique and valuable.

Teece *et al* (1997) also propose that the past histories of firms make them unique and constrain what they can do in the future. Such "path dependencies", set by the path which the firm has historically followed, gives the firm its current set of capabilities and a position among its competitors. This legacy makes it unique but also constrains the strategic choices of the firm. Now that we have outlined some of the basic concepts of the RBV, we can move on to consider the literature on transnational technology strategy and the degree to which it supports the RBV.

The Quest for Value and Uniqueness

Some authors have argued convincingly, with empirical support, that the internationalization of technology work has resulted from the attempts of firms to access unique and valuable

technology resources at extra-national sites (Florida, 1997; Henderson and Cockburn, 1994; Toyama and Methe, 1997. Toyama and Methe (1997, page 1) put it thus, "By conducting R&D abroad, a firm can enhance its technological performance by acquiring the idiosyncratic resources that exist in country settings different from the home country." In support of this view, several writers have observed that, in the current era of technologically-driven competition, technology resources have intrinsically high value (Bettis and Hitt, 1995; Dierickx and Cool, 1989; Teece *et al*, 1997); and that technology resources are intrinsically difficult to imitate, primarily because they involve high levels of tacit knowledge. This is so whether the technology is located at home or abroad. The intrinsic value and difficulty of imitation of technological resources make them good bases for sustained competitive advantage and, therefore, for the attention of RBV theorists.

Also in support of this general approach are findings concerning the uniqueness of extra-national technology units. Toyama and Methe (1997) argue that uniqueness in organizations and their overseas technical units can come from the variety of ideas available from a variety of offshore locations; from direct access to networks of competitors, research institutes, customers, suppliers and governments offshore; and by gaining access to the "best in the world" technology available overseas. Empirical data also suggest that overseas technology units are unique. Stock, Greis and Dibner (1996), for example, studied technology units located in North America by both Japanese and European firms to access North American biotechnology expertise. Despite the same general purpose of the units, the Japanese differed markedly from the European. European units were more advanced in their biotechnology capabilities than were the Japanese and this was reflected in a variety of differences, including the kind of science being done, communication patterns with their home bases, and the degree of autonomy afforded North American units by

headquarters. These inter-country differences were the most noticeable, but Stock *et al* also found differences among the Japanese units and among the European units. Heterogeneity among units is very much the case in transnational technology management. Two propositions are suggested by the concepts and empirical evidence presented in this past work.

Proposition 1: Firms establish extra-national technology units to access unique and valuable technology resources located at extra-national sites.

Proposition 2: Extra-national technology units and the resources they embody are heterogenous, each being a unique manifestation of the parent firm and extra-national site conditions.

This recognition of the heterogeneity of extra-national technology units may not be as significant for theoretical development as it might seem at first sight. It is a truism that extra-national technology units differ from each other. No two organizations can ever be the same. The key to making heterogeneity theoretically significant is to identify significant aspects of heterogeneity. And, as we shall see below, the RBV fails to predict a very significant kind of heterogeneity in extra-national technology units, and may even predict that such heterogeneity should not occur.

Path Dependencies and Dynamic Capabilities

A number of empirical studies which demonstrate heterogeneity among overseas technology units support the concept of path dependency as articulated by Teece *et al* (1997). Chiesa (1996a), in his study of the strategic deployment and management of extra-national technology units, found that an important factor in making strategic plans was the capabilities already resident in the firm's technology units. Ironically, in some cases important plans were skewed to

accommodate the resources already resident in technology units acquired by "accident". Taggart (1998) studied the evolution of technology units in the UK subsidiaries of multinational firms. He found that, over a five year period, 37% of the units in his sample had changed the nature of the technology work they were doing. In that period, 28% had increased the complexity of what they did and 9% decreased it. These technology units were in various states of flux, or lack of it, which guaranteed that no two would be the same. Penner-Hahn (1998) also considered the evolution of firms' extra-national technology activities and found that the nature of the overseas activity depended upon the firm's historic capabilities and strategic intentions. This empirical evidence supports Teece *et al*'s proposal that path dependencies foster heterogeneity and influence strategic choice.

Proposition 3: The path dependencies of parent firms and of their extra-national technology units constrain the strategic roles played by extra-national technology units and foster heterogeneity among them.

Since these studies demonstrating path dependencies show the basis for some of the heterogeneity among technology units, they also support Proposition 2, above. An emergent theme of these papers is that two technology units which do much the same technical work in much the same way may provide different amounts of value to their firms, if they play different strategic roles within their firms. Such variation in strategic role seems likely given that firms are unique. A particular technology may have high value for one firm and low value for another.

The empirical literature on transnational technology management also gives clear support to the concept of dynamic capabilities (Teece *et al,* 1997). Malnight (1995, 1996), Penner-Hahn (1998) and Taggart (1998) report evidence of organizations in the process of change, taking a

succession of initiatives that collectively constitute the strategy of the firm. Of particular interest are the studies of Birkinshaw, Hood and Jonsson (1998), Coughlan and Brady (1996) and Taggart (1998), which show the processes by which initiatives come from extra-national subsidiaries as well as from corporate headquarters. They show that transnational technology networks are in a state of constant churn, as units scattered around the globe jockey for position within their firms, often through the upgrading of their technology resource positions. The transnational technology network is a dynamic entity constantly changing as a result of initiatives emanating from both the centre and the periphery.

Proposition 4: Many extra-national technology units result from, and participate in, the exercise of the dynamic capabilities of the firms of which they are a part.

The literature reviewed above supports the proposition that the RBV can provide considerable explanatory power in the realm of transnational technology strategy and management. Evidence is provided that technology resources have high value and sustained uniqueness in the current business environment, and that extra-national sites are places where such technology resources can be found. Extra-national technology units are different from each other, even when their strategic purposes are quite similar. Path dependencies and the exercise of dynamic capabilities are quite apparent in empirical reports. However, as we shall now see, there are clear limitations to the power of the RBV in this context.

The Types and Functions of Extra-National Technology Units

The most striking evidence suggesting that the RBV has significant limitations in explaining transnational technology strategy comes from the considerable body of evidence concerning the types and functions of extra-national technology units. There is a long history of empirical work

on this topic (Behrman & Fischer, 1980; Cheng, 1994; Cordell, 1973; Hakanson & Nobel, 1993 a, b; Hewitt, 1980; Hood and Young, 1982; Medcof, 1997; Nicholson, 1994; Pearce & Singh, 1992 a, b; and Ronstadt, 1977, 1978) but recently there has been some consensus that extra-national technology units can be categorized under two broad headings. Kuemmerle (1997), for example, has suggested that extra-national technology units engage in two categories of activities. **Home-base-augmenting activities** tap marketing and scientific knowledge available at off-shore sites and appropriate it for the firm's present or future use. **Home-base-exploiting activities** use the firm's current technical capabilities to support operations such as marketing and manufacturing at home or abroad. Other writers have observed much the same dichotomy but with different labels, for example; supply-oriented forces and demand-oriented forces (Granstrand *et al*, 1992), technology generation activities and technology exploitation activities (Archibugi and Michie, 1995), technology-oriented posture and market factors (Florida, 1997), and exploitation R&D and experimentation R&D (Chiesa, 1996a). Although these are the two primary categories of reasons for establishing extra-national technology units, empirical studies have found units set up for other reasons (Chiesa, 1996a; Hakanson and Nobel, 1993). The most prominent of these other reasons are political (eg. to satisfy a local government's demand for technology transfer in exchange for access to the local market) or by "accident" (eg. when a technology unit is part of a foreign subsidiary which is purchased for reasons unrelated to technology). Since these political and accidental units are eventually assigned augmenting or exploiting roles, we will base our discussion on the augmenting and exploiting categories.

Descriptions of the roles usually played by home-base-exploiting units suggest that much of what they do has neither high strategic value nor uniqueness (Chiesa, 1996a; Florida, 1997,

Granstrand, *et al*, 1992). Units supporting foreign manufacturing, for instance, usually adapt technology developed at home to a particular overseas context. The initial installation of the technology may involve work of some complexity as the novel problems of local adaptation are met, and technical experts of some sophistication may be temporarily sent from the home country. However, once the facility is established, the permanent technical staff left with it will perform the relatively routine tasks associated with maintaining the plant's function and dealing with local suppliers. The unit's work will be embedded in the manufacturing process and will be indistinguishable in value and uniqueness from the technical support units embedded in the other manufacturing plants of the firm, whether they be at home or abroad. The same holds for technical units which support overseas marketing operations. Once the initial adjustments are made, the permanent unit will slip into the role commonly played by marketing support units, helping local customers and tweaking products for local use. In short, although some home-base-exploiting units may play roles of high uniqueness and value, most play roles that do not make large contributions to the competitive advantage of the firm. Kuemmerle (1997) found that 55% of the units in his sample were home-base-exploiters, suggesting that this kind of low value, non-unique technical activity is an important component of extra-national technical work.

Proposition 5: Firms establish many extra-national home-base exploiting units which embody technology resources that are neither very valuable nor very unique.

Turning to the second major category of offshore units, those involved in home-base-augmenting activities, the available evidence suggests that although many of them make significant contributions to sustained competitive advantage, some play less significant roles.

Home-base-augmenting units are intended to appropriate the knowledge and talent of the host country for the use of the firm. Such activities could lead to the acquisition of unique and very valuable capabilities, particularly if the firm is the only one active in a particular location. But what if the firm is not alone?

Studies of technology units located in North America by Japanese firms to acquire the cutting edge biotechnology science available there suggest that even home-base-augmenting units may not contribute much that is unique. These units are set up to learn what Americans already know and to acquire the capabilities necessary for commercial activity in biotechnology (Kenney and Florida, 1994; Penner-Hahn, 1998; Stock *et al*, 1996). The Japanese perceive that biotechnology capabilities have value and, in the future, some Japanese firms may develop capabilities that are unique. In the short and medium term, though, these units provide little that is truly unique, either in terms of what Americans already know, or in terms of what other Japanese biotech aspirants are learning.

Other sources suggest that what is true for Japanese biotechnology is also true in other industries. Dalton and Serapio's (1995) survey of foreign affiliated technology units in the US shows distinct clusters around American centres of excellence such as Silicon Valley, Boston and Princeton. The implication is that many firms are aware of the technologies to be found in those locations and they are attempting to appropriate them. It seems unlikely that what most of them are getting is unique, or even rare, in any fundamental sense.

Proposition 6: Firms establish many extra-national home-base augmenting units which embody technology resources that are neither very valuable nor very unique.

Propositions 1, 2, 5 and 6 all concern the nature of extra-national technology units and the strategic reasons for which they are established. Jointly, they suggest the following proposition.

Proposition 7: Firms establish extra-national technology units for a variety of different strategic purposes and, consequently, those units embody technology resources that are heterogenous with respect to uniqueness and value.

Although the RBV, as demonstrated earlier, does provide an explanation for the establishment of units which embody unique resources of high strategic value, many units perform quite routine functions and copy technologies which are already possessed by other firms. The RBV, as currently articulated, does not provide a theoretical explanation for the occurrence of these latter types of units. This is a significant limitation given the large body of evidence supporting the existence of such units and attesting to their wide-spread deployment. We will now suggest a remedy for this significant limitation of the RBV.

The Resource Based View and Portfolios of Technology Resources

The primary limitation of the RBV is in its failure to provide an explanation for Proposition 7, that firms' extra-national technology resources vary considerably in uniqueness and value. In its present form, the RBV predicts only the occurrence of highly unique and valuable extra-national resources. We will show that this limitation can be at least partially remedied by providing, in the RBV, for a more prominent role for imitation and by acknowledging that firms deploy portfolios of technology resources varying in uniqueness and value.

A Greater Role for Imitation

It is clear from the empirical evidence reviewed above that transnational firms engage in significant amounts of technology imitation, as seen in the example of the Japanese biotech firms

in America. Such firms are in a race, not only to find and exploit the unique, but to compete away the advantages of rivals. If one firm finds advantage in locating in a particular geographic area, others are quick to follow. In transnational technology strategy, the dynamic capabilities described by Teece *et al* (1997) are valuable not only because they create new uniqueness and value. They are also useful because they provide imitation, to erode competitors' advantages.

However, as the RBV is usually described, imitation is assigned a secondary role. In Barney (1991) and Peteraf (1993), for example, imitation is characterized as an activity of "other firms," attempting to compete with a "successful firm," which is depicted as having sustained competitive advantage through uniqueness and value. So the RBV does include the concepts of imitation and substitution which can be used to explain many of the activities of transnational technology firms, but it has relegated them to a secondary role in its theoretical scheme.

The RBV could deal more effectively with Proposition 7 if imitation were given a theoretical status parallel to that of the pursuit of uniqueness and value. Imitation is a legitimate technology strategy of which we have long been aware, and which can be pursued more or less effectively (Schewe, 1996). The RBV must be modified to legitimize imitation and to provide a framework to understand the relationship among imitation, uniqueness and other organizational strategies. It must acknowledge that a firm which pursues a strategy focussed solely upon uniqueness and high value, without consideration of imitation, can soon be competed into oblivion.

Technology Portfolios

A second way in which the RBV can be modified to deal with Proposition 7 is to include the concept of technology portfolios. We can begin with a distinction between basic and key technologies as proposed by Harris, Insinga, Morone and Werle (1996), although Roussel, Saad

and Erickson (1991) have suggested a similar differentiation. Harris *et al* define **key technologies** as those which are unique to a firm and provide competitive differentiation from rivals. In contrast, **basic technologies** are necessary to do business in a particular industry, and are needed by all firms who wish to compete in it, but do not give competitive differentiation. For example, the ability to manufacture using robots might be a standard requirement in an industry and be needed by all firms which would compete in it, although it may provide no competitive advantage since all significant competitors do it. The RBV, as currently articulated, devotes its attention to the role of key technologies, dismissing basic technologies as the province of unsuccessful firms. Proposition 7, based upon the empirical literature, suggests that basic technologies are an important presence in transnational technology strategy.

The roles that key and basic technologies could play in a revised RBV are illustrated in Figure 1. There, technology resources are shown to vary on the dimensions of uniqueness and value. Currently, the RBV focuses its attention almost entirely upon the upper right quadrant of the figure, in which technology resources are highly valuable and unique. This is the region of key technologies. In the upper left are technology resources which have high value, but which are not unique (many competitors in the industry have them). The high value suggests that they are essential to doing business in the industry and this is why they are labelled basic technologies. In the lower left are commodity technologies (this term is borrowed from Harris *et al,* but they may not agree with the definition used by the current author). Commodity technologies may have a role to play in an industry, given that they are widely held, but they have little value and can be bought and sold on a commodity basis. In the lower right are albatross technologies. Such a technology is unique to a firm but has little value. For example, an R&D unit may be

quite expensive to maintain and have a distinctive capability in a specialized area of science, but may provide little value to the firm if its science is irrelevant to the marketplace.

Please insert Figure 1 approximately here

The RBV, if it is to develop into a theory for explaining a broad range of phenomena in transnational technology strategy, must extend its reach out of the upper right quadrant. It must develop more articulated concepts of the resources in the other three quadrants and an understanding of how technology resources in all four quadrants are coordinated in transnational technology management. Different configurations of these resource types may be viable in different circumstances, even when no individual resource is particularly unique or valuable.

An avenue for further theoretical exploration might include the idea that the value chain of the firm has resources positioned along it, each associated with a particular value-adding activity in the chain. At one point there might be a key resource, at the next a basic resource and at another, an albatross resource. In short, any firm holds a portfolio of resources. A number of the resources along the chain are necessary for survival and/or success but none is sufficient. A number of the necessary resources may not be key resources. Whether the firm should keep and enhance a resource or dispose of it, will depend upon managerial judgements.

Proposition 8: The transnational technology strategies of firms include the deployment of portfolios of extra-national technology resources whose purposes and roles vary considerably, but whose overall coordination is pursued with an explicit strategic logic.

This portfolio approach to technology resources is not new (Harris *et al*, 1996; Roussel *et al*, 1991) but the RBV must adopt some aspects of it in order to provide for Proposition 7. The basis for such an adoption may be found in the concept of complementary resources articulated by Teece *et al* (1997). They speak of resources in the organization which are not necessarily unique or valuable, but which play a role in the utilization of the unique and valuable ones. This theme might be expanded to include the conceptual developments suggested in propositions 7 and 8.

Although the concept of technology resource portfolio has been applied in the past to issues of technology strategy (eg. Harris *et al*, 1996; Roussel *et al*, 1991), it has not been applied specifically to extra-national technology strategy. Such an approach may provide a new and fruitful perspective on transnational technology strategy. An important early step in taking this approach would be to perform direct empirical tests of the eight propositions developed in this paper. Although these propositions are plausible because they are based upon extant empirical work, they remain propositions, and should be empirically tested before an extensive theoretical structure is built upon them.

In summary, although the RBV concepts of heterogeneity, path dependence, dynamic capabilities and the quest for uniqueness and value receive direct and clear support from the empirical literature on transnational technology strategy and management (Propositions 1, 2, 3 and 4), there is considerable evidence (Proposition 7) that is not covered by the RBV in its current form. However, the RBV includes the seeds of concepts that may enable it to encompass the empirical literature on transnational technology strategy. Further development of these concepts, the empirical testing of any such developments, and the empirical testing of the propositions developed in this paper, are all tasks on the future research agenda.

Prescriptive and Descriptive Approaches

The implications of the above demonstration of the limitation of the RBV depend, in part, upon whether the theory is cast as descriptive or prescriptive. A descriptive theory attempts to explain and predict phenomena without specific recommendations about how people (or organizations) should conduct their affairs, while a prescriptive theory intentionally provides advice to people about how they should proceed if they want to achieve certain results (Barney, 1990; Donaldson, 1990). These two castings of the theory are not necessarily contradictory, but they do hold different implications.

If the RBV is cast as descriptive, the primary implication of the present paper is that there is a discernable way in which the RBV might extend its explanatory power to overcome some of its current limitations. By working with the concepts of imitation and complementary resources, the reach of the RBV might be extended to all four quadrants of Figure 1, and the empirical observations captured in Proposition 7 might be accounted for. In this view (which is the primary approach of this author) the theory has potential to extend its already demonstrated explanatory power.

If the RBV is cast as prescriptive, however, the implications are much different. The RBV proposes that firms should acquire unique and valuable resources and dispose of the others, if they want to attain competitive advantage (and which firm does not). On this advice, the evidence which shows that firms embody heterogenous resources in their extra-national technology units suggests wide-spread incompetence among their mangers. According to the RBV, competent managers would have disposed of the units embodying resources of low value and uniqueness and used the proceeds to acquire others with high value and uniqueness. In short,

for the prescriptive RBV, the occurrence of units of low value and uniqueness is a sign of poor management rather than a sign of a theory needing revision.

The considerable empirical evidence that many successful firms hold heterogenous portfolios of extra-national technology resources suggests that the prescriptive RBV is limited, if not downright dangerous. A manager who took the RBV at its word and pursued only the highly unique and highly valuable would almost certainly do harm to the firm. Not that the RBV is wrong, it is just very limited. It is the view of this author that the recent wide acceptance of the RBV comes from the fact that it is easy to interpret the theory as prescriptive, and its prescription is very simple and intuitively appealing. This basis for appeal is a particularly dangerous one.

Conclusion

Those studying and practising transnational technology strategy should not become too enamoured of the RBV despite its considerable appeal. As a theory, it can certainly help our understanding but there is already a rich array of data which it does not adequately explain. The RBV is in danger of remaining a "one-idea theory", although Teece *et al* (1997) have attempted to expand the array of concepts associated with it. If the RBV is to be more than a partial theory of transnational technology strategy, it must be extended in the ways proposed here and, after further though and research, in other ways as well.

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