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EXPLOITING GLOBALIZATION POTENTIAL: U.S. AND JAPANESE STRATEGIES

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This paper develops a model of global strategy that includes the constructs of industry globalization potential, the use of global strategy, the role of organization and management and the performance consequences of using global strategy. Propositions are developed as to why American and Japanese MNCs might differ in their perceptions of industry globalization potential, in their desired global strategy response, in their organizationally-derived ability to implement global strategy and in their resulting performance. The model and arguments are examined in extensive interviews with senior executives at 36 worldwide businesses belonging to some of the largest American and Japanese MNCs. Data are analyzed using a partial least squares causal model. The results show that the Japanese firms have more globalized strategies than do the Americans, and that this factor affects their performance favorably.

The emerging field of 'global strategic management' has many aspects, as witnessed by the eclectic collection of papers in the *Strategic Management Journal's* special issue on global strategy (Bartlett and Ghoshal, 1991). One aspect concerns globally integrated competitive strategy: whether and how multinational companies (MNCs) should change their strategies to suit conditions in 'global' industries. Such global industries have been defined in various ways: Hout, Porter, and Rudden (1982) defined a global industry, in contrast to a multidomestic industry, as one in which a firm's competitive position in one country market is significantly affected by its competitive position in other country markets; Bartlett and Ghoshal (1989) defined a 'transnational industry' as being driven by simultaneous demands for global efficiency, national responsiveness, and worldwide learning; Morrison (1990) characterized a global industry as

having intense levels of international competition, competitors marketing a standardized product worldwide, industry competitors that have a presence in all key international markets and high levels of international trade. These definitions have the common thread of the need or opportunity to integrate strategy across countries.

Most of the empirical work in this field of global strategy has focused on American and European MNCs, with relatively little systematic research about Japanese companies. But a great deal has been written on Japanese management in general (e.g., Yoshino, 1968; Ouchi, 1981; Abegglen and Stalk, 1985) and on Japanese approaches to competitive strategy (e.g., Pascale and Athos, 1981; Kotler, Fahey, and Jatusripitak, 1985). So this study seeks to partially integrate the fields of global strategy and of Japanese management and, in particular, to provide evidence on differences in American and Japanese approaches. To achieve this integration and comparison we review several of the key constructs and issues in global strategy, and develop arguments as to how Japanese companies might

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differ from American ones in each regard. Because of the complexity of the issues and emergent stage of the field we develop research questions rather than specific hypotheses. Thus, this study takes a primarily exploratory approach in generating its theory and evidence.

Our ingoing assumption is that globalization strategy is multidimensional. Setting strategy for a worldwide business requires choices along a number of strategic dimensions. Some of these dimensions determine whether the strategy lies toward the multilocal end of the continuum or the global end. As summarized by Yip (1989, 1992), there are five such dimensions:

- * *Market participation*—involves the choice of country-markets in which to conduct business, and the level of activity, particularly in terms of market share.
- * *Products/services*—involves the extent to which a worldwide business offers the same or different products in different countries.
- * *Location of value-adding activities*—involves the choice of where to locate each of the activities that comprise the entire value-added chain—from research to production to after sales service.
- * *Marketing*—involves the extent to which a worldwide business uses the same brand names, advertising and other marketing elements in different countries.
- * *Competitive moves*—involves the extent to which a worldwide business makes competitive moves in individual countries as part of a global competitive strategy.

Choices along these dimensions determine whether the strategy lies toward the multilocal end of the continuum or the global end. Intermediate positions are, of course, feasible. For each dimension, a multilocal strategy seeks to maximize worldwide performance by maximizing local competitive advantage, revenues or profits; while a global strategy seeks to maximize worldwide performance through sharing and integration.

CONCEPTUAL MODEL

The field of strategic management has four well-established analytical components or theoretical

constructs: industry structure, strategy, organization/management, and performance (e.g., Chandler, 1962; Hofer and Schendel, 1978). These constructs can be, and have been, applied to the analysis of, and the need for, global strategy. In this section we discuss the existing literature on the role of these constructs in global strategy theory, consider how American and Japanese businesses might differ, and develop our own integrated model relating the constructs to the actual level of global strategy used and consequent performance.

Industry structure

A central tenet of global strategy theory is that industries vary in globalization potential because of underlying industry structure or conditions (Porter, 1986; Morrison, 1990). This globalization potential means the opportunity to gain benefits from using globally integrated strategies in order to benefit from cost reductions (Kogut, 1985), improved quality of products or programs (Yip, 1989), enhanced customer preference (Levitt, 1983) or increased competitive leverage (Hout *et al.*, 1982; Hamel and Prahalad, 1985). These industry globalization conditions can be summarized as market, cost, government and competitive drivers (Yip, 1989). Each set of drivers has its proponents, with market drivers (e.g., globally common customer tastes) being particularly associated with Levitt (1983), cost drivers (e.g., global scale economies) with Porter (1986), government drivers (e.g., absence of trade restrictions) with Doz (1979), and competitive drivers (e.g., cross-country subsidization) with Hamel and Prahalad (1985).

There is likely to be a somewhat different pattern of drivers facing Japanese and American companies. This is easiest to see in terms of *government drivers*. Japanese and American companies come from very different home countries in terms of trade barriers, and also face different trade barriers in major market areas such as the European Community. *Cost drivers* are also likely to differ perceptually, since the home country costs will differ. *Market drivers* may not be objectively so different, but looking at the world from Japan, rather than the United States, may change the subjective reality. In particular, the relatively wide global diffusion of many aspects of American culture, contrasted

with almost no diffusion to-date of Japanese culture, may make customer tastes seem more globally homogenous to American eyes than to Japanese ones. The same may hold for perceptions of the transferability and viability of global marketing (e.g., global brand names and global advertising).

Competitive drivers may seem different, since Japanese companies are very focused on their compatriots (see Abegglen and Stalk, 1985, Ch. 3). There is, for example, a strong tendency for Japanese companies to pattern their overseas strategies on their Japanese competitors (e.g., Kotler *et al.* 1985). This means not necessarily a direct imitation, but rather that they pay close attention to the strategies employed by competition, and develop strategies that partly depend on the competitors' actual and anticipated moves (Hanssens and Johansson, 1991).

Strategy

A second central tenet of global strategy theory is that companies should respond to industry globalization potential with an integrated strategy. This strategy might include global market participation such as building major share in strategic countries (Ohmae, 1985), global product standardization (Levitt, 1983; Kogut, 1985; Walters, 1986), global activity concentration such as building a global value chain (Hout *et al.*, 1982; Kogut, 1985; Bartlett and Ghoshal, 1989), globally uniform marketing such as global brand names or advertising (Takeuchi and Porter, 1986; Jain, 1989), and globally integrated competitive moves such as cross-subsidized competitive moves or sequenced moves (Hamel and Prahalad, 1985; Porter, 1986). But there is limited evidence on the use of global strategy. Morrison and Roth (1992) found that American businesses did not make much use of it, although their study uses only a limited number of measures and is also restricted to U.S.-located businesses.

Japanese corporations are well known for their flexibility and quickness of strategic adaptation (see, for example, Pascale and Athos, 1981; Kagano *et al.*, 1984; Stalk, 1988). One would expect, therefore, that given the recent general increase in globalization forces, Japanese corporations would, in most cases, be closer than American ones to the needed level of global strategy. Furthermore, using global strategy

usually requires a longer term view (Yip, 1989), the ability to make sacrifices in some countries to benefit the worldwide business (Hamel and Prahalad, 1985), and the ability to implement centrally-determined decisions (discussed below). Japanese companies are well-known for exhibiting each of these characteristics (e.g. Kono, 1984; Brouthers and Werner, 1990). Thus, Japanese companies can be expected to exhibit a greater perceived need for a global strategy, and to be closer to optimum. On the other hand, their relatively recent emergence might lead to a lower actual level of global presence.

Organization/management

For a worldwide business to develop and implement a global strategy, strong control and coordination mechanisms must exist between and among MNC headquarters and subsidiaries (Ghoshal, 1987; Bartlett and Ghoshal, 1989). An extensive literature (reviewed by Martinez and Jarillo, 1989) exists on the subject of MNC control and coordination mechanisms, although mostly predating the current debate on global strategy. Nevertheless, this literature clearly suggests the mechanisms that would apply to facilitating the use of global strategy. Which elements of organization are more important in facilitating the implementation of global strategy?

In terms of *organization structure* Bartlett and Ghoshal (1987, 1989) argue for a network structure that facilitates global learning. Ghoshal (1987) suggests that the tendency of global strategy toward a centralized global authority, and the potential corresponding erosion of global learning benefits, is one of the 'strategic trade-offs' associated with pursuing a global strategy. According to this reasoning, the greater centralization of Japanese companies should help them to better implement global strategy. A special aspect of organization structure is whether control of a worldwide business is split between separate domestic and international divisions. Yip, Loewe and Yoshino (1988) argue that American MNCs are more likely than European and Japanese MNCs to have such a split, and that this split reduces the ability to implement a global strategy.

Prahalad and Doz (1987, Ch 8) down-play the role of organization structure in global strategy, emphasizing instead integrative *management processes* such as global information

systems, global business teams, coordination committees, task forces and other cross-country coordination devices. Similarly, European-based research (e.g., Hedlund, 1980, and Edström and Lorange, 1984) has found evidence of more informal and subtler mechanisms as MNC control processes. Bartlett and Ghoshal (1989) also stress the importance of management processes that allow a balance between headquarters and subsidiary. Jaeger (1983) and Jaeger and Baliga (1985) found that Japanese MNCs employed a kind of cultural control (based on socialization) rather than control through more formal mechanisms. Egelhoff (1984) found that the cultural control described above was based on the use of expatriates, a high frequency of visits, a policy of transfer of managers, and a strong socialization process. At the same time, part of the Japanese centralization is achieved by the extensive use of newer communication devices, such as through the very heavy use of telefaxes. In consequence, one would expect the American business to be more dependent on formal periodic reporting. The Japanese, on the other hand, will be likely to rely more on informal, people-oriented coordination devices to manage their dispersing organizations.

Performance

The existence of industry globalization potential implies that companies can derive globalization-related benefits for the use of globally integrated strategy, and hence improve performance. Conversely, a strategy that is more global than warranted by industry globalization potential will yield drawbacks that result in worse performance. Previous studies have provided very limited evidence. Roth and Morrison (1990) found no significant difference in profit performance among businesses facing (1) global integration pressures, (2) local responsiveness pressures, and (3) both pressures. A narrower study, by Kotabe and Omura (1989) found that the market share and profit performance of 71 European and Japanese firms serving the U.S. market was negatively related to the extent to which products were adapted for the U.S. market, i.e., businesses with globally standardized products performed better.

In terms of American-Japanese differences,

the well-known Japanese penchant for market share gains at the expense of short-term profits (Clark, 1979: 221; Kagano *et al.*, 1984; Kono, 1984; Picken, 1987) suggests that a drive towards global strategy is viewed as a means to increasing share rather than profits. Japanese companies usually have, or at least report, significantly lower profitability on average than do American companies (Haar, 1989). Thus, the closer the Japanese get to the perceived optimal level of global strategy, the stronger the impact on market share, with no necessary impact on profits. In contrast, American firms should be more motivated by profit maximization goals, and can be expected to derive more direct profit benefits from an optimal global strategy (Abegglen and Stalk, 1985: 177). Odagiri (1990) conducted an extensive review of studies comparing American and Japanese profit rates, concluding that Japanese profitability is indeed lower on average even after various adjustments (e.g., for accounting methods and the cost of capital), and that the source of the difference arises from American companies emphasising the maximization of shareholder wealth, while the Japanese emphasize employee utility.

Relating the constructs

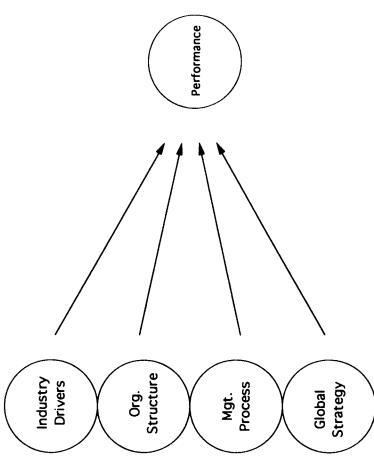
We have discussed the roles of several constructs in globalization and global strategy:

- * industry globalization drivers
- * organization structure
- * management processes
- * globally integrated strategy
- * performance
- * national base

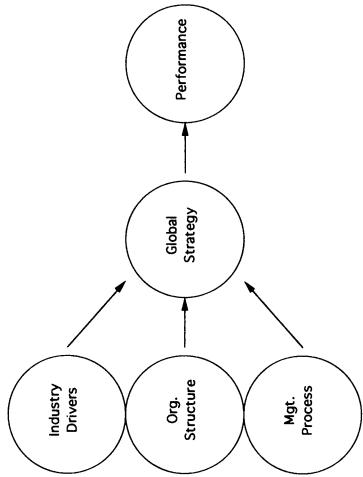
How do the constructs link up with each other? Alternative conceptual models are possible, each with a different combination of relationships. But, disregarding nationality for the moment, these different possible models fall into a limited number of categories. In particular, the models increase in complexity in terms of the number of *levels* of linkages. The alternative linkages are given in Figure 1.

Although necessary from an exploratory data analytical viewpoint, the simpler one- and two-level specifications need little discussion.

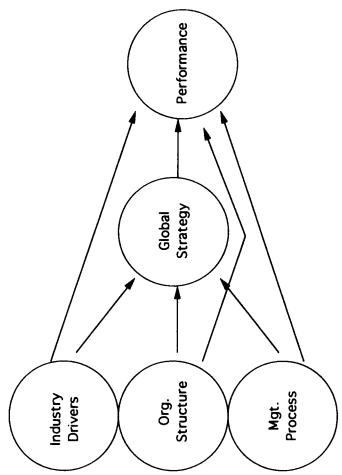
**Specification 1 - Direct Effects on Performance
(One-level)**



**Specification 2 - Only Global Strategy Affects Performance
(Two-level)**



**Specification 3 - All Factors Affect Performance
(Two-level)**



**Specification 4 - Strategy Follows Structure
(Three-level)**

**Specification 5 - Structure Follows Strategy
(Three-level)**

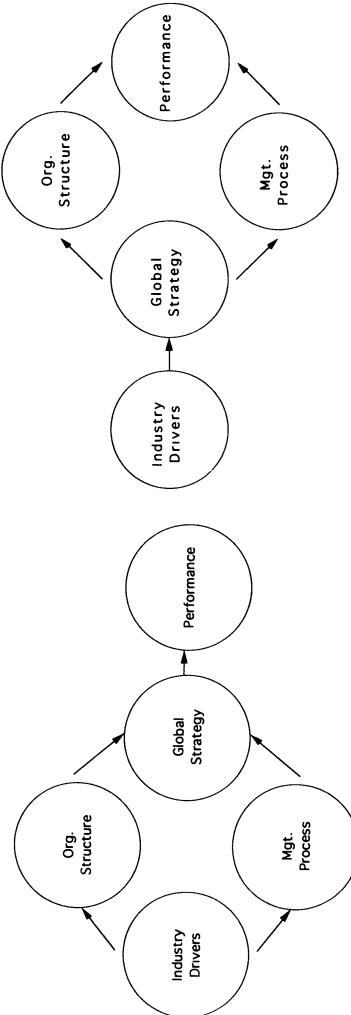


Figure 1. Alternative models of globalization

Moving to models with three levels of effects allows more conceptual scope and incisiveness. For example, even though high industry globalization potential should lead to increased use of global strategy, organization structure and management processes might affect the ability to implement global strategy. Thus, one specification would hypothesize that industry globalization drivers should lead managers to change a company's organization structure and management processes in order to implement a particular type of global strategy. Specification 4—*Strategy Follows Structure*—provides such a set of relationships, and requires three levels of effects. Industry Globalization Drivers is an exogenous construct that affects both Organization Structure and Management Processes. These in turn affect the choice and implementation of Global Strategy. Performance is then affected only by Global Strategy. The key assumption here is that the ability to use global strategy is determined by the existing state of organization structure and management processes. Such a view would fit with the argument that lags in organization and management have constrained firms' ability to implement global strategy (e.g., Bartlett and Ghoshal, 1989). In particular, the global strategy response to industry globalization conditions is very much affected by organization structure and management processes. In consequence, there may well be a lag or gap between the optimal global strategy indicated by industry structure and the actual global strategy achievable by the organization.

It could also be argued that global strategy changes precede organization and management changes, following Chandler's (1962) argument that structure follows strategy. This is depicted in Specification 5—*Structure Follows Strategy*, which reverses the sequence of Specification 4. In particular, Organization Structure and Management Processes now mediate the effect of Global Strategy on Performance. In this model, companies implement a global strategy in response to industry globalization drivers, but the effectiveness, in terms of performance, of the global strategy depends on whether a suitable organization structure and management process have also been instituted.

Lastly, as discussed earlier, nationality (being American or Japanese) can potentially affect

several constructs, including performance. Rather than attempting to specify *a priori* where nationality has the greatest effect in our models, we will treat it as an empirical effect to be explored in the data collected.

RESEARCH METHODOLOGY

Choice of research method

Previous clinical studies (e.g., Bartlett and Ghoshal, 1989) have examined a large number of constructs but, inherently, did not do so in a systematic fashion with common measures across sites. Studies with large samples and short questionnaires (e.g., Kotabe and Omura, 1989; Morrison and Roth, 1992) on the other hand, are typically constrained to examine very few constructs. What seems particularly needed is a methodology that can fill the missing middle ground by examining a comprehensive number of constructs on a systematic basis. In addition, each of the constructs should be measured using the multiple indicators discussed above. It seems more important at this time to be able to examine *relationships* among the many different constructs than to generalize about the incidence or effects of a few constructs. Such a study should also include an open-ended element to allow the researcher to better learn about this highly complex topic. Given the complexity of the subject, a purely quantitative analysis is unlikely to yield a clear choice among the competing models postulated. Thus, this study uses semistructured personal interviews that cover a large number of topics in systematic fashion with a moderate size sample (36 businesses). Personal interviews with company management make it possible to explain concepts and measures, to help reveal problems in the measures and questions, and to allow unstructured discussion to elicit modifications of the framework. Although the limited sample prevents wide generalizability, this was enhanced by targeting one type of MNC: very large companies with a high proportion of international revenues. Similarly, even a limited sample can be designed to produce an eclectic sample of industries. Such differences are, a fortiori, desirable when investigating the linkages from industry globalization drivers to the differential use of global strategy.

Development of data gathering instrument

From a measurement perspective, the broad theoretical constructs discussed are best viewed as 'latent' variables, not directly measurable on a single scale. To measure such latent constructs, it is necessary to identify multiple indicators. Measures of the industry globalization drivers and of the elements of global strategy, organization and management were developed by working with four multinational companies. In each company the researcher worked with both headquarters and local country management to formulate and scale the measures. A questionnaire was developed, using these measures, with slightly different versions for products and for services. Most of the questions used equal appearing intervals on a five-point scale for the response. The basic constructs were measured by the following multiple indicators:

INDUSTRY GLOBALIZATION DRIVERS

- * *Overall market drivers*
- * *Overall cost drivers*
- * *Overall government drivers*
- * *Overall competitive drivers*

ORGANIZATION STRUCTURE

- * *One global head*
- * *International division*
- * *Business dimension of matrix*
- * *Geographic dimension of matrix*
- * *Functional dimension of matrix*

MANAGEMENT PROCESSES

- * *Cross-country coordination*
- * *Global budgeting*
- * *Global group meetings*
- * *Global performance review*
- * *Global strategy information system*

GLOBAL STRATEGY

- * *Global share balance*
- * *Standardized products*
- * *Activity concentration*
- * *Marketing uniformity*
- * *Integrated competitive moves*
- * *Overall global strategy*

PERFORMANCE

- * *Market share*
- * *Relative profitability*

The Appendix details the above measures.

Data collection

In each of the American companies, two managers were interviewed independently, and a researcher was present as the questionnaire was completed. This procedure was not feasible in Japan, with its more diffuse position descriptions and consensus-oriented decision-making style. To demand independent responses to the same question is impossible. Instead, the questionnaires were left with the designated respondent, who then polled the relevant people in the organization across the required functions, and reported their consensual responses. Because this process was time-consuming, the Japanese questionnaires were usually completed over the time span of several days, while the American interviews were completed in one session. The assistance with clarifications and explanations concerning the various questions had therefore to be done through return visits and via the telephone. In order to make questions about products and markets and competitors meaningful, the long (19 pages) questionnaire focused on the strategy of *one line of business, not on the corporation as a whole*. The English language form used was virtually identical between the U.S. and the Japanese companies. Since many of the English-language global strategy concepts are used also in the Japanese management vocabulary, no translation was attempted.

Response bias

As with most cross-national questionnaires, there are possible biases. For example, the responses may be based on a misunderstanding of the meaning of the concepts covered, or a systematic response pattern (such as consistently overestimating one's achievements). If such aberrations occur, and if they are different between the Japanese and the Americans, there will be a systematic bias in their respective answers (see, for example, Douglas and Craig, 1983: 190–201). Despite our efforts to communicate the meaning of the various concepts to the respondents (see more on this below), we can not be entirely confident that in terms of absolute response values our data are completely clean. Also, because slightly different data collection approaches were used in the two countries, there is

a possible method bias in direct comparisons of average levels of the variables.

But at another level of analysis, namely the relationships between variables, the response problem is not particularly damaging. Even if the mean levels of some variables might be incorrect, there is often less reason to mistrust the derived correlations between the variables. For example, even if the sample averages for the Japanese lie too low because they consistently underestimate their achievements, the same instinct will usually lead to lower averages on related variables, and the correlations between the variables may therefore be correct. Thus, by focusing mainly on the relationships between the variables, one can minimize the likelihood that response biases seriously distort the results.

There may also be bias inherent in self-reported and perceptual responses. This may be particularly strong for the measure of performance. But both Dess and Robinson (1984), and Venkatraman and Ramanujam (1986, 1987) have provided evidence supporting the general reliability of self-reported performance measures. Self-reports of performance and other measures have been used in a number of studies of global strategy, including Samiee and Roth (1992), and Morrison and Roth (1992).

Sample

The sampling was purposive, not random. To investigate the research questions a variety of industries needed to be included, so that the strategic drivers would show variation across businesses. The approach used was to identify international companies, in a broad cross-section of industries, matched as closely as possible across the two countries. We then recruited the companies based on letters of recommendations, past contacts, and similar networking approaches. We were able to recruit leading businesses in a wide variety of industries, approximately matched between the American and Japanese samples (Table 1).

The study participants were some of the largest companies in their respective countries. For example, 56 percent of the American businesses and 67 percent of the Japanese businesses were the domestic market leaders in their industry. The American businesses averaged 42 percent of revenues as being international, and the Japanese 37 percent. These proportions are quite high for

Table 1. Industries in sample

American businesses	Japanese businesses
financial service	financial service
toothpaste	toothpaste
detergent	toilet soap
beverage	beverage
fashion apparel	cosmetics
furnishing	watches
passenger automobile	cameras
automotive components	consumer electronics (1)
personal computers	consumer electronics (2)
business computers	passenger automobile
mainframe computers	tractors
specialized computers	floppy discs
industrial controls	photocopiers
electrical insulation	mainframe computers
specialty coatings	semi-conductors (1)
building supply	semi-conductors (2)
chemicals	control instruments
polyester/plastics	ball bearings

American and Japanese businesses, compared with, for example, the *Fortune* 500 as a whole. The American parent companies included Armstrong World Industries, Bausch & Lomb, Citicorp, Chrysler, Colgate-Palmolive, Eastman Kodak, E. I. Du Pont de Nemours, Honeywell, IBM and McDonnell-Douglas. Most of the Japanese companies declined to be named, but the list of industries should indicate that we were able to recruit many of the 'crown-jewels' of the Japanese economy. All of the Japanese companies were among the 200 largest in that country and included 5 of the top 15. The combination of high share of large domestic markets, and international revenues being less than half the total, may seem atypical when one thinks of global companies. But one of the facts of life for firms from both the United States and Japan is that they do have very large home markets, and that global leaders based in these countries almost inevitably have a large share in their home base. These are characteristics that do indeed affect their global strategies. Our sample merely reflects this reality.

Validity and reliability

How well does our methodology capture the underlying phenomena? There are clearly likely to be variations in accuracy among companies,

respondents and measures. But what is important is that the underlying patterns of relationships be reasonably true rather than the accuracy of individual observations. One way to examine for this trueness of patterns is to look for convergence within our data set between American and Japanese responses, and convergence with prior theory and observations. One such test is provided by examining the responses on the location of value-adding activities. Prior expectations are that upstream activities (e.g., R&D) would be more concentrated geographically while downstream activities (e.g., service) would be more dispersed. The pattern of concentration did indeed decline for more-downstream activities, for both the American and Japanese samples, thus providing convergence both between the American and Japanese data and between our data and prior expectations. So even if one or more businesses are measured imperfectly, the sample as a whole seems to converge into an average pattern that fits prior theory and evidence.

Analytical method

The alternative models were evaluated using the PLS (partial least squares) method. This technique is now quite well established as a method for estimating path coefficients in causal models (see Fornell and Bookstein, 1982; Cool and Schendel, 1988; Cool, Dierickx, and Jemison, 1989; and Fornell, Lorance, and Roos, 1990). It has the advantage over LISREL of requiring less stringent assumptions about the randomness of the sample and the normality of the distribution of variables (Wold, 1982). Furthermore, it can accept smaller sample sizes, as each causal subsystem sequence of paths is estimated separately (Anderson and Gerbing, 1988). For example, Lohmöller (1982) demonstrates examples where a model with 27 variables is appropriately estimated with only 10 observations and a model of 96 indicators and 26 constructs is estimated on a sample of 100. Because of these characteristics PLS is particularly suitable for studies in the early stages of theory development and testing, and in dealing with comprehensive models.

RESULTS

We initially estimated the different models using the full set of indicators for each latent construct

(as listed earlier). Then for the sake of parsimony, and following standard practice (e.g., Fornell, 1982; Barclay, Duxbury, and Higgins, 1991) we reestimated the models using only the indicators with large weights for formative indicators or large loadings for reflective indicators. (The organization matrix measures fell out in this consolidation phase.) As one would expect, these more parsimonious models resulted in essentially the same path coefficients and levels of R^2 as the fuller models, and thus incurred little or no loss of information. The selected indicators are given in the model diagrams (Figure 2).

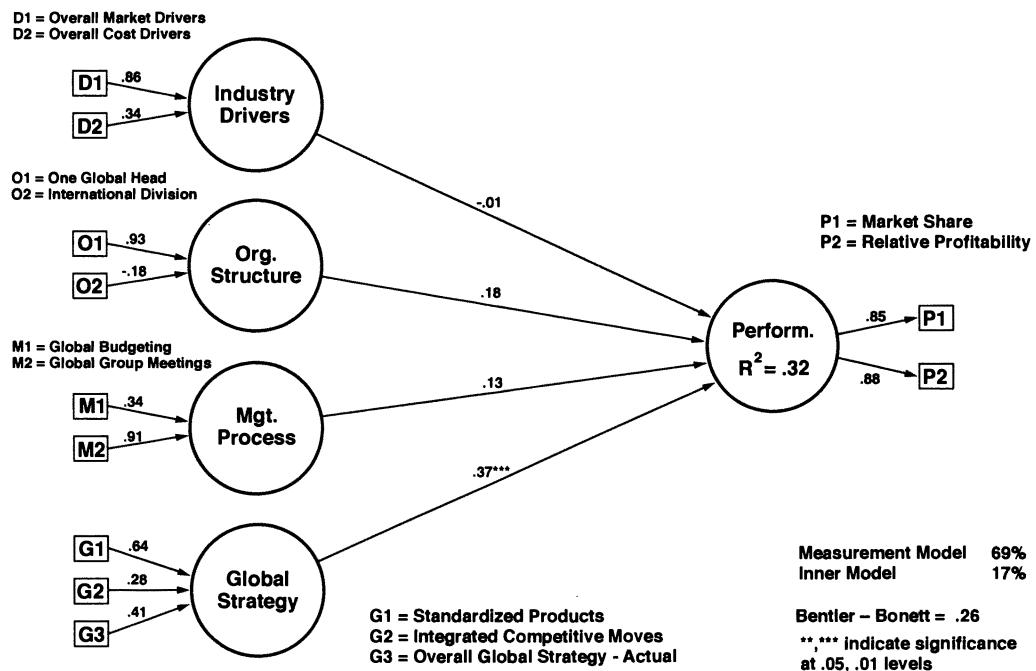
Including different versions for the location of the nationality construct, we estimated a total of eight models. The first five estimated models correspond to the conceptual specifications 1 to 5 discussed earlier. Models 6 to 8 add the Nationality construct in different positions to Specifications 4 ('Strategy Follows Structure') and 5 ('Structure Follows Strategy').

The measurement model

In PLS estimation the user needs to specify indicators as formative or reflective of their latent constructs. The formative specification is appropriate when the indicators directly help create the construct, while the reflective specification assumes that the indicators reveal various features of an underlying construct. Since the various aspects of strategy, industry conditions, management processes and organizational structure combine into broad factors, we treated the indicators as formative for these constructs. For performance we used reflective indicators (the formative and reflective conditions being indicated by the directions of the arrows in Figure 2). Performance is more of an abstract perceptual construct. For example, Japanese companies are often viewed as greater performers without making a lot of money. So superior performance is best viewed as reflected in different measures such as market share and relative profitability.

The PLS system estimates the weights and loadings for the indicators while trying to fit the entire model in an iterative fashion. Since all the alternative specifications (Models 1 to 8) are pointed towards Performance, it is not surprising that the indicator loadings and weights are very similar across the different models (Figure 2). Furthermore, the explained variance in the

Model 1
Direct Effects on Performance



Model 2
Only Global Strategy Affects Performance

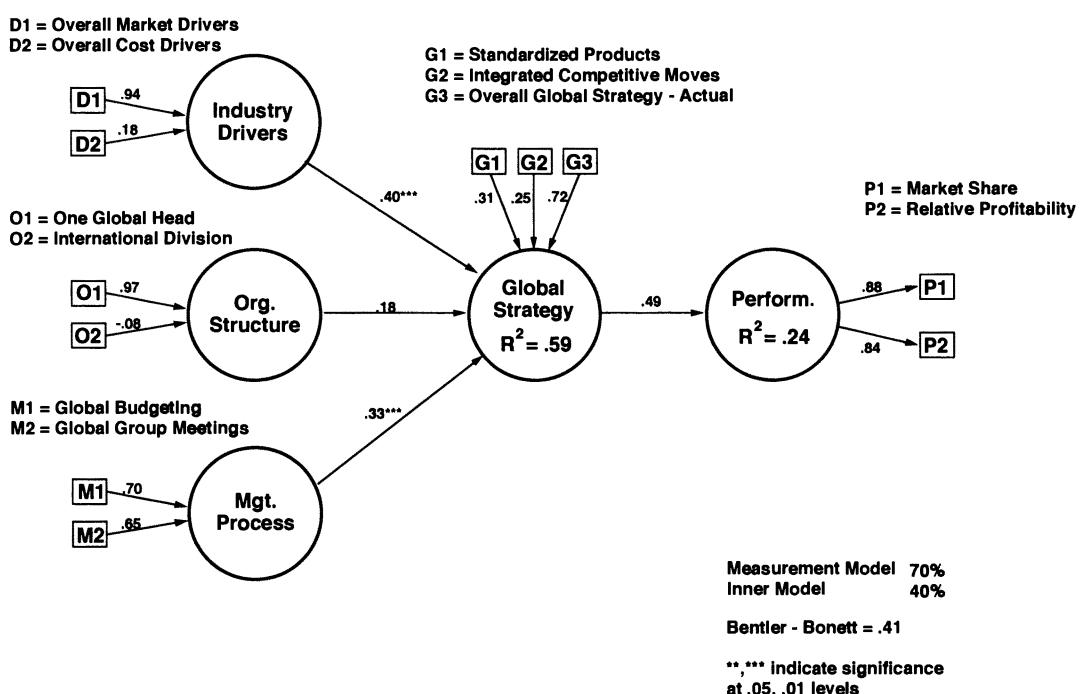
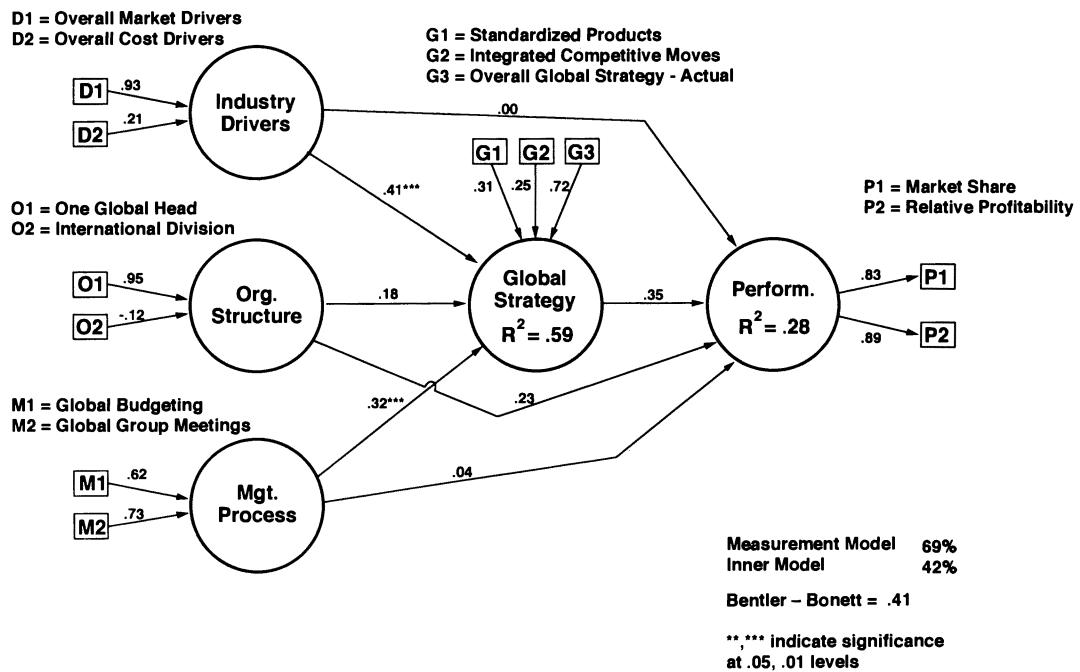
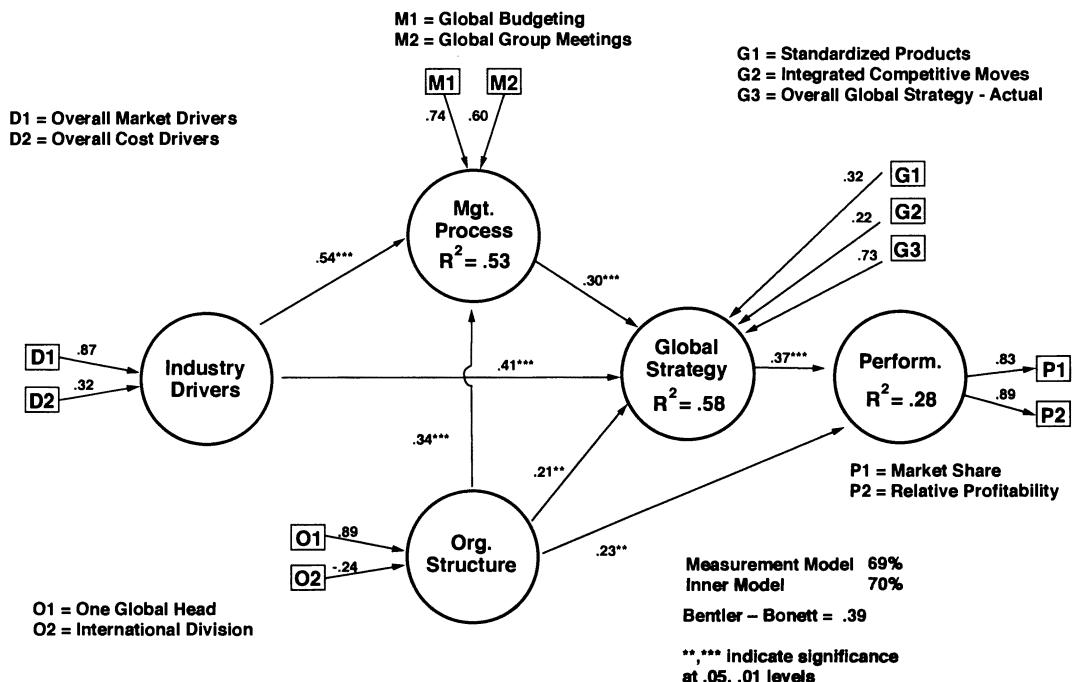


Figure 2. Results of PLS model estimations

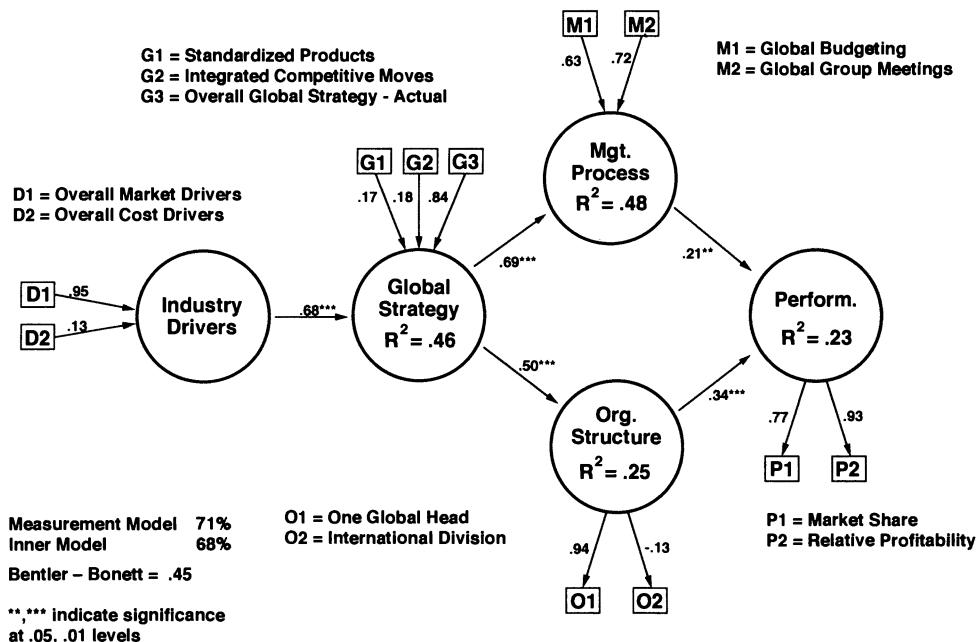
Model 3 All Constructs Affect Performance



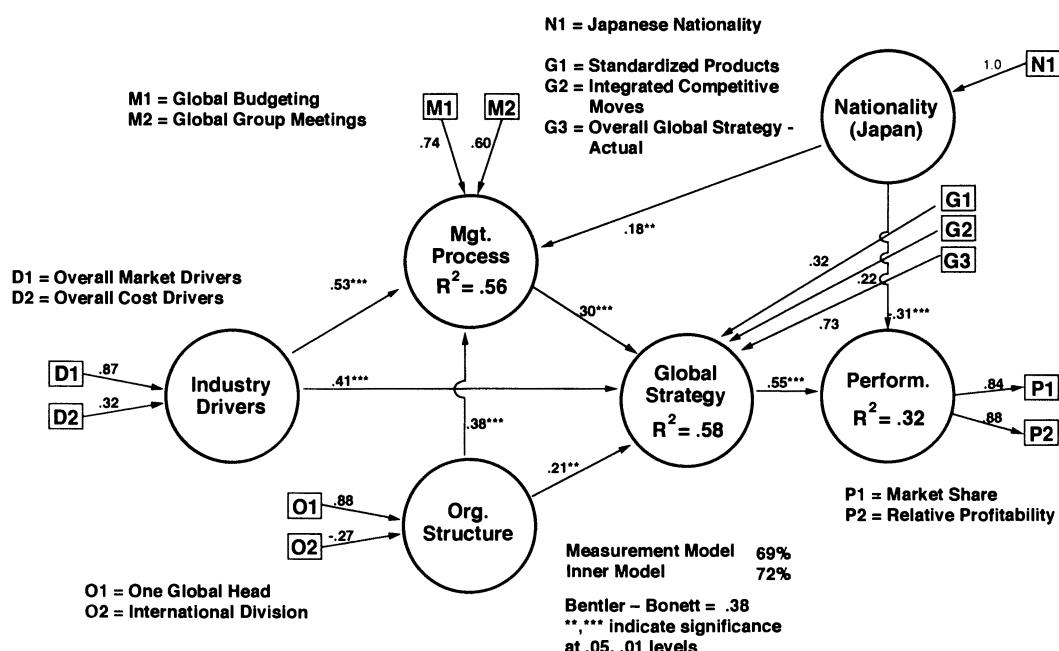
Model 4 Strategy Follows Structure



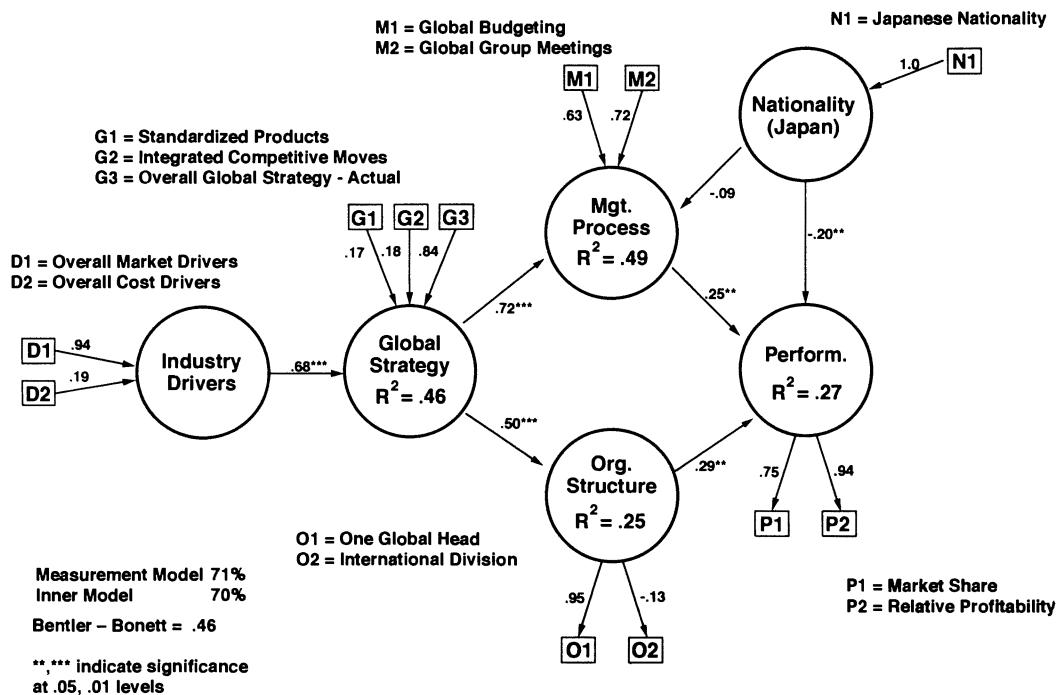
Model 5 Structure Follows Strategy



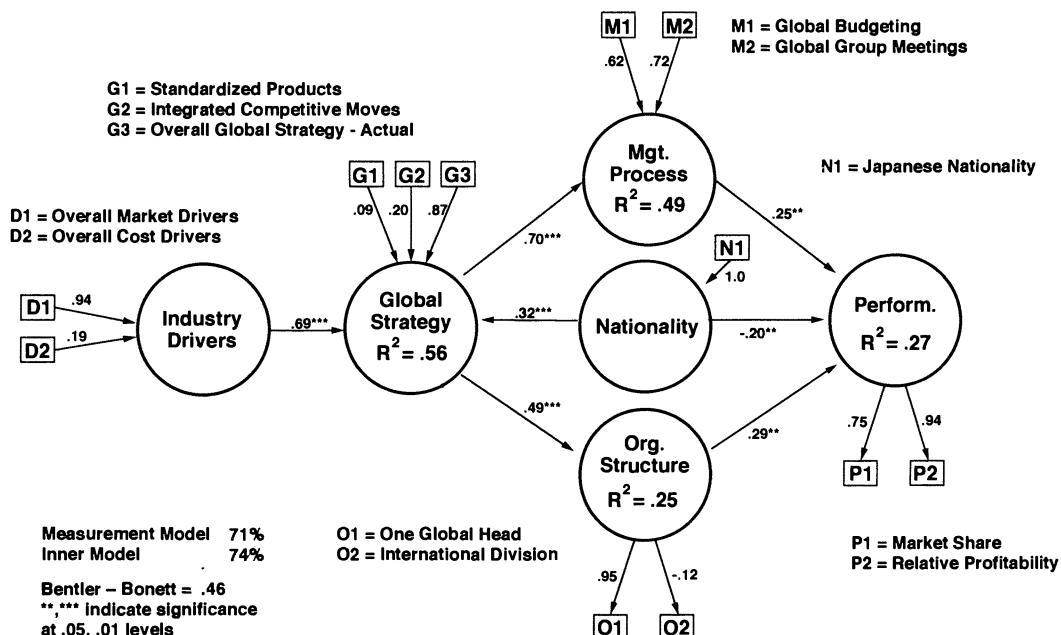
Model 6 Strategy Follows Structure (with Nationality)



Model 7
Structure Follows Strategy (Plus Nationality Affects Process)



Model 8
Structure Follows Strategy (Plus Nationality Affects Strategy)



measurement is high and almost identical across the eight models estimated, ranging between 69 percent and 71 percent. These levels compare favorably with typical requirements (Fornell, 1982). Thus, in terms of reliability, the chosen indicators measure reasonably well the latent constructs. Given the similarity among models we will discuss here the loadings and weights for one model only.

In Model 6 the Industry Drivers construct shows the strongest influence from Overall Market Drivers (0.87 coefficient) and Overall Cost Drivers (0.32), while the Overall Government Drivers and Overall Competitive Drivers are much less important. The Organization Structure construct becomes defined by One Global Head (0.88) and International Division (-0.27), i.e., an organization structure that facilitates global strategy has unitary authority and does *not* have an international division that is separate from the domestic one. The Management Process construct is made up of Global Budgeting (0.74) and Global Group Meetings (0.60). The various other indicators (e.g., Cross-Country Coordination, Global Performance Review, Global Strategy Information System) were included as indicators in the earlier estimations, but yielded low weights. The Global Strategy construct is a combination of two of the five strategy elements that we used—Standardized Products (0.32) and Integrated Competitive Moves (0.22) having the largest impact, while Global Share Balance, Concentrated Activities and Uniform Marketing had lower weights. The weight of Overall Global Strategy (0.73) suggests that there are aspects of the strategy not captured by the five strategy elements. The individual global strategy elements, e.g., Standardized Products, can be considered to be more objective indicators of Global Strategy while Overall Global Strategy is more perceptual. The Performance construct is reflected in both Market Share (0.84) and Relative Profitability (0.88), both having very high loadings. It is worth noting that the measure of profitability is *relative* to leading competitors, chosen so as to eliminate differences in average levels of industry profitability. Finally, the Nationality construct has only one indicator, which, therefore, has a full weight of 1.0.

With most indicators specified as formative, questions of validity and reliability take on a special meaning (see Fornell and Larcker, 1981).

For example, the Integrated Competitive Moves variable has a relatively small contribution to make in creating the Global Strategy construct. But as a formative indicator it is a part of the global strategy, and to eliminate it—because of its low weight—would mean that we ignore this dimension of the strategy (the standardized weights are most usefully interpreted as multiple regression coefficients). The only justifiable omission concerns the indicators with very low—and thus insignificant—weights.

In the case of reflective indicators, however, one wants all indicators to show high loadings (i.e., high simple correlations with the construct). Since the construct (Performance, in our case) exists independently of the indicators chosen, one wants every one of the indicators to reflect the underlying concept. The high loadings for both Market Share and Relative Profitability are thus necessary (although not in and of themselves sufficient) to establish reliability and validity.

Path linkages

Turning to the causal linkages between the latent constructs, Figure 2 also gives the relevant path coefficients and their associated significance levels. Because PLS makes no distributional assumptions, the significance levels cannot be based on standard *t*-statistics, which are unavailable. Rather, the algorithm provides jackknifed statistics, with a blindfolding routine rerunning the estimation for random subsamples (Lohmöller, 1982, Sec.5.3). The results are generally robust and the approach has become standard practice (see, for example, Fornell and Barclay, 1983). As can be seen in the results in Figure 2, most of the paths are significant at generally accepted levels, and in the expected directions. The coefficients will be discussed first across all the models, and then we will focus on the model choice issue.

Comparing the coefficients for the Industry Drivers first, it is clear from Model 1 that there is no direct effect on Performance (as expected, since performance measures were relative to competition and thus controlled for industry differences). On the other hand, Industry Drivers, as hypothesized, affects the level of Global Strategy consistently across the different models and, as later models suggest, also influence the Management Processes employed by the firms.

As for Organizational Structure, the results are less clear. The linkages to Global Strategy, Management Processes and Performance are positive and mostly significant, but it is not very clear how the causal sequence is best viewed (compare Models 6 and 8, for example). The choice between the 'structure follows strategy' model vs. its opposite requires attention also to the goodness-of-fit of the different alternatives (see below).

Management Processes are clearly strongly related to the level of Global Strategy. There are also signs of a positive relationship to Performance (see Models 7 and 8, for example), but this linkage is less robust and contingent on the particular specification chosen.

Global Strategy is consistently associated with a higher performance level. The relationship is possibly mediated by Organizational Structure and Management Processes (see Models 7 and 8), but is clearly an empirical fact for these companies.

Nationality is introduced as an additional construct in the last four models, and its effect on Performance is consistently negative. Given the scoring, it is the Japanese companies that perform worse when the other global factors have been accounted for. But this significant linkage is perhaps best seen as an adjustment for scale levels. The Japanese firms in the sample, although top performers in many cases, have lower global market shares than their American counterparts, which have a much longer history of multinational operations. Coupled with the stronger American drive for profitability (a 'causal' factor) it is not surprising that the Performance scores for the Americans lie at a higher level. Introducing the Nationality construct allows us to correct for this difference, and avoids biasing the estimation of the strategy linkages.

The significant path coefficients from Nationality to Global Strategy and Management Processes suggest that the Japanese are more global and have stronger integration mechanisms than the Americans. These are expected results, and confirm our initial propositions. Furthermore, since both of these constructs have positive linkages to Performance, the Japanese get a positive performance boost from their globally integrated strategies.

The statistical findings are also very much

supported by the comments made by the executives interviewed. A high proportion of the American businesses (78%) had an international division separate from the domestic division. But the American businesses respondents mostly saw this separate division as a hindrance to global strategy, and there was some trend toward disbanding international divisions. One business had recently shifted to three regions for the whole world. An executive in this business viewed the change of getting rid of the U.S. division, and breaking down regional barriers, as one of their greatest successes. The benefits included better allocation of resources and the recognition that business lost in one country need not necessarily be replaced in the same country, but could be recouped elsewhere. The international division structure also seemed to be losing its power. The head of another American business commented that the role of the country manager had changed a great deal—the country manager used to run the business in the country, but was now the titular head who represented the parent company in the country. In contrast, although all of the Japanese businesses had a separate international division, the Japanese respondents showed little concern about the role of these divisions.

It was also notable that American comments on managerial processes focused on difficulties in achieving global integration, while the Japanese comments complained about too much central coordination. For example, the head of international marketing and sales for an American industrial controls business viewed the lack of global performance review as a major problem. But that was somewhat offset now by basing on worldwide achievement a portion of incentive compensation for global team members. The head of business planning for an American company commented that the difficulty of getting product managers to think globally was exacerbated by the lack of global reward systems. So, it was all too common to not take the global job requirements as seriously as the domestic ones. Indeed, this executive believed that the product managers would like to be measured on a global basis, and were willing to take their chances on that. In the same business, the director of international strategic planning also viewed the lack of global compensation as a major weak spot. Of course,

the Japanese businesses could not even try to use global compensation systems, as their compensation systems do not link to performance but to seniority. One Japanese respondent commented that his company's first attempt to open an office in the United States was not successful. But the staff were not fired, and were instead criticized and 'put by the window.' On the other hand some executives saw barriers to global processes. The executives in one American business were worried that if they created a global budget for strategic contingencies, the money would get appropriated by corporate 'the next day'.

Estimation on split sample

One question we had was whether our findings might differ by the level of globalization in each industry. Accordingly, we reestimated the final models, 6, 7 and 8 on two halves of the sample, representing higher and lower industry globalization. One possibility was to use Kobrin's (1991) classification (industries in which intrafirm trade accounts for less than 25 percent of international sales), but we preferred to use our own measures collected in the study, instead, in order to enhance the internal validity of our analysis. Accordingly, we split the sample using an index of industry globalization potential created by summing the scores on each of the four overall measures of globalization drivers (market, cost, government and competitive). The possible range for this index was 0–20, with an actual range of 9–18. As it happened, about half of both the American and Japanese samples fall below an index of 15. So we created a 'moderate globalization' sample for businesses scoring below 15, and a 'high globalization' sample for those scoring above. The lower subsample contained 8 American and 10 Japanese businesses, and the more global sample, 10 American businesses and 8 Japanese. The model reestimations on the split samples provided three notable results. First, the path from Industry Drivers to Global Strategy is consistently weaker, across Models 6, 7 and 8, in the *high* globalization than in the *moderate* globalization sample. Our interpretation is that this occurred because there is less variance in both the level of globalization drivers and the use of global

strategy in the high sample. Second, in Model 6, in which Global Strategy has a direct path to Performance, there is no difference between the high and moderate samples, implying that a global strategy is superior irrespective of industry characteristics. Third, in Model 8, Nationality has a stronger path to Global Strategy in the high sample than in the moderate, implying that the Japanese respond more to high globalization drivers than to moderate, i.e., they respond appropriately. The same effect also holds in Model 6, where there is a direct path from Nationality to Management Processes (and little difference in Model 8).

We can conclude that our findings are reasonably robust even when splitting the sample into high and moderate globalization industries. Second, there are indications that the positive link between global strategy and performance holds irrespective of industry characteristics. Third, this additional analysis further supports the view of more appropriate Japanese response to globalization potential.

Checking the effect of parent size

Given that the American parent companies were larger than the Japanese (mean of \$19.5 billion vs. \$11.5 billion), some of the nationality effects may be confounded by this difference in size. To check for this possible effect, we added parent company revenues (Parent Size) as an additional construct in Models 6, 7 and 8, using it both instead of Nationality, and with it (as a separate construct). The results are reassuring for the role of nationality. First, the addition of Parent Size had little effect on the paths from Nationality, when the latter were kept. Second, Parent Size had no significant paths to Performance. Third, in a couple of the models, Parent Size has a significant, negative path to Global Strategy slightly weaker than the positive path from Nationality to Global Strategy. Recall that the American parents are larger, while the Japanese businesses made more use of global strategy. So these two results are equivalent if Parent Size is acting as a proxy for Nationality in the effect on global strategy. Fourth, there are a couple of significant paths of conflicting signs from Parent Size to Management Processes in a

couple of significant paths of conflicting signs from Parent Size to Management Processes in a couple of the models. Lastly, the R^2 levels were consistently lower when using Parent Size instead of Nationality. In conclusion, Parent Size does not affect the role of Nationality and is generally an inferior construct.

Model choice

With the measurement linkages (the ‘outer’ model) so similar across the alternative specifications, the model choice can focus on goodness-of-fit measures of the ‘inner’ model (i.e., the relations between the latent constructs). The algorithm provides two fit measures. One is the Bentler–Bonett statistic (Bentler and Bonett, 1980), a normed (0–1) measure of the model’s explained variance relative to a null model of complete independence. The second measure is the percent explanation of covariation among the latent constructs.

Since the number of indicators—the ‘variables’ in standard regression terminology—stays constant across Models 1 to 5, these goodness-of-fit indices can be readily interpreted. The simplistic Models 1 to 3 can be quickly dismissed in favor of the more informative Models 4 and 5. The simplest, one-level, model, Model 1—Direct Effects on Performance, explains very little of the inner model, only 17 percent. Furthermore, only one of the paths from the exogenous constructs to Performance is significant. Next, the two-level models, Model 2—Only Global Strategy Affects Performance and Model 3—All Factors Affect Performance, provide a large improvement in the explained variance of the inner model, with values of 40 percent and 42 percent respectively. But few of the path coefficients are significant. When, however, we estimated the three-level models (Models 4 and 5) the explained variance of the inner model jumps from the 40 percent to the 70 percent range, and the Bentler–Bonett statistic makes a marginal improvement in some cases. Also notable is that all of the path coefficients become significant. Between Models 4 and 5, the ‘structure follows strategy’ specification in 5 seems slightly preferable with an increase in the Bentler–Bonett from 0.39 to 0.45 and a balanced shift in explained variation between the inner and the outer models.

The estimated Model 4—Strategy Follows Structure worked best as an amalgam of Specifications 3 and 4. It differs from the conceptual models in a few ways:

- * Industry Globalization Drivers has little effect on Organization Structure, so we dropped this path;
- * Organization Structure has a direct effect on Management Processes as well as on Global Strategy and on Performance
- * Management Processes has little effect on Performance, so we dropped this path.

The estimated Model 5—Structure Follows Strategy has all its paths significant. Compared with Model 4, it achieves very similar levels of overall explained variance for the inner and outer models, and a slightly higher Bentler–Bonett statistic (0.45 vs. 0.39). With an additional endogenous construct (Organization Structure), the R^2 values for the endogenous constructs are somewhat lower than in Model 4. On the basis of these comparisons we cannot conclude that one model (4 or 5) is better than the other, although both these three-level models are significantly better than the one- and two-level models. So in our next stage of analysis we worked with both Models 4 and 5 to find the best placement for the effect of the Nationality construct.

The introduction of Nationality in the ‘Strategy follows Structure’ specification of Model 4, yielding Model 6, seems hardly worth it. Even though the paths to Performance and Management Processes are significant, the Bentler–Bonett drops fractionally (somewhat expected since the new construct adds a variable to account for), but the inner model explanation rises only slightly. But these results seem due to a misspecification of linkages. In the Chandlerian ‘Structure follows Strategy’ models 7 and 8, the Bentler–Bonett statistic is back up to 0.46, and when Nationality is linked directly to Global Strategy, the inner model explanation rises to 74 percent (Model 8). While a Bentler–Bonett value of 0.46 is relatively low in absolute terms, an explained covariation of 74 percent is quite respectable (Bentler, 1989: 93). Thus, even though this model does not explain the total variability in the constructs particularly well, the covariation (‘communality’ in factor analysis

language) among the latent constructs is reproduced reasonably well. With Model 8 in addition showing everywhere significant coefficients, it becomes a strong candidate.

It is also necessary, however, to examine the R^2 values of the various endogenous constructs. As can be seen by comparing Models 6 and 8, the 'strategy follows structure' specification in 6 scores better on the explanation of the Performance construct. It is clear that when Global Strategy is related to Performance only indirectly (via organizational structure and management processes), its impact is somewhat attenuated (see Model 8). The reason can be gleaned from the weights of indicators. In Model 6, where the strategy links directly to performance, Global Strategy contains a stronger element of Standardized Products. This aspect of the Global Strategy generates stronger Performance. On the other hand, in the Model 8 specification, Global Strategy essentially consists of the perceptual measure only, which, translated into organizational structure and managerial processes, exhibits less of a Performance impact. Choosing Model 8 over Model 6 entails giving up a dimension of global Strategy—Product Standardization—which apparently has real Performance implications.

Direct and indirect effects

The path coefficients can also be used to determine the total influence of each determining construct on each affected construct, by multiplying all paths and summing. We present this analysis for Models 6 and 8 in Table 2. For the total influence on the actual use of global strategy it is notable that industry globalization drivers have easily the largest total influence in both models, but also that organization structure and management processes together add up the same total influence as drivers when these paths are added, as in Model 6. Nationality can have a large effect on Global Strategy, but this effect diminishes when the path is indirect via Management Processes.

In terms of the total influence on performance, the actual use of global strategy has the largest single influence in both models. Organizational structure and management processes have larger total effects on performance when they have direct paths (Model 8) rather than indirect (Model 6). Chandler's 'structure follows strategy'

model clearly places a premium on well aligned organizational structures and processes. Industry drivers have a moderate total influence on performance in both models.

DISCUSSION

The data we collected provide strong support for our conception of the four globalization constructs: industry globalization drivers, globally integrated strategy, global organization, and global management processes. In particular, the quantitative data show a wide variation in the levels of each of these constructs, i.e., the phenomena exist. Of the four categories of industry globalization drivers, market and cost drivers showed a consistently strong association with the level of global strategy used. The data also illustrate the richness of industry globalization potential, with different types of drivers applying in different industries. Among the five major elements of globally integrated strategy, standardized products seem particularly representative of global strategy. At the same time, several dimensions are needed to fully represent the nature of global strategy. Global organization and global management processes are also found to vary greatly among the companies, and to have important effects on the ability of firms to implement global strategy. Lastly, the qualitative comments illustrate the importance of all these constructs to senior managers in these multinational companies.

The finding that the three-level models (Specifications 4 and 5 in Figure 1) provide the highest level of explained variance is important. It means that, at least in this sample, the various constructs do relate in the complex fashion indicated by the literature. Managers do need to concern themselves with how industry globalization drivers affect their choice of strategies, organization structure and management processes.

The findings also support a role for nationality. Even though as expected the perceptions of industry drivers varied between Japanese and American firms, we found the expected pattern in the responses to these drivers. We also found that the Japanese were better attuned to the global strategy requirements, also as expected since their history of centralized direction facil-

Table 2. Total influences on global strategy and performance

Model 6: Strategy follows structure

	Total influence on global strategy	
Industry drivers	= $(0.53)(0.30) + 0.41$	= 0.57
Organization structure	= $(0.38)(0.30) + 0.21$	= 0.32
Management Processes	= $(0.18)(0.30)$	= 0.30
Nationality (Japan)	= $(0.18)(0.30)$	= 0.05
	Total influence on performance	
Industry drivers	= $(0.53)(0.30)(0.55) + (0.41)(0.55)$	= 0.31
Global strategy	= $(0.55)(0.55)$	= 0.55
Organization structure	= $(0.38)(0.30)(0.55) + (0.21)(0.55)$	= 0.18
Management processes	= $(0.30)(0.55)$	= 0.17
Nationality (Japan)	= $(0.18)(0.30)(0.55) + (-0.31)$	= -0.28

Model 8: Structure follows strategy

	Total influence on global strategy	
Industry drivers	= 0.69	
Nationality (Japan)	= 0.32	
	Total influence on performance	
Industry drivers	= $(0.69)(0.70)(0.25) + (0.69)(0.49)(0.29)$	= 0.22
Global strategy	= $(0.70)(0.25) + (0.49)(0.29)$	= 0.32
Organization structure	= $(0.29)(0.25)$	= 0.29
Management processes	= $(0.25)(0.25)$	= 0.25
Nationality (Japan)	= $(0.32)(0.70)(0.25) + (0.32)(0.49)(0.29) + (-0.20)$	= -0.10

tates global integration. The study showed that it is in the development of smoother management processes that the Japanese arrive at a more effective global organization.

Trying to resolve the model choice question—including whether strategy follows or precedes structure, and what the exact influence of Nationality is—entailed running several alternative specifications. The versions presented here were the most promising ones—for example, the many additional options for Nationality linkages were all insignificant—but, as we have seen, a final choice is still difficult. The fact is, of course, that global strategy theory is not strong enough yet to avoid exploratory approaches in this type of empirical study. The models evaluated do not represent ‘causal’ structures but convenient ways of structuring the data analysis. Further conceptual development has to emerge, alternative testing instruments and scales have to be developed, and more rigorous data collection techniques are necessary to claim scientific validity for these results.

On the other hand, as an exploratory study, the results can stand some closer scrutiny. Face validity of both measurement and path linkages is reasonably high, given past research. Industry

drivers, especially homogeneous markets and cost economies, seem to generate a force that makes firms opt for more global strategies. Where organizational structures and management processes are properly aligned to this strategy, whichever comes first, there is a pay-off in better performance. And the oft-quoted tendency of the Japanese to sacrifice profits for share again leads to better performance for the Americans.

Our new findings are thus given some credence. In the big picture, the Japanese have more of a global strategy than the direct influence of industry drivers would suggest. This is not only because the central coordination from Tokyo makes integration across the globe easier than for the multinational Americans, although the positive linkage between organizational structure and global strategy shows that this is an important factor. Rather, the linkage of nationality to management processes suggests that the Japanese have instituted more management mechanisms (global group meetings and global budgeting) that facilitate the implementation of global strategies.

As the consistently significant and positive linkage between global strategy and performance shows, firms with more global strategies do better.

For the companies in the sample, globalizing their strategies further would make sense. The Japanese managers who complained about too much central coordination apparently still outperformed their American counterparts. Thus, even though the Americans exhibit good performance due to their long presence in foreign markets and their focus on profitability, with more globalization they could have done even better. If the Japanese have established management processes that are more in tune with global strategies than those of the Americans, they have also gained a performance advantage.

In terms of further theory development, it is tantalizing to note that a global strategy by itself seems to lead to improved performance. This would seem to go counter to the contingency and 'fit' theories that the strategy has to fit the circumstances. It may of course be a purely empirical accident, with these 36 businesses happening to follow a peculiar pattern. One would still like to have some plausible theoretical explanation—could it be that the adoption of a global strategy serves as a stimulus to sharper managerial performance? a form of 'strategic intent' perhaps?

Another theory issue is the not-here-resolved question of structure following strategy or the other way around. The most fruitful path here would seem to be to recognize that the implicit time sequence involved—first strategy, then structure—is fundamentally dynamic. In a cross-section one would expect to find different businesses at different stages of adaptation to the desired (perhaps global) strategy, just as we found here. But to settle the 'which comes first' question one naturally has to await time series data. In the meantime, it is clear that a 'resource-based' perspective would suggest that an organizational structure helps define, delimit, but also enlarge organizational capability—just as the centralized Tokyo operations of many Japanese companies has enabled them to integrate faster globally. This does go counter to the Chandlerian notion of first formulating the appropriate (global) strategy and then develop the organizational capabilities to enable implementation.

The results encourage further research in several directions. One direction would be toward larger sample studies, probably with a smaller number of questions and using mail question-

naires rather than personal interviews. That would allow for more complex types of analysis and more confidence in the findings, thus avoiding some of the already-discussed limitations of this study's methodology. A second direction would be to add European multinational companies. Given their lengthy history of being multinational, European companies are likely to have a different pattern of globalization from both American and Japanese MNCs.

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APPENDIX: MEASURES OF GLOBALIZATION USED IN PAPER

All items are on a 5-point scale unless otherwise indicated

INDUSTRY GLOBALIZATION DRIVERS

Overall Market Drivers. Overall strength of market factors favoring globalization in this product category today.

Overall Cost Drivers. Overall strength of cost factors favoring globalization in this product category today.

Overall Government Drivers. Overall strength of government factors favoring globalization in this product category today.

Overall Competitive Drivers. Overall strength of competitive factors favoring globalization in this product category today.

ORGANIZATION STRUCTURE

One Global Head. Yes/no measure on whether there is one person whose primary job it is to be head of the worldwide business.

International Division. Yes/no measure on whether there is an international division that does not contain the domestic business.

Business Dimension of Matrix. Strength of business dimension of organization matrix.

Geographic Dimension of Matrix. Strength of geographic dimension of organization matrix.

Functional Dimension of Matrix. Strength of functional dimension of organization matrix.

MANAGEMENT PROCESSES

Cross-Country Coordination. Extent to which the business has processes for coordinating strategy across countries.

Global Budgeting. Extent to which the business has global budgets that are used for global programs, as opposed to national budgets for national programs.

Global Group Meetings. Extent and frequency of meetings involving senior managers from around the world.

Global Performance Review. Extent to which senior managers are evaluated and compensated on the basis of global and not just regional or national performance.

Global Strategy Information System. Extent to which the business collects strategic information, such as market share and competitor data, from around the world in a consistent format on a regular basis.

GLOBAL STRATEGY

Global Share Balance. Extent to which the business's revenues are well spread compared with that of the worldwide market.

Standardized Products. Extent to which the business's products are globally standardized, i.e., as indicated by percent of cost of product or service that is in components that are standarized.

Activity Concentration. Location of each activity in relation to geographic markets where products are sold, ranging from mostly local to mostly central. Average of measures for Research,

Development, Purchasing, Raw Material Processing, Subassembly, Final Assembly, Marketing, Selling, Distribution and Service.

Marketing Uniformity. Extent to which the business takes a different approach in each country or a uniform approach for each marketing element. Average of measures for Uniform Brands, Uniform Packaging, Uniform Absolute Pricing, Uniform Relative Pricing, Uniform Advertising, Uniform Promotion, Uniform Selling Approach, Uniform Distribution Approach.

Integrated Competitive Moves. Extent to which the business coordinates competitive moves across countries.

Actual Overall Global Strategy. How global the overall strategy is today.

Optimal Overall Global Strategy. How global the overall strategy should be today.

Overall Global Strategy Gap. Researcher-calculated difference between actual and optimal; overall global strategy.

PERFORMANCE

Market Share. Extent to which the business was one of the largest competitors, medium sized competitors or smaller competitors.

Relative Profitability. Average profitability (return-on-investment) of the business over the previous 3 years compared with the worldwide category/major competitors.