CORPORATE DIVERSIFICATION AND ORGANIZATIONAL STRUCTURE: A RESOURCE-BASED VIEW

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A Resource-Based View

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ABSTRACT

We argue that the strategy of Related Diversification will enhance performance only when it allows a business to obtain preferential access to "strategic assets"-- those that are valuable, rare, imperfectly tradable and costly to imitate. Even then, the advantage afforded by this access will eventually decay as a result of asset erosion and imitation by single-business rivals. In the long-run, therefore, only accumulated competences that enable the firm to build new strategic assets more quickly and efficiently than competitors will allow the firm to sustain supernormal profits. Both these short- and long-run advantages are conditional, however, on the diversified firm putting organizational structures in place that allow it to share its existing strategic assets and transfer the competence to build new ones between divisions in an efficient manner.

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A senior executive at British Steel plc recently expressed the view that even though his company only makes steel, it is not a single-business firm. His position was that the several types of steel that the company manufactures have such different buying characteristics and requirements and each in turn requires such different sales and production approaches, that his company could be viewed as competing in a series of unrelated markets. By contrast, the Citizen Watch Company Ltd. claims that its diversified products (which include watches, printers for personal computers, floppy disk drives, small portable PCs, liquid crystal colour TVs, quartz oscillators, precision machine tools and robots) share a common set of advanced, precision technologies that the company developed in the course of manufacturing watches. Citizen's President recalls how the company learned from its failures after venturing into what it now considers unrelated, "non-precision businesses during the diversification boom" (Nakajine, 1995).

We believe that these observations could help explain why after so many years of academic research on the relationship between diversification and performance, there is still uncertainty and confusion regarding the nature of this relationship (e.g. Hoskisson & Hitt, 1990; Ramanujam & Varadarajan, 1989; Reed & Luffman, 1986). Although we agree with Hoskisson & Hitt (1990) that the confusion is partly theoretical and partly methodological, in this paper we will emphasise the methodological aspects of the problem by revisiting two issues at the heart of this debate: (1) exactly what kind of relatedness, if any, between two businesses can offer the potential for a corporation to reap improved returns by diversifying across them, relative to the profits available to single-business rivals in both industries; and (2) whether the ability to reap these potential diversification benefits is dependent on the diversifier adopting a particular organizational structure.

Rather than examine the construct validity of the various measures of diversification developed in the literature (e.g. Hoskisson, Hitt, Johnson and Moesel, 1993), we use the resource-based view of the firm to argue that existing

measures of diversification (such as the entropy index and Rumelt's (1974) strategic categories) are likely to fail in systematically identifying opportunities for profitable diversification (a point also raised by Hill, 1990) because they are unable to pinpoint instances where the strategic assets (Barney, 1991) -- those that offer important sources of long-run competitive advantage -- are common across two businesses. We further argue that even if a firm puts in place an organizational structure to efficiently share resources or assets that are relevant to two divisions, it will not necessarily be able to sustain superior performance. Diversification will only support long-run superior returns where it allows a firm to exploit resources or assets that are unavailable to its rivals at a competitive cost. This is simply because if a single-business competitor can efficiently buy, imitate or substitute for the benefits a division receives from other units within a diversified group, then the diversifier has no long-run, relative advantage. Any measure of relatedness that fails to take account of the characteristics of the resources or assets being shared, will therefore confuse (1) opportunities for sharing that give diversifiers access to unique competitive benefits with (2) cases where the division would be economically indifferent between sharing versus meeting its requirement by other means[1].

In the next Section we build on this contention by examining the conditions that any type of "resource- or asset-relatedness" between two businesses must satisfy before it can underpin potentially profitable diversification. We discuss why traditional measures of relatedness between markets can be biased by including similarities between businesses that fail to meet these conditions and hence exaggerate the scope of profitable diversification between some types of businesses. We also show why these traditional measures might overlook commonalties between businesses that could underpin profitable diversification.

In Section 3, we combine our definition of potentially profitable asset-relatedness with hypotheses about the kind of organizational structure a diversifier must adopt in order to successfully exploit this potential. Here our paper complements the recent work by Hill, Hitt & Hoskisson (1992) which has improved our

understanding of the relationship between diversification and performance by going beyond a general classification of organizational forms to examine in detail the degree of centralisation and integration exercised by head office on its divisions. We seek to go beyond broad, market-level definitions of relatedness to examine in detail the kinds of links between assets that these organizational forms should try to exploit.

Section 4 proposes a series of measures that aim to capture, albeit indirectly, the kinds of asset-relatedness which can underpin profitable diversification while excluding those similarities between businesses that fail to offer competitive advantages to diversifiers compared with single-business firms. Finally, Section 5 empirically tests the power of these new measures of asset-relatedness compared with traditional market-relatedness measures in explaining firm performance. These tests also examine whether the performance of diversification strategies designed to exploit asset-relatedness is also contingent on the organizational form adopted by the diversifier.

STRATEGIC ASSETS, RELATEDNESS AND SUPERIOR PERFORMANCE

The strategy of related diversification enables firms to exploit *economies of scope* (e.g. Teece, 1982; Porter, 1987). This means that the corporate centre of a firm operating in (say) two SBUs can exploit any synergies between two SBUs (for example in manufacturing or distribution) so as to achieve cost and/or differentiation advantages relative to an undiversified rival. This generally requires that the corporate centre in related diversifiers can identify important assets residing in any one of its SBUs and set up mechanisms to enable them to be utilised in the other SBUs (e.g. Hill & Hoskisson 1987; Hill, 1988). As articulated by Hill *et al* (1992, p. 502): "...resource sharing and skill transfers enable the diversified firm either to reduce overall operating costs in one or more of its divisions, and/or to better differentiate the products of one or more of its divisions (thus enabling a higher price to be charged)."

Traditionally, academic researchers have measured the relatedness necessary to underpin these economies of scope in one of two basic ways (e.g. Montgomery, 1982; Pitts & Hopkins, 1982). The first approach is to deploy an objective index like the SIC count (e.g. Caves et al, 1980; Jacquemin & Berry, 1979; Palepu, 1985) which assumes that if two businesses share the same SIC they must have common input requirements and similar production/technology functions. The second method is to use a more subjective measure such as Rumelt's (1974) diversification categories which consider businesses as related "... when a common skill, resource, market, or purpose applies to each." (Rumelt, 1974, p. 29).

We believe that both these approaches suffer from a serious limitation (see also Amit & Schoemaker, 1993; Farjoun, 1994; and Robins & Wiersema, 1995): they do not consider whether the services of those skills, resources, assets or competences being shared could be obtained at an equivalent or even lower cost by non-diversifiers (e.g. Barney, 1986, 1991; Farjoun, 1994; Montgomery & Hariharan, 1991). Consider the example of two businesses that would be classified as related according to these measures because they use a common input such as steel. If non-diversifiers could purchase this input in a competitive market, then we would not expect a firm that is diversified across these markets to have any cost advantage. This type of relatedness would not underpin superior performance from diversification (in fact, if by dividing its resources, the diversifier had to be content with smaller sized operations in both businesses--thus substituting economies of scope for economies of scale (for example, in purchasing)--its performance might well be inferior to that achieved by its single-business rivals).

Diversification will only enhance performance, therefore, where it allows a business to obtain preferential access to skills, resources, assets or competences that cannot be purchased by non-diversifiers in a competitive market or substituted by some other asset that can be purchased competitively[2]. Researchers exploring the implications of the resource-based view of the firm

have used the term "strategic assets" (Barney, 1991) to denote skills, resources, assets or competences that are valuable in the production function and difficult for competitors to access. More specifically, the characteristics that define strategic assets are imperfect tradeability, imperfect substitutability and imperfect imitability (Barney, 1986; Dierickx and Cool, 1989; Peteraf, 1993). In order to identify opportunities for profitable diversification, then, measures of relatedness should strive to pinpoint opportunities for sharing these strategic assets between two businesses--i.e. "strategic relatedness" (e.g. Peteraf, 1993; Teece, Rumelt, Dosi and Winter, 1994). By contrast, SIC-based measures of similarities between industries will wrongly impute value to sharing non-strategic assets that non-diversifiers can obtain in a competitive market at no cost penalty. In Section 4 we propose a set of measures that go some way to addressing this theoretical weakness of traditional approaches. In doing so, we are following the recent example of Farjoun (1994) and Robins & Wiersema (1995).

The fact that the superior performance of diversification depends on opportunities to share strategic assets, has a second important implication: any single source of diversification advantage cannot be expected to persist indefinitely. This is because non-diversified competitors will eventually eliminate the competitive advantage associated with any strategic asset by substitution or replication. How long a specific benefit from diversification provides competitive advantage will depend on the characteristics of the strategic asset on which it is based[3]. The longevity of the advantage will be greater the less substitutable the strategic asset and the more its replication suffers from impediments to accumulation (like time compression diseconomies, asset mass efficiencies, asset interconnectedness, and causal ambiguity[4]--see Dierickx and Cool, 1989; and Grant, 1991), or Rumelt's "isolating mechanisms" which include property rights on scarce resources, lags and information asymmetries (Rumelt, 1984, 1987)[5]

In order to maintain or expand their initial competitive advantage in the face

of rivals investing to close the gap, diversifiers must replenish their stock of strategic assets which underpins it or add to this stock by creating new strategic assets[6]. This opens up a second possible benefit from diversification: the fact that it might allow the firm to expand its stock of strategic assets faster and at lower cost than its single-business competitors. Only by finding ways to exploit this potential advantage will diversifiers be able to maintain superior returns over the long-run.

Core Competences as Catalysts to Asset Building

The most important way to obtain new strategic assets that are costly to trade is to accumulate them through experience: learning by doing. As we have already noted, this process is subject to various types of frictions, more fully discussed by Dierickx and Cool (1989). Now, in many cases it will not be possible for a diversifier to share the asset that is the product of this accumulation process between two divisions (such as a brand or distribution network) because each business requires a strategic asset with unique characteristics. The businesses are not related sufficently enough to allow the exploitation of traditional economies of scope through sharing. But instead, it may be possible for a diversified firm to use the experience it has accumulated in operating one of its businesses to reduce the frictions it would otherwise face in building new strategic assets in another of its businesses (referred to as the transfer of a "core competence" by Prahalad and Hamel, 1990). The core competence accumulated by one division acts, in effect, as a catalyst in building new strategic assets for another division[7]. Competences may also act as catalysts in the processes of adapting and integrating assets that a division has accessed by other routes such as acquisition or alliance. Prahalad and Hamel (1990), for example, cite the case of the Japanese company NEC's competency in managing collaborative arrangements as an important factor in the ability to access and then internalise new strategic assets from their alliances partners.

In this way, a diversified firm may derive a long-term benefit from types of "dynamic relatedness" outside those envisaged by the traditional concept of economies of scope through asset sharing (see also Markides & Williamson, 1994, pp. 155-157). This helps to explain why a company like Citizen sees watches and computer printers as "related businesses" even though there would appear to be few opportunities to reap economies of scope by sharing productive assets like production facilities, distribution channels or probably even brands.

Traditional approaches to measuring relatedness based on SIC codes will often fail to flag this dynamic relatedness that comes from similarities in the processes by which different strategic assets valuable in two businesses can be accumulated. Watches and computer printers, for example, are not classified under the same SIC code, even at the two-digit level. Only by explicitly comparing the strategic assets which underpin competitive advantage in two businesses, along with the processes involved in building and accessing these assets, can dynamic relatedness be identified. Yet it is precisely this type of relatedness that promises to underpin any superior performance of diversified firms over the long-run. Robins and Wiersema (1995) take an important step in this direction by using data on flows of technology between the businesses included in the portfolios of a sample of diversified firms to measure one aspect of what we have termed dynamic relatedness. They find that as this type of relatedness increases, performance systematically improves.

Organizational Structure and Strategic Relatedness

Even if we can identify potential competitive advantages to be gained by sharing strategic assets or the competence to build these assets quickly and efficiently, this is not a sufficient condition for diversified firms to out-perform non-diversified ones. It is also necessary that the diversified firms have an organizational structure in place that is more efficient in realizing the benefits of sharing and competence transfer than alternative modes of transaction

including an external, arms-length market.

There are good reasons to expect that conduits that are internal to an organization are potentially more efficient that the external market in accomplishing the sharing of strategic assets and competences. By definition, strategic assets suffer from impediments that make them costly to trade. Competences, like other intangible assets, have characteristics such as information impactedness and scope for opportunism make them difficult to trade at arms length (Williamson, 1975; Caves, 1982). This means that where there exists excess capacity in these strategic assets and competences (in the sense that they could create additional value if they were to be simultaneously utilised in another business), it cannot be released by external market transactions such as consultancy agreements, licensing, franchising and sub-contracting. This market failure can be by-passed by internalizing the exchange within a diversified firm through mechanisms such as cross-posting of staff, bringing together a corporate task force of individuals drawn from multiple divisions to solve the problems of one division, passing market intelligence between divisions, or joint management of a shared salesforce.

In a significant number of diversified firms, however, these mechanisms for efficient sharing and transfer appear to be lacking. Prahalad and Hamel (1990), for example, cite a number of cases where competences were "imprisoned" in a single division by the absence of internal conduits that would have allowed them to be profitably utilised elsewhere in the group. Among any sample of firms that had diversified across a portfolio exhibiting strategic relatedness therefore, we would only expect superior performance in those that had also put in place the organizational structures necessary to realise these benefits. As proposed by Hill (1988) and Hill & Hoskisson (1987), the CM-form organizational structure may be such a structure. This is because the CM-form structure allows the corporate centre to get involved in the operating decisions of the SBUs and become active in exploiting interrelationships or transferring skills and competences across SBUs. This is in direct contrast to

the M-form structure where the SBUs operate with no interference from the head office. The M-form structure is therefore more appropriate for unrelated diversifiers who are only interested in realizing benefits from an internal capital capital market.

In summary, then, diversification that is based on commonalties between resources and assets that single-business firms can access at a competitive cost either by substitution or imitation will not provide a source of long-run competitive advantage to the diversified firm, regardless of its organizational structure. Competitive advantage will only arise when diversification provides a division with access to strategic assets -- those that are valuable, rare, imperfectly tradable and costly to imitate. Even then, the advantage afforded by this access will eventually decay as a result of asset erosion and imitation by single-business rivals. In the long-run, therefore, only accumulated competences that enable the firm to build new strategic assets more quickly and efficiently than competitors will allow the firm to sustain supernormal profits. To the extent that diversification allows a division to gain access to such asset-building competences which it would otherwise be denied by market failure, it can under-pin such abnormal returns. Both these short- and long-run advantages are conditional, however, on the diversified firm putting organizational structures in place that allow it to share its existing strategic assets and transfer the competences to build new ones between divisions in an efficient manner.

Research that has examined the impact of SIC-based measures of relatedness on firm performance, even where it has controlled for differences in organisational structure, is likely to generate confused results. This is because these measures include many types of relatedness that offer a division access to resources and assets that a single-business firm can obtain at the same or lower cost and fail to distinguish strategic relatedness that affords benefits which it is difficult for non-diversified competitors to replicate. They will find a positive relationship between diversification and performance only where they

happen to tap into diversification based on strategic assets. Meanwhile, SIC-based measures are likely to exclude instances where two businesses are "dynamically related" in the sense that, although there is little scope for sharing the same strategic asset, one division can benefit from the experience (accumulated competences) of its sister division by using this experience as a catalyst to help it build new strategic assets more quickly and cheaply than its rivals. For these reasons it is important that we begin to develop measures of relatedness that explicitly identify commonalties between the strategic assets required in two businesses and the kinds of competences they are able to generate through experience if we are to gain a clearer understanding of the relationship between diversification and firm performance. In what follows, therefore, we propose and test a series a measures which, although by no means perfect, attempt to explicitly identify when two businesses share common strategic assets.

Measuring Strategic Relatedness Between Businesses

In order to operationalize the concept of strategic relatedness, we need to develop indicators of the importance of similar types of non-tradeable, non-substitutable and hard-to-accumulate assets in different market environments. These types of assets may be divided into five broad classes (Verdin and Williamson, 1994):

- customer assets, such as brand recognition, customer loyalty and installed base;

- channel assets, such as established channel access, distributor loyalty and pipeline stock;

- input assets, such as knowledge of imperfect factor markets, loyalty of suppliers and financial capacity;

- process assets, such as proprietary technology, product or market-specific functional experience (e.g. in marketing or production) and organisational systems;

- market knowledge assets, such as accumulated information on the

goals and behaviour of competitors, price elasticity of demand or market response to the business cycle.

Thus, if our indicator suggested that, channel access and distributor relationships were likely to be very important to competitive advantage in each of two markets, we would identify them as "strategically related" on this dimension. We would then be more confident that core competences in building networks of channel relationships would be applicable to both. If, on the other hand, the second market involved a product that was most effectively sold directly to a small number of buyers, we would class the markets as having lower strategic relatedness on the channel dimension. Although these markets may be closely related in some other way, such as use of similar raw materials, the opportunity to benefit from transfer of competences in building a third-party distribution network would not be available. Meanwhile, if all competitors could buy raw material inputs at a similar price, relatedness on the input dimension would not offer a source of competitive advantage. The relatedness between this second pair of markets would be "non-strategic".

We could then develop an overall picture of the degree of strategic relatedness between pairs of markets by using a portfolio of indicators, each one seeking to measure the extent to which competence in building the same class of strategic asset could add to competitive advantage in both environments. The higher the level of strategic relatedness between two markets, other things equal, the larger would be the expected gains from diversification of firms from one to the other.

In what follows, we discuss the structural indicators used for three of the main classes of strategic assets on which we have data: customer assets, channel assets, and process experience assets.

Customer asset indicators

The first two indicators seek to capture the fact that the nature of interactions

with the customer is an important determinant of the types of assets necessary to effectively serve a market.

1. Media advertising. This indicator measures the importance of mass-market brand building through media advertising. Our variable, *(MEDIA)* is expenditure on media advertising as a % of total sales of the product lines classified to each market. It aims to capture a firm's skills in building brands. If a company operates in a market where it spends a lot of money developing brands and then diversifies into another market where the building of brands is equally important, we believe that this company can transfer its brand-building skills (i.e. competences) into the second market.

Long term success in mass market branding depends not only on how much is spent, but how effective each media campaign dollar proves to be. By operating in a portfolio of markets where building brands through media advertising is an important competitive weapon, the corporation can increase opportunities for sharpening its media promotion and associated mass market research and monitoring competences.

The extent to which transfer of these competences between SBUs offer a source of long-term competitive advantage, however, depends on whether non-diversified competitors can purchase these skills on the open market. It could be argued that, given the strength of advertising agencies and market research consultancies, brand building skills are largely a tradeable asset. On the other hand, it has been argued that accumulated competences in this type of branding offer significant advantage to companies like Procter and Gamble, Philip Morris, or Grand Metropolitan. Whether or not relatedness on the basis of a common requirement for mass-market brand building matters is ultimately an empirical question.

2. Frequency of purchase. This variable refers to the requirement for, and the ease with which, a relationship with the customer can be built **over time**. For

frequently purchased goods (e.g. toothpaste or soap) the consumer may be willing to "experiment" with another brand given the low financial risk of making a mistake. It may therefore be easier for a new firm to induce trial. By contrast, infrequently purchased goods (e.g. cars or TV sets) tend to involve a bigger financial expenditure on the part of consumers. This implies that if a consumer "experiments" with a new brand and gets it wrong, the penalty for trial will be high. To induce new trial, manufacturers of durable (infrequently-purchased) goods will have to demonstrate superior quality, invest in after sales support, etc. (e.g. Nelson, 1970).

Access to core competences in rapidly building successful brands, providing superior product quality and supporting the product with good service is thus likely to be more important where the product is purchased infrequently. For items frequently purchased, by contrast, the product is more likely to win customers on its independent merits or through customer trial and error. Core competences in developing good quality products and after-sales support will be less critical in environments where purchases are frequent. In such markets for goods that are frequently purchased, advertising messages and good shelf space are more likely to induce purchase.

We hypothesise that strategic relatedness will generally be higher between two markets where the products in both markets are infrequently purchased compared with a situation where one market involves a good that is purchased frequently while the second is a market characterized by infrequent purchase. Our measure for infrequency of purchase is the proportion of product lines belonging to a given industry for which the user generally purchases with a frequency of less than once per year *(INFRQPUR)*.

Channel asset indicators

A second class of indicators refers to the importance of imperfectly tradeable assets that provide a basis for competitive advantage by improving the flow of

physical product, service and marketing information through the channels between manufacturers and users. These include relationships with networks of third party distributors as well as marketing infrastructure through which manufacturers can communicate directly with users.

3. Channel dependence. Our indicator of the degree of dependence on the third-party logistics services, *CHANNEL*, is the percentage of products which pass through one or more intermediaries before reaching the final user, rather than being sold direct to users by the manufacturer.

Distribution relationships are a critical asset in many businesses dependent on third-party channels. They are also difficult to trade on a free standing basis. Skills in building and managing distribution and dealer networks form the basis of a potentially important core competence. Where market economics dictate that that dependence on third-party channels is high, competences in dealer recruitment and overcoming "shelf space" restrictions (Porter, 1976), for example, will be valuable in assisting an SBU to accumulate the assets it requires to compete effectively. Strategic relatedness will also tend to be higher among markets that share similar levels of channel dependence.

4. Push Marketing. This indicator distinguishes between products where the marketing focus is on the distributors or other intermediaries rather than the end user. For some types of products, manufacturers depend heavily on their channels for logistics and physical distribution but target their marketing direct on the end user. For example, most supermarket products would fall into this category. In other classes of products, however, manufacturers focus their marketing efforts primarily on an intermediary or "specifier". Prescription pharmaceuticals, where marketing and awareness building are directed towards doctors, or structural building products where the primary marketing is aimed at architects and structural engineers, would be good examples.

Marketing communication with a large number of often less sophisticated end users is likely to require different skills, competences and infrastructure than the marketing, promotion and training directed at specifiers and other well-informed, specialist intermediaries. We hypothesise that two markets would be more closely strategically related if they directed a similarly high proportion of their marketing efforts towards their distributors. Our indicator, *PUSH*, is the cost of total marketing and sales spending other than that spent directly on media advertising (discussed above) as a percentage of sales.

Process experience asset indicators.

In many industries, superior process capabilities open the way to go beyond a basic, standard product to offer high quality, differentiated specifications or to respond to the particular needs of individual customers. These process capabilities range from R&D and design skills to competences in flexible manufacturing.

5. The average skill level of the labor force. In businesses where groups of skilled staff are an important source of advantage, human capital and the associated systems to generate and manage will be even more critical to advantage than in businesses with high labour intensity, but low skill levels. Again, businesses which share the need to develop an effective base of skilled staff with experience working together will have higher strategic relatedness than a pair of businesses, one requiring highly skilled staff and the other, a base of cost effective, low skilled workers. Our indicator, *SKILL*, measures the proportion of "high-skilled" jobs in the industry as a percentage of total employment.

In addition to the five measures of strategic relatedness we listed above, we also include a control variable, *SLSGRW*, (a proxy for industry growth) which is designed to capture any systematic relationships which may exist between market growth and profitability. For example, Porter (1980) suggests that

higher industry growth rates may reduce the intensity of price competition in the short term and hence allow rents to be earned. A list of the variables used in the study with their definitions is presented in Appendix 1.

HYPOTHESES, DATA & METHODOLOGY

So far we have argued that the traditional way of measuring relatedness between two businesses is incomplete; to be meaningful, relatedness should be assessed at the strategic asset level and should consider: (1) the "strategic importance" of the underlying assets of these two businesses (i.e. are these assets non-tradeable and non-substitutable?); and (ii) whether these assets are related. Only firms that exhibit this type of "strategic relatedness" will perform well in the long term.

This implies that if we were to measure the performance of firms classified as "related" in the traditional (Rumelt or entropy index) way and again according to whether their underlying strategic assets are related, we should be able to show that the latter way of looking at relatedness is superior. Therefore:

H_1: Related diversifiers will outperform unrelated firms only when they compete across a portfolio of markets where similar types of accumulated assets are important.

In addition, we have argued that as long as we measure relatedness in the traditional way, there is no reason to expect the CM-form structure to outperform other organisational arrangements. Nor should we expect to find support for Hill's (1988) *contingency hypothesis* which states that the CM-form structure is associated with superior profitability for related firms (when relatedness is defined using traditional measures), while the M-form structure is associated with superior profitability for unrelated firms. Instead, we would expect that the most successful related diversifiers will be those firms that, through their diversification, have gained access to strategic assets and asset-

building competences, as well as those related diversifiers who use their organizational structure to share their existing strategic assets and transfer their competences to build new ones between divisions in an efficient manner. Therefore:

H_2: As long as relatedness is measured in the traditional way, the CM-form organizational structure will not outperform other organizational structures.

H_2A: As long as relatedness is measured in the traditional way, we should not expect to find support for Hill's contingency hypothesis.

H_3: Related-diversifiers who compete in a portfolio of markets where similar types of accumulated resources are important and have adopted the CM-form structure will outperform all other firms (including other related-diversifiers who failed to adopt the CM-form structure).

Sample and Data

To test these hypotheses we need to collect information that would allow us to classify firms according to the organizational structure they have adopted. For this purpose we will use a classification scheme developed by Williamson and Bhargava (1972). This scheme recognizes four preconditions of an efficient internal capital market, equivalent to the M-form structure (Hill, 1988, p. 72):

(i) Cash flows are reallocated by the head office between competing claims and are not returned to source divisions;

(ii) Operating functions are decentralized, so that the head office does not get involved in the daily operating decisions of the divisions;

(iii) The head office is profit-oriented, and evaluates divisional performance according to abstract profit criteria; and

(iv) The head office exercises central strategic and financial controls.

The information to undertake the above classification exercise was collected by a questionnaire[8]. A questionnaire was sent to the CEO of all the companies that met the following criteria: the company must be incorporated in the United States; must belong to SIC 0-40 (i.e., no service firms); and had 1988 sales in excess of $400 million. A total of 457 questionnaires were sent, addressed personally to the CEO of the company with the instruction that he/she completes it or pass it along to the most "appropriate" manager in the organization. A total of 136 valid responses were received--a response rate of 30%--which is considered satisfactory for this type of research. Respondent profit bias was tested for by comparing the profitability of respondent firms against that of the whole population of 457 questionnaire firms. No bias was detected.

Using questionnaire data, three composite scales were constructed from the responses to 32 questions (see Hill, 1988): OPERATE, STRATEGIC, and FINANCIAL. The scale OPERATE measured head office involvement in the operating decisions of the divisions. It ranged in value from 1 to 4. A score of less than 2 on this scale indicated that the firm was decentralized with respect to operating functions. STRATEGIC measured the extent to which strategic controls were centralized. Similarly, FINANCIAL measured the extent to which the head office exercised centralized financial controls over divisions based upon abstract profit criteria. These scales ranged in value from 1 to 5. A score of 2 or less indicated centralized strategic and financial controls. Hence, a high score on OPERATE, along with low scores on STRATEGIC and FINANCIAL indicated the major characteristics of an M-form internal capital market. Cronbach alpha reliability coefficients for the three composite variables came out as follows: OPERATE (0.866); FINANCIAL (0.721); and STRATEGIC (0.754).

In addition, two other variables were constructed. The variable STABILITY was a (0,1) dummy that took the value of 1 if the firm did not change its structure in the past two years, and zero if it did. The variable ICM was another (0,1) dummy that took the value of 1 if cash was reallocated between divisions, and zero if cash was returned to source.

The classification procedure (adapted from Hill, 1988) is summarised in Figure 1. The cut-off points used to assign firms to categories were derived from the wording of the original questions. The full questionnaire is included in Appendix 2.

Put Figure 1 here

For each firm we also calculated its entropy index of diversification from the Trinet tapes. In addition, each firm was classified according to Rumelt's (1974) diversification categories (i.e. Single-business; Dominant-business; Related-business; and Unrelated-business), using data from the TRINET tapes as well as their annual reports. Finally, the profitability of each firm (return on sales) and industry structure variables (to act as controls) were obtained from Compustat.

For each firm, we also calculated the five structural indicators described above. Data for calculating the structural indicators and the other variables used in this study was derived from the following sources: The variables MEDIA, INFRQPUR, CHANNEL, and PUSH, as defined above, were drawn from a U.S. survey of marketing expenditures (Bailey, 1975); the variables ROS and SLSGRW come from Compustat; and SKILL was computed from job classifications contained in the Census of Population (1980).

It is important to stress that given the multi-industry nature of the sample firms, all independent variables were industry-weighted. The procedure used

to achieve this is described below.

Methodology

To test H_1 we first measure relatedness in the traditional (Rumelt) way as a (0,1) dummy (RELATED): those firms classified as "Related" take the value of one, while firms classified as "Unrelated" or "Dominant" take the value of zero[9]. "Single-business" firms are excluded from the analysis. The following equation is then estimated:

$$ROS_i = a + b_1 (RELATED) + \sum_{i=2}^{n} b_i (IND)_i + e \qquad (1)$$

where ROS is the profitability of the sample firms, measured as return on sales, and IND are industry control variables. We decided to use ROS rather than ROE or ROA so as to avoid the issue of whether the accounting policies of acquisition recording bias our dependent variable (Ravenscraft & Scherer, 1987). Using ROS also allows us to compare our results with previous diversification research.

We then replace the RELATED variable by our structural indicators of relatedness to estimate the above equation, i.e.

$$ROS_i = a + \sum_{i=1}^{n} b_i K_i + e \qquad (2)$$

where K_i are the structural indicators described in the previous section. In order to test our hypotheses about strategic relatedness, we express each K_i as

the weighted average of each structural indicator "i" divided by the weighted variance of the indicator across the businesses in each diversified firm's portfolio (A/V). The reason for this transformation is best explained by example. Suppose we have two diversified firms. Firm X has 70% of its sales in a business where goods are purchased frequently by the consumer, but has diversified the remainder of its sales into businesses where the products are purchased very infrequently. The indicator INFRQPUR will therefore have a high variance for firm X, suggesting little scope for sharing competences in building brands and customer loyalty. By dividing our average indicator by this variance, we are effectively discounting for the fact that any competences that firm X has developed in building brands, cannot be exploited in its other businesses (they are "imprisoned"). Compare this with firm Y which has all of its sales in two businesses, in both of which products are purchased infrequently. Compared with firm X, firm Y will score in two ways on our indicator INFRQPUR: it will start out with a high weighted average on INFRQPUR; and the fact that both of its businesses share the characteristic that products are infrequently purchased means that the variance of INFRQPUR is very low for firm Y. As a result, the value of its competence in building effective brands will not be discounted as it was for the unrelated diversifier, firm X.

It should be emphasized that our structural indicators do not simply pick industry structure effects: the indicators themselves are not standard industry structure variables; and since we are explicitly looking at differences between industries (within a firm's portfolio of businesses), we are actually measuring relatedness, not industry effects.

To calculate the weighted average of each structural indicator we first obtained an industry breakdown of the indicator from Bailey (1975). Next, each sample firm's sales by SIC were obtained from the TRINET tapes and the percentage of the firm's sales in each SIC was calculated. The industry-weighted average of each indicator was then calculated by multiplying the share of a firm's sales

in each SIC by the corresponding value of the indicator in that SIC and adding the results.

To calculate the weighted variance of each indicator, we used the following formula:

$$variance\ (x)\ =\ \sum (s*x^2)\ -\ \bar{x}^2$$

where

$$\bar{x}^2$$

is the weighted average of the indicator x; and s = percentage of each industry (SIC) in total sales.

Hypothesis H_1 argues that the strategy of related diversification will be superior only when we measure "relatedness" in an appropriate way--that is, when we use measures that attempt to explicitly identify when two businesses share common strategic assets. Therefore, for this hypothesis to be supported, we should find: (a) the R^2 of equation (2) significantly higher than the R^2 obtained from equation (1), implying that equation (2) does a better job in explaining the profitability differences between Related and Unrelated firms; and (b) the coefficients of the structural indicators in equation (2) to be positive and significant.

The second hypothesis argues that as long as we continue to measure relatedness in the traditional way, we should find no support for the propositions that the CM-form organizational structure will outperform other organizational structures; or that the M-form structure is appropriate for

Unrelated-diversifiers while the CM-form structure is appropriate for the Related-diversifiers (i.e. Hill's contingency hypothesis). To test H_2 we will replicate Hill's (1988) study and compare the results.

Finally, hypothesis H_3 argues that *strategically*-related diversifiers who have adopted the CM-form structure will outperform all other firms, including other related-diversifiers who failed to adopt the CM-form structure. To test H_3 we have to show that following the Related-diversification strategy is necessary but not sufficient for superior performance. To fully exploit the benefits of this strategy, a firm must also adopt the "right" organizational structure (e.g. Hill, 1988). To test H_3, we therefore estimate the equation:

$$ROS_i = a + \sum_{i=1}^{n} b_i K_i + \sum_{j=1}^{n} b_j (CM * K_i) + e \tag{3}$$

where CM is a (0,1) dummy that takes the value of 1 if the firm has adopted the CM-form structure, and 0 if it didn't; and K_i are the structural indicators. For H_3 to be supported, we should find: (a) the R^2 of equation (3) significantly higher than the R^2 obtained from equation (2), implying that related firms that adopt the CM-form structure do better than related firms that do not; and (b) the coefficients of the interaction terms in equation (3) to be positive, significant and much larger than the coefficients obtained from equation (2).

RESULTS

To test H_1, we first ran equation (1) and compared the results to those obtained when we ran equation (2). Table 1 presents the correlation coefficients for all the variables used in the study. The low intercorrelations among these variables suggest no problems with multicollinearity and imply that there is sufficient variation among the variables to allow discrete effects to be estimated.

Put table 1 here

The estimated coefficients from equation (1) are reported in panel (A) of table 2. Consistent with our expectations, we find that "related" diversification (as measured by Rumelt's categories) is not correlated with profitability; the adjusted R^2 of the equation is basically zero. This result is further reinforced by re-estimating equation (1) using the entropy index of related diversification (DR) as our measure of relatedness. The estimated coefficients are reported in panel (B) of table 2. Again, we find that "related" diversification (as measured by DR) is not correlated with profitability.

Put table 2 here

In an attempt to demonstrate whether our proposed way of measuring relatedness is superior to the Rumelt and entropy indeces (i.e. our first hypothesis), we replace the variable RELATED in equation (1) with our structural indicators and run equation (2). The results obtained from equation (2) when relatedness is measured by the structural indicators are presented in panel (C) of table 2. The equation is statistically significant at the 99% level and explains about 13% of the variation in the dependent variable. Three results stand out: First, the adjusted R^2 of this equation is significantly higher than the one obtained from equation (1), a result which is consistent with H_1. This implies that equation (2) is better than equation (1) in explaining profitability differences between "related" and "unrelated" firms. Second, even though the adjusted R^2 of equation (2) is greater than the one from equation (1), it is still relatively small. This is in accordance with our expectations: throughout this paper we have argued that just following a "related" diversification strategy is not enough to generate superior performance; a firm must also adopt the "appropriate" organizational structure. Since equation (2) looks only at the "related" strategy without considering what structure the firm

has adopted, a relatively low R^2 is exactly what we would have expected to see. Finally, even though four of the five structural indicators come out with the expected positive sign (and three of them are statistically significant), it is noteworthy that the structural indicator SKILL comes out negative. This result is surprising. It implies that firms that diversify across high-skilled areas do not fare well, possibly because these kinds of businesses require freedom and autonomy to function well.

Overall, these results provide <u>partial</u> support for our first hypothesis. However, it is important to note that we obtain these statistically significant results by using a group of structural indicators that are not the usual industry structure variables. This means that our indicators actually capture strategic relatedness, not industry structure. In addition, since we have adjusted each indicator by dividing it with its weighted variance, what each indicator measures is true strategic relatedness: assets which are valuable <u>and</u> related. Further work aimed at developing measures of relatedness that take into consideration strategic assets will be worthwhile.

In an attempt to determine whether H_2 is supported by the data, we first tested for differences in profitability between organizational form categories. The results are reported in table 3. In none of the 3 years under study does the M-form (or CM-form) structures outperform the other organizational arrangements as Williamson's (1975) theory predicts. This is consistent with H_2. This result is similar to those reported by Cable & Dirrheimer, 1983; Cable & Yasuki, 1984; Hill, 1988; and Holl, 1983. The only organizational structure that seems to outperform all others is the Mixed-form (X-form) structure. This could be either an aberration (due to the small number of X-form firms under study), or it may reflect the fact that these firms have adopted a mixed form that, compared to a pure form, enables them to achieve a closer fit between their control arrangements and their strategy. The inferior performance of the T-form firms is as expected since these firms are going through a transition. Also noteworthy is the good performance of the U-form

(Single Business) firms.

Put table 3 here

Hill (1988) tried to explain the fact that the M-form structure was not superior to other structures by offering a contingency hypothesis. Specifically, he argued that the M-form structure is the superior structure only for unrelated firms; while the CM-form structure is superior for related firms. His study provided tentative support for this proposition.

In this study we have argued that as long as relatedness is measured in the traditional (misleading) way, there is no reason to expect either the CM-form to be a superior organizational structure, or Hill's contingency proposition to hold. To test for this, we replicate Hill's interaction effects. The results are shown in table 4. In total, a significant amount of variance in profitability is explained for the first two years under study and significant interaction effects are observed for all three years.

Put table 4 here

As expected from H_2A, Hill's (1988) contingency hypothesis is not supported by the results: for related firms, the CM-form structure is NOT associated with superior profitability (relative to the M-form structure); similarly, for unrelated firms, the M-form structure is NOT associated with superior profitability (relative to the CM-form structure). In fact, the profitability of the different sub-groups are exactly the opposite of what the contingency hypothesis proposes. The F-statistics of the differences in the means of various sub-groups of interest are reported in table 5. The only statistically significant difference occurs among Related and Unrelated CM-form firms: Unrelated firms that adopt a CM-form structure do better than Related firms that adopt the same structure. Again, we are unable to find support for Hill's (1988)

contingency proposition when "relatedness" is measured using traditional methods.

Put table 5 here

As proposed in this paper, a possible explanation for results such as these that go against existing theory may be the inadequate way that relatedness among business units has been traditionally measured. Further support for this contention is offered in table 6 where we test for differences in profitability between Rumelt's (1974) strategic categories. Again, firms identified as "related" by traditional measures do not outperform other types of firms-- especially the "unrelated" firms. In fact, the "related" firms are the worst performers.

Put table 6 here

Overall, the results reported in tables 3-6 offer strong support for hypotheses H_2 and H_2A: as long as we measure relatedness in the traditional way, we find no support for the propositions that the CM-form organizational structure is superior to other organizational structures; or that the M-form structure is appropriate for Unrelated-diversifiers while the CM-form structure is appropriate for the Related-diversifiers (i.e. Hill's contingency hypothesis).

To test our third hypothesis and demonstrate that just following a Related-diversification strategy is not enough to generate superior performance and that a related-diversifier must also adopt the "appropriate" organizational structure, we estimate equation (3). The estimated coefficients from this equation are presented in panel (D) of table 2. As expected from H_3, the adjusted R^2 of this equation is significantly larger than the one obtained from equation 2--but the difference is not as big as we expected. Also of importance is the magnitude and sign of the coefficients of the interaction

terms in equation (3): first, whereas the variables MEDIA and CHANNEL came out with a positive sign, the interaction of these same variables with the CM form structure came out negative; this suggests that the CM-form structure does <u>not</u> enable the diversified firm to exploit potential synergies across distributors or to do umbrella branding. Second, whereas the variable SKILL came out with a negative sign, the interaction of this variable with the CM-form structure came out positive and highly significant. This suggests that firms which diversify across high-skilled businesses do not perform well unless structured appropriately. This would be consistent with the proposition that the CM-form structure provides the autonomy that these businesses require while at the same time allowing transfer of knowledge across businesses. Finally, the variables PUSH and INFRQPUR maintain their positive and significant sign, but the interactions of these variables with the CM-form structure come out statistically insignificant. This suggests that the CM-form structure does not help this kind of diversifiers perform better.

Overall, these results cast doubt on the effectiveness of the CM-form structure to transfer competences across business units. They suggest that the <u>fit</u> between the Related strategy and the CM-form structure is a pre-requisite for superior performance--but only for firms diversifying across high skilled businesses. This is consistent with Prahalad & Hamel's (1990) argument that companies which are based on a structure of SBUs will not be effective in transferring assets and competences across their SBUs (see also Bartlett & Ghoshal, 1993 who argue that large global corporations are innovating a new organizational form which is premised on knowledge and expertise rather than capital or scale as the key strategic resource).

DISCUSSION AND SUMMARY

The central thesis of this paper has been that the traditional ways of measuring relatedness between two businesses are incomplete, primarily because they do not **explicitly** take into consideration the underlying assets/resources of these

businesses. Specifically, we have argued that relatedness must be measured at the strategic asset level. In addition, we have argued that since strategic assets vary in importance (according to their characteristics), the strategy of relatedness will also vary in its value-generating potential according to the underlying strategic assets it is trying to exploit.

We have proposed that the strategy of Related Diversification will enhance performance only when it allows a business to obtain preferential access to "strategic assets"--those that are valuable, rare, imperfectly tradable and costly to imitate. Even then, the advantage afforded by this access will eventually decay as a result of asset erosion and imitation by single-business rivals. In the long-run, therefore, only accumulated competences that enable the firm to build new strategic assets more quickly and efficiently than competitors will allow the firm to sustain supernormal profits. Both these short- and long-run advantages are conditional, however, on the diversified firm putting organizational structures in place that allow it to share its existing strategic assets and transfer the competence to build new ones between divisions in an efficient manner.

These considerations led us to propose that to exploit the strategy of relatedness successfully, firms need to develop appropriate internal mechanisms for transferring competences and assets across business units in a more efficient way than what can be achieved in the open market (through, for example, consultancy agreements, licensing, franchising and subcontracting). This, in turn, implied that related firms that adopted the CM-form structure should have superior performance compared to related firms that did not adopt the CM-form structure.

We have tried to support these propositions through our empirical analysis. In general, we have demonstrated that our proposed way of measuring relatedness, though not perfect, is superior to the Rumelt (1974) classification as well as the entropy index. We have also shown that firms operating in

portfolios of businesses which shared similar opportunities to exploit brand building and marketing and channel management skills, gained significant benefits from related diversification. Finally, we have shown that those firms that not only followed the relatedness strategy but also adopted the CM-form structure performed well when they diversified in high-skilled businesses. However, our empirical results tend to cast doubt on the effectiveness of the CM-form structure to transfer competences across business units.

The notion that we need to reconsider how we view relatedness is not new. Building on the work of Prahalad and Bettis (1986), Hill (1990, p. 28) suggests: "...a need to re-think the concept of "relatedness". Management authors have typically defined relatedness between business units by the degree of commonality between the value creation functions of different businesses (e.g. similarities in technology, distribution, marketing, etc). Prahalad & Bettis' work suggests that "relatedness" is as much an issue of strategic similarity as it is of operating similarity. In particular, some of the so called conglomerate firms that are typically treated as "unrelated" enterprises may in fact exhibit a degree of strategic similarity across their business units that makes them "related" in a cognitive sense."

We believe that this paper, along with recent work by Farjoun (1994), Markides and Williamson (1994) and Robins and Wiersema (1995), have started the process of "re-thinking" about relatedness. Much work still needs to be done. In particular, we still need to develop measures of relatedness that take into consideration "cognitive" aspects of relatedness. We also need a deeper understanding of the relative benefits of related diversification, and especially whether exploitation of economies of scope is the predominant benefit that arises from this strategy. The role of the CM-structure in allowing the firm to accumulate and cross-utilise "strategically-important" assets also needs to be explored further. We believe that future research will be successful in exploring these issues primarily by utilising a small-sample design that studies a few diversified firms in detail.

Footnotes

1. It is very important for our argument to explicitly state from the start that we consider "strategic assets" to be different from competences. In common with Williamson (1975), Prahalad and Hamel (1990), and Teece et al (1991) we make a distinction between assets and competences (the know-how to build these assets -- sometimes referred to as "dynamic capabilities"). By contrast, other authors (e.g. Barney, 1986, 1991; Wernerfelt and Montgomery, 1988; and Peteraf, 1993) tend to use the term "resource" to include both strategic assets and competences. In this paper, strategic assets are assets that underpin a firm's cost or differentiation advantage in a particular market and are imperfectly imitable, imperfectly substitutable and imperfectly tradeable. These assets also tend to be market-specific. An example would be Honda's dealer network distributing and servicing its motorbikes. Core competences can then be viewed as the pool of experience, knowledge and systems that exists elsewhere in the same corporation and can be deployed to reduce the cost or time required either to create a new, strategic asset or expand the stock of an existing one. Thus, Honda's experience in building competitive dealer networks for a particular class of consumer durables would be an example of a core competence. Each of these networks (one for motorbikes and another for lawn mowers, for example) would be a separate strategic asset: "different trees, sharing the same (core competence) root stock".

2. Although diversifiers can potentially out-perform single-firm businesses under these circumstances, they may still fail to enjoy super-normal profits if large numbers of firms have the option to diversify in the same way open to them, because then any abnormal returns could be competed away by rivals diversifying in the same manner.

3. The rate at which assets decay is different for different assets. For example, some assets such as reputation or umbrella brands can be leveraged widely with little decay. In addition, whether stocks decay or lose value depends on

the nature of the environment. For example, in stable environments, asset stocks decay slowly. We are grateful to an anonymous reviewer for suggesting these points to us.

4. The term was first introduced by Lippman and Rumelt (1982) to describe the phenomenon surrounding business actions and outcomes that makes it difficult for competitors to emulate strategies; Reed and DeFillippi (1990) identify three characteristics of competency that individually or in combination can generate causal ambiguity: tacitness, complexity and specificity.

5. A similar idea is behind the concept of barriers to mobility (Caves and Porter, 1977).

6. This will be necessary even if competitors were to stand still because most strategic assets will be subject to erosion over time (see Eaton and Lipsey, 1980). Customer assets such as brands, for example, will decay as new customers enter the market or former customers forget past experience or exit the market; patents will expire.

7. As argued in Footnote 1, we consider strategic assets to be different from competences.

8. We are indebted to Charles Hill for making his original questionnaires available to us.

9. The analysis was repeated by including the "Dominant" firms in the "Related" category. The results remain the same.

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Table 1: Correlation Matrix[a]

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7) -	(8)	(9)	(10)	(11)	(12)
(1) SLSGROW	-											
(2) A/V MEDIA	-0.102	-										
(3) A/V CHANNEL	-0.131	0.201	-									
(4) A/V SKILL	-0.097	0.616	0.323	-								
(5) A/V PUSH	-0.018	0.312	0.314	0.505	-							
(6) A/V INFRQPUR	0.047	-0.033	0.034	0.093	0.459	-						
(7) CM*A/V MEDIA	-0.033	0.239	0.438	0.142	0.183	0.109	-					
(8) CM*A/V CHANNEL	-0.108	0.088	0.821	0.127	0.178	0.048	0.633	-				
(9) CM*A/V SKILL	-0.093	0.146	0.509	0.311	0.100	0.067	0.758	0.687	-			
(10) CM*A/V PUSH	0.037	0.128	0.508	0.054	0.382	0.148	0.745	0.695	0.586	-		
(11) CM*A/V INFRQPUR	0.037	0.051	0.271	-0.014	0.107	0.354	0.603	0.468	0.498	0.649	-	
(12) ROS88	0.119	0.111	0.042	-0.141	0.067	-0.171	-0.026	-0.045	-0.046	0.089	-0.066	-

(a) $N = 95$; Correlation coefficients greater than 0.202 are significant at $p < 0.05$, those greater than 0.264 are significant at $p < 0.01$, and those greater than 0.334 are significant at $p < 0.001$.

Table 2: Diversification Strategy, Organizational Structure and Profitability [a]

Independent Variables	Dependent Variable = ROS88			
	(A)	(B)	(C)	(D)
Constant	13.069	11.355	13.01	12.496
	(8.78)***	(6.30)***	(1.71)*	(1.32)
RELATED	-1.105	-	-	-
	(-0.74)	-	-	-
DR87	-	0.766	-	-
	-	(1.17)	-	-
SLSGRW	0.0676	0.0679	0.091	0.091
	(1.20)	(1.22)	(1.33)	(1.32)
MEDIA	0.486	0.956	-	-
	(0.35)	(0.69)	-	-
A/V MEDIA	-	-	2.126	2.806
	-	-	(2.32)**	(2.87)***
A/V CHANNEL	-	-	0.625	4.193
	-	-	(0.56)	(2.07)**
A/V SKILL	-	-	-0.970	-1.398
	-	-	(-3.36)***	(-3.91)***
A/V PUSH	-	-	4.654	4.844
	-	-	(2.44)**	(1.99)**
A/V INFRQPUR	-	-	0.458	0.422
	-	-	(2.44)**	(1.96)**
(CM*A/V MEDIA)	-	-	-	-4.647
	-	-	-	(-1.55)
(CM*A/V CHANNEL)	-	-	-	-5.826
	-	-	-	(-2.29)**
(CM*A/V SKILL)	-	-	-	1.524
	-	-	-	(2.22)**
(CM*A/V PUSH)	-	-	-	2.970
	-	-	-	(0.704)
(CM*A/V INFRQPUR)	-	-	-	-0.071
	-	-	-	(-0.17)
	N = 97	N = 97	N = 94	N = 94
	R^2 = 0.022	R^2 = 0.031	R^2 = 0.183	R = 0.26
	F = 0.718	F = 0.996	F = 3.28	F = 2.65

(a) t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: Organizational Structure and Profitability

Organ. Structure	No of firms	ROS 86	ROS 87	ROS 88
M-form	53 (40.1%)	12.02%	12.51%	13.16%
CM-form	27 (20.4%)	11.51	11.96	12.40
H-form	19 (14.4%)	11.10	11.74	13.16
T-form	10 (7.6%)	8.44	11.18	12.88
X-form	6 (4.5%)	16.82	17.89	16.60
U-form	14 (10.6%)	13.85	13.38	13.94
Uncertain	3 (2.3%)	15.59	15.67	16.14
	132			

F-Statistics				
All		1.75	1.09	0.44
M-form Vs REST		0.54	0.81	0.57
CM-form Vs REST		1.00	1.41	1.39
H-form Vs REST		1.50	1.47	0.31
T-form Vs REST		5.69**	1.57	0.34
X-form Vs REST		3.55*	3.76*	1.06
U-form Vs REST		0.51	0.00	0.00
Uncertain Vs REST		0.91	0.49	0.38

** $p < 0.05$
* $p < 0.1$

Table 4: Diversification, Organizational Structure and Profitability[a]

Organizational Structure	STRATEGIC CATEGORY											
	Single-business			Dominant-business			Related-business			Unrelated business		
	ROS 86	ROS 87	ROS 88	ROS 86	ROS 87	ROS 88	ROS 86	ROS 87	ROS 88	ROS 86	ROS 87	ROS 88
M-form	(11) 10.69%	11.08%	12.02%	(16) 11.52%	12.22%	12.78%	(15) 13.51%	13.68%	13.79%	(11) 12.06%	12.76%	13.97%
CM-form	(3) 13.57	13.11	12.38	(11) 11.25	12.37	13.21	(8) 11.18	10.87	10.89	(3) 16.13	14.99	16.14
H-form	(3) 15.11	15.70	13.44	(6) 13.15	15.23	17.62	(4) 5.53	3.40	4.59	(4) 10.54	12.37	12.99
T-form	(4) 7.51	8.06	16.19	(3) 14.77	15.06	14.44	(2) 4.91	13.44	12.15	(1) 6.55	7.44	-3.54
X-form	(2) 8.14	9.35	9.50	(3) 24.05	24.74	22.47	(1) 12.49	14.47	13.18	(0) -	-	-
U-form	(8) 14.66	15.67	15.25	(4) 12.59	10.36	12.48	(2) 13.13	10.25	11.64	(0) -	-	-

	F-Value		
Statistics	1986	1987	1988
Total Variance Explained	1.50*	1.51*	1.19
Organisation Structure Effects	1.79	1.12	0.43
Strategic Category Effects	0.36	0.69	0.93
Interaction Effects (Form/Strategy)	1.62*	1.86**	1.58*

** $p < 0.05$, * $p < 0.1$; (a) Number of firms in parentheses.

Table 5: Structure, Strategy and Profitability

CATEGORY	F-statistics		
	1986	1987	1988
(M-form and Related) Vs (M-form and Unrelated)	0.48	0.37	-0.07
(CM-form and Related) Vs (CM-form and Unrelated)	-1.89*	-1.88*	-2.37*
(M-form and Related) Vs (CM-form and Related)	1.14	1.23	0.27
(CM-form and Unrelated) Vs (M-form and Unrelated)	-1.00	-0.60	-0.54

* $p < 0.10$,

Table 6: Diversification Strategy and Profitability

Strategy	No of firms	ROS 86	ROS 87	ROS 88
Uncertain	4 (3.03%)	8.04%	9.27%	12.62%
Single-business	32 (24.24%)	11.93	12.54	13.48
Dominant-business	45 (34.09%)	13.12	13.67	14.45
Related-business	32 (24.24%)	11.34	11.49	11.66
Unrelated-business	19 (14.39%)	12.09	12.75	13.19
	132			

F-statistics

ALL		0.45	0.78	1.09
Single Vs Others		0.02	0.01	0.08
Dominant Vs Others		1.03	1.47	1.76
Related Vs Others		0.59	1.35	2.18
Unrelated Vs Others		0.00	0.01	0.00

Figure 1: Classification Exercise

Multidivisional? ⟹ No ⟹ U-form

⇩

Yes

⇩

Changed structure in 1987-89? ⟹ Yes ⟹ T-form

⇩

No (stability = 1)

⇩

Mixed form? ⟹ Yes ⟹ X-form

⇩

No

⇩

Head office involvement in
operating decisions? ⟹ Yes ⟹ CM-form
(Operate > 2)

⇩

No

⇩

Strong central controls? ⟹ No ⟹ H-form
(strategic ≤ 2)
(financial ≤ 2)
(ICM = 1)

⇩

Yes

⇩

M-form
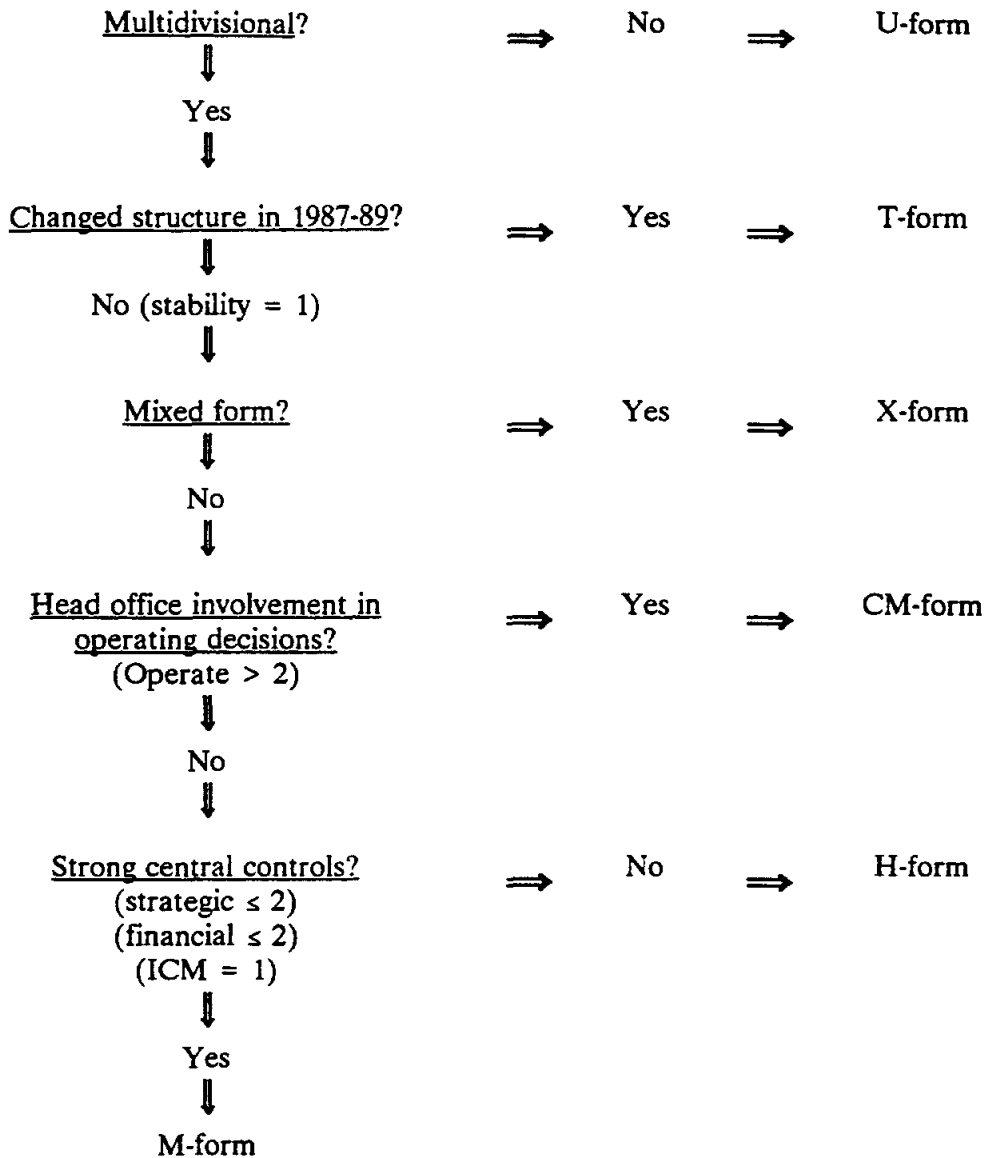
Source: Adapted from Hill (1988)

Appendix 1: Variables used in the study

(1) RELATED: Those firms classified as related-diversifiers using Rumelt's (1974) methodology.

(2) MEDIA: The expenditure on media advertising as a % of total sales of the product lines classified to each market.

(3) CHANNEL: The percentage of products which pass through one or more intermediaries before reaching the final user, rather than being sold direct to users by the manufacturer.

(4) SKILL: The proportion of "high-skilled" jobs in the industry as a percentage of total employment.

(5) PUSH: The cost of total marketing and sales spending other than that spent directly on media advertising as a percentage of sales.

(6) INFRQPUR: The proportion of product lines belonging to a given industry for which the user generally purchases with a frequency of less than once per year.

(7) SLSGRW: The annual growth rate of each industry as measured by sales growth.

(8) M-form structure: Multidivisional firms characterized by centralized strategic and financial but decentralized operating control systems.

(9) CM-form structure: Multidivisional firms characterized by head office involvement in operating decisions.

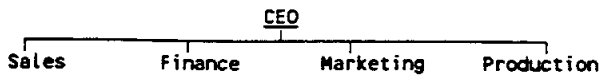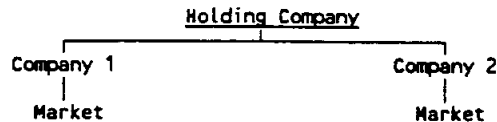(10) DR: The entropy index of Related Diversification

INSTRUCTIONS

1. Please answer questions by placing a check mark in the appropriate box or, where a scale of responses is given, by circling the appropriate response.

2. Check two or more boxes if necessary.

1. Please indicate which of the following most closely resembles the basic organizational structure of your company:
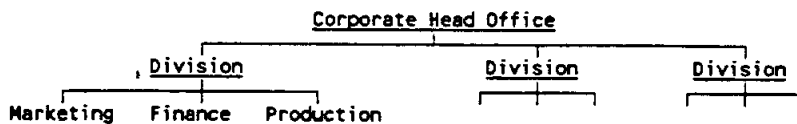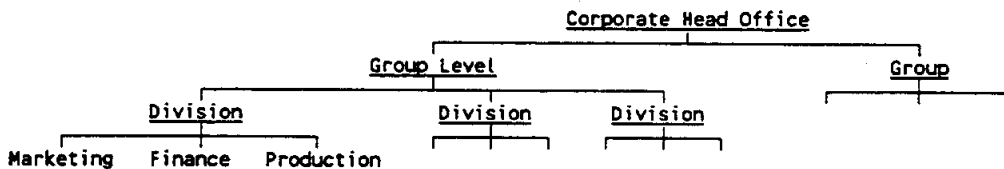
(a) **A functional structure** ☐

```
                    CEO
      ┌──────────┬───┴──────┬──────────┐
    Sales     Finance   Marketing   Production
```

   (b) **A Holding Company Structure** ☐

```
                Holding Company
          ┌──────────┴──────────┐
       Company 1            Company 2
          │                    │
       Market               Market
```

   (c) **A Divisional Structure** ☐

```
              Corporate Head Office
      ┌────────────────┬────────────────┐
   , Division        Division         Division
  ┌─────┼─────┐      ┌──┼──┐         ┌──┼──┐
Marketing Finance Production
```

   (d) **A Divisional Structure with Groups and/or Sectors** ☐

```
                          Corporate Head Office
          ┌───────────────────┴───────────────────┐
       Group Level                               Group
  ┌───────┼───────┐                            ┌──┼──┐
 Division     Division   Division
┌───┼───┐    ┌──┼──┐    ┌──┼──┐
Marketing Finance Production
```

   (e) **OTHER--Please Give Details** ☐

2. How long has the organizational structure you indicated been in existence?

   ☐ Less than a year

   ☐ About a year

   ☐ For two years

   ☐ For more than two years

   If your organization is divisionalized (i.e., if you checked (c), (d), or (e) in Question 1), please answer all of the remaining questions. If not, please go to Question #9.

3. How many operating divisions does your company have? _____

4. Into how many groups are these divisions organized? _____

5. Which of the following factors are used by the Corporate Head Office to evaluate the performance of divisions?

Please indicate the importance of each factor as follows:

1 = very important
2 = important
3 = Of average importance
4 = rarely used
5 = not a factor

PLEASE CIRCLE THE APPROPRIATE RESPONSE

Gross Profit	1	2	3	4	5
Profit Growth	1	2	3	4	5
Return on Sales	1	2	3	4	5
Return on Investment	1	2	3	4	5
Sales Growth	1	2	3	4	5
Markot Share	1	2	3	4	5
Cash Flow	1	2	3	4	5
Capital Investment Levels	1	2	3	4	5
Capacity Utilization	1	2	3	4	5
Labor Productivity	1	2	3	4	5
Cost Levels	1	2	3	4	5
Other--please specify	1	2	3	4	5

6. With respect to the cash generated by each division, is it:

☐ Left with the individual division, except for funds needed to pay dividends, pay central services, etc.

☐ Reallocated within the company as a whole by corporate headquarters

☐ Other--please specify _____

_____

_____

7. To what extent do <u>divisional</u> general managers have the authority to act on the problems described below, without corporate (or group) approval? (Assume business conditions are fairly good, and all divisions are profitable.)

Please circle the appropriate response using the following scale:

1 = The divisional manager can take action without any contact with corporate headquarters
2 = Divisional manager takes action--informs headquarters later
3 = Advise headquarters in advance of action he/she intends to take
4 = The divisional manager has to get formal approval from headquarters before taking any action

Problem Requiring Action:

- Hire a replacement for the division manager's secretary who is retiring	1	2	3	4
- Authorize a temporary $100,000 increase in division raw material inventory, in anticipation of a possible strike	1	2	3	4
- Select the replacement for the manufacturing superintendent who will retire soon	1	2	3	4

7. (continued)

Please circle the appropriate response using the following scale:

1 = The divisional manager can take action without any contact with corporate headquarters
2 = Divisional manager takes action--informs headquarters later
3 = Advise headquarters in advance of action he/she intends to take
4 = The divisional manager has to get formal approval from headquarters before taking any action

Problem Requiring Action:

- Pass final approval on the design of a new product, and authorize work to start on production tooling ... 1 2 3 4

- Settle a minor dispute with union representatives ... 1 2 3 4

- Fire the manufacturing superintendent for poor performance ... 1 2 3 4

- Establish next month's manufacturing schedule for the division, at an increased level which will require the hiring of two additional people in the factory ... 1 2 3 4

- Establish next month's manufacturing schedule at a substantially higher level which will require an addition of 50 people in the factory ... 1 2 3 4

- Postpone the scheduled introduction of a new model by 45 days and authorize a modification to the design ... 1 2 3 4

- Establish the list price of a major product line ... 1 2 3 4

- Increase the price of an existing product line by 5%, to attempt to recover cost increases in material and labor. This will place the price above the competitive level ... 1 2 3 4

- Make a change in the division inventory standards, which will reduce field shipping stocks but increase factory work-in-process inventory, maintaining the same total investment ... 1 2 3 4

- Increase investment in inventory on a different product by $1 million, because the sales department feels that they can get more sales if they have greater product availability ... 1 2 3 4

- Introduce a new system into the factory, that may lead to a strike ... 1 2 3 4

- Change the advertising program of the division, reducing magazine advertising but increasing direct mail and trade show promotional activities ... 1 2 3 4

- Authorize the marketing manager to increase the number of salesmen in the field, but reduce the number of manufacturing engineers to maintain the same total cost ... 1 2 3 4

- Authorize an 8% salary increase for the manufacturing superintendent, allowed for in the budget and within the rate range for the job ... 1 2 3 4

- Authorize the factory to work overtime two Saturdays next month to reduce the backlog of overdue orders ... 1 2 3 4

- Cancel two engineering development projects ... 1 2 3 4

- Identify potential acquisition targets and approach them for discussions ... 1 2 3 4

- Set the division's annual budget at the start of a new fiscal year ... 1 2 3 4

- Change the division's annual budget in mid-year ... 1 2 3 4

- Approach financial institutions for financing division projects ... 1 2 3 4

7. (continued)

Please circle the appropriate response using the following scale:

1 = The divisional manager can take action without any contact with corporate headquarters
2 = Divisional manager takes action--informs headquarters later
3 = Advise headquarters in advance of action he/she intends to take
4 = The divisional manager has to get formal approval from headquarters before taking any action

Problem Requiring Action:

- Change the division's main supplier	1	2	3	4
- Set a new strategic direction for the division	1	2	3	4
- Authorize a $1 million R&D expense	1	2	3	4
- Authorize lawyers to represent the division in court	1	2	3	4
- Set the transfer price at which his/her division's products are sold to other divisions within the company	1	2	3	4
- Negotiate with environmental activists	1	2	3	4

8. To what degree are the following the responsibility of Corporate Headquarters or Groups?

Please indicate the degree of responsibility as follows:

1 = Always the responsibility of corporate headquarters and/or groups
2 = Nearly always the responsibility of corporate headquarters and/or groups
3 = A shared responsibility with operating divisions
4 = Rarely the responsibility of corporate headquarters and/or groups
5 = Never the responsibility of corporate headquarters and/or groups

PLEASE CIRCLE THE APPROPRIATE RESPONSE

Overall Financial Control	1	2	3	4	5
Setting the Price Levels of Major Products	1	2	3	4	5
Approval of Major Investments	1	2	3	4	5
Long-term Strategic Planning	1	2	3	4	5
Public Relations	1	2	3	4	5
Relations with Financial Institutions	1	2	3	4	5
Legal Functions	1	2	3	4	5
Identifying Acquisitions	1	2	3	4	5
Deciding Upon Acquisitions	1	2	3	4	5
Setting Annual Budgets	1	2	3	4	5
Setting Business Strategy for Divisions	1	2	3	4	5
R&D Decisions	1	2	3	4	5

9. What year did the present CEO take over? _____

10. What is the CEO's area of expertise and education:

☐ Finance

☐ Marketing

☐ Engineering

☐ Manufacturing

☐ Legal

☐ Other; please specify _____

11. In the period 1981-1987, did the company come under any <u>hostile</u> takeover attempt?

☐ Yes

☐ No

If NO, did the management of the firm feel that the firm was a likely takeover target in 1981-87?

☐ Yes

☐ No

12. In the period 1981-87, did the firm undertake any restructuring?

☐ Yes

☐ No

If YES, please provide some details _____

_____

_____

_____

_____

COMPANY NAME: _____

RESPONDENT'S POSITION: _____

Once again--thank you for your cooperation: <u>**FULL CONFIDENTIALITY IS GUARANTEED**</u>

Would you like a copy of the findings?   ☐ Yes

☐ No