

Integrating Decentralized Strategy Making and Strategic Planning Processes in Dynamic Environments

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ABSTRACT Decentralized post-bureaucratic organizations are deemed to display superior performance in dynamic environments, but recent evidence indicates that centralized integrative cross-functional processes may be equally critical. Accordingly, this paper hypothesizes that organizational performance can be ascribed to the simultaneous emphasis on decentralized strategy making and strategic planning processes. This is investigated in a study of 185 manufacturing organizations operating in diverse industries spanning food processing and computer products. The study shows that both decentralized decision structure and planning activities are associated with higher performance in dynamic environments. These findings confirm that effective organizations engage in more complex strategy formation processes that complement the decentralized post-bureaucratic form with formal mechanisms of rational analyses and operational integration. The paper highlights a need to extend our understanding of the duality between decentralization and planning.

INTRODUCTION

Researchers have described the emergence of decentralized, non-hierarchical, autonomous, networked, post-bureaucratic organizations (e.g. Castells, 1996; Drucker, 1988; Galbraith, 1994; Heydebrand, 1989), and their effectiveness in dynamic industrial environments (e.g. Bettis and Hitt, 1995; Fulk and DeSanctis, 1995). However, recent research indicates that the autonomy label may be too simplifying, and that effective organizations also engage in more complex integrative processes (Hill et al., 2000). In their empirical study of 78 European companies, Hill et al. found that research and development organizations are more structured

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than recognized in the post-bureaucratic view. They suggested their findings might reflect that the post-bureaucratic form portrays large vertically integrated US-based corporations rather than European holding companies. Hence, a decentralized structure could reflect business unit autonomy even though decision making within the units remained centralized, or alternatively decentralization could pertain to operational rather than strategic decision making. This paper enlightens some of these speculations based on a recent study of strategic decision making processes in 185 North American organizations comprised of single-business firms and corporate divisions.

The study investigates whether decentralized strategic decision making and strategic planning processes are associated with organizational performance across industrial environments characterized by different levels of dynamism. In this research, we contend that decentralized decision making and planning can be complementary and propose that effective strategy formation relies on the integration of decentralized strategy making and strategic planning processes. This approach extends previous efforts to classify strategy formation processes as archetypes of mixed modes (Hart, 1992) and empirical testing of mixed mode effectiveness (Hart and Banbury, 1994), and it responds to Hendry's (2000) call to consider different conceptualizations of strategic decision making as parallel features of the strategy formation process. In the following we outline the conundrum between emergent strategy making and formal strategic planning that has permeated parts of the strategy literature, and use it to frame the underlying theoretical arguments and hypotheses of the study. We then present the methodology and results of the empirical study, and discuss implications for strategy formation in the post-bureaucratic organization.

STRATEGIC MANAGEMENT

Mintzberg (1973) identified planning and adaptive strategy making as different approaches to strategy formation. Larger established firms in relatively stable and predictable industries were more inclined to plan strategic actions while adaptive strategy making applied more to firms operating in dynamic industries where strategic initiatives emerged in response to changing conditions. The strategy making modes were described as distinct approaches but it was argued that a more complete understanding of the complex strategy formation process should embrace both the intended, i.e. planned, and emergent strategy perspectives (Mintzberg, 1978; Mintzberg and Waters, 1985). Various studies have considered the significance of strategic emergence based on case studies and anecdotal evidence (Bower, 1982; Burgelman, 1983, 1988; Burgelman and Grove, 1996; Mintzberg, 1994; Noda and Bower, 1996). These studies depict decentralized initiatives from the organization's managerial grassroots as the prime source of emergent strategy, although emergence also can arise from responsive actions directed

by the CEO, for example, as captured in Quinn's (1980) conceptualization of 'logical incrementalism'. The decentralized emergent strategy processes are considered effective in dynamic environments, yet there has been limited empirical research devoted to investigate the associated performance effects across different industrial environments. Several studies have used specific industry settings to assess the influence of particular characteristics of the strategic decision making process, such as comprehensiveness (Fredrickson, 1984), politics (Bourgeois and Eisenhardt, 1988), speed (Eisenhardt, 1989), innovation (Jelinek and Schoonhoven, 1990), etc. These characteristics may represent different aspects of emergent strategy but do not explicitly consider the performance effects of decentralized strategy making. Other studies have investigated strategic emergence as the influence of middle managers by way of selling important ideas to senior executives (e.g. Dutton, 1995; Dutton and Ashford, 1993) and their involvement in the strategy process (e.g. Floyd and Wooldridge, 1992, 1996, 1997). These studies provide useful insights on emergent strategy processes but do not explicitly investigate the performance effects in a broader environmental context.

The strategic management paradigm was introduced as a rational analytical approach to provide strategic direction to organizational actions in an increasingly dynamic business environment (Schendel and Hofer, 1979). This approach, often considered synonymous with strategic planning, has become a dominant framework in the vast strategic management literature (e.g. Camillus, 1986; Goold and Quinn, 1993; Lorange et al., 1986; Porter, 1980; Richards, 1986). The performance effect of strategic planning processes has been subjected to numerous empirical studies over time, often resulting in somewhat ambiguous findings (e.g. Greenley, 1986; Kukalis, 1991; Pearce et al., 1987; Rhyne, 1986; Sapp and Seiler, 1981; Whitehead and Gup, 1985). Another related research stream has investigated how environmental contingencies influenced the effectiveness of different strategic decision making approaches. This seemed to indicate that comprehensive rational decision making, arguably a proxy for planning, was associated with high performance in stable industries and low performance in dynamic industries (Fredrickson, 1984; Fredrickson and Mitchell, 1984; Fredrickson and Iacquinto, 1989; Powell, 1992). However, recent studies have consistently indicated that strategic planning is effective and particularly so in dynamic environments (Brews and Hunt, 1999; Hopkins and Hopkins, 1997; Miller and Cardinal, 1994).

Contemporary strategy texts generally embrace the dual themes of planning and emergence. They typically tout a formal strategic planning model and recognize that important strategic initiatives can emerge from within the organization (e.g. Hill and Jones, 1995; Thompson and Strickland, 1993). Whereas different aspects of integrative strategy formation generally are recognized, there is a clear need to enrich our understanding of the complex integrative strategy process and the dynamic interaction between emergence and planning. Existing conceptualizations of strategic decision making often provide partial perspectives of the strat-

egy formation process (Hendry, 2000; Johnson et al., 2003; Watson, 2003; Samra-Fredericks, 2003; Jarzabkowski, 2003). This has occasionally exposed the strategy field to debates about the viability of strategic planning versus decentralized emergent strategy (Ansoff, 1991; Goll and Rasheed, 1997; Mintzberg, 1990, 1994). Conceiving planning and decentralized emergence as complementary strategy making modes reconciles this debate. This is in the spirit of previous efforts to classify strategy formation approaches based on different combinations of the organizations' strategy making capabilities (e.g. Bourgeois and Brodwin, 1984; Hart, 1992; Mintzberg and Waters, 1985; Nonaka, 1988).

THEORETICAL BACKGROUND

The view on decentralized strategy making has been enriched by bounded rational and political perspectives. When managers within the organization influence the strategic direction, differences in experience, motivation, and self-interest expose decision outcomes to the diverse preferences of the decision makers and 'satisficing' can become more prevalent than rational analyses and optimization (Cyert and March, 1992; Starbuck, 1983). Hence, strategy may emerge through a political process where strategic issues are formed around coalitions among managers in the organization that develop shared cognitions (Narayanan and Fahey, 1982; Pennings, 1985). Strategic emergence derived from decentralized decision making processes has also been conceptualized as ongoing social learning where strategy eventually is shaped by actions initiated and inspired by decentralized decision makers (Burgelman, 1988; Normann, 1985). The judgment of middle managers is essential as new initiatives are promoted within the organization (Jelinek and Schoonhoven, 1990), and their resource committing decisions determine the capabilities that eventually shape the strategic options available to the organization (Bower, 1982; Noda and Bower, 1996).

We conceive of *decentralized strategy making* as a decision structure that allows important strategic influences to emerge from managers at lower hierarchical levels in the organization. The strategic influence can arise in at least two ways described in the literature. First, strategic issues can gain formal recognition as managers continue to promote their ideas to top management until they become part of the organization's formal strategy (Dutton, 1995; Dutton and Ashford, 1993; Dutton et al., 1997). Hence, managers can influence strategy as they push their opinions, views, perspectives, and ideas through the organization's strategic decision processes (Denison, 1984, 1990). A decentralized decision structure can provide a setting for participation in strategic decision making that advances this kind of bottom-up influence. On this basis, we define *participation in decisions* as the extent to which middle managers participate in the organization's strategic decision making processes and thereby influence the organization's strategic outcomes. Second, decision power can be dispersed throughout the organization so lower

level managers have a certain degree of authority that allows them to take new initiatives in response to changing environmental conditions (Daft, 1992; Mintzberg, 1983). Hence, managers may be able to take actions on their own that later can become essential elements of the organization's official strategy (Burgelman, 1983, 1988). The authority to take decentralized actions can relate to formal budget allocation limits (Bower, 1982) or may arise from more informal organizational settings where managers can take actions without the intention and awareness of top management (Mintzberg, 1994). Hence, authority reflects the middle managers' *de facto* ability to take new responsive initiatives without asking for permission higher up in the organizational hierarchy. On this basis, we define *distributed decision authority* as the extent to which middle managers are able to take new initiatives without permission from members of the organization's top management team. In the following, we consider 'participation in decisions' and 'distributed decision authority' as two distinct dimensions of the decentralized strategy making process.

The planning perspective is rooted in the tradition of rationality. Strategic planning constitutes a systematic approach to management where strategy is formulated on the basis of comprehensive analyses of the organization's competitive environment (Anthony, 1965; Hofer and Schendel, 1978; Porter, 1980). Strategic planning processes integrate overall mission, goals, policies, and action plans across all levels of the organization from enterprise and business levels to different functional units (Andrews, 1980; Ansoff, 1965, 1988; Hofer and Schendel, 1978). The strategic management paradigm incorporates a series of logical steps in the planning process; for example, mission statement, long-term goals, environmental analyses, strategy formulation, implementation, and control (Schendel and Hofer, 1979). On this basis, we define *strategic planning processes* as organizational activities that systematically discuss mission and goals, explore the competitive environment, analyse strategic alternatives, and coordinate actions of implementation across the entire organization. Strategic planning has a centralized focus in the sense that the rational analytical approach considers strategy issues from an overall organizational perspective, and therefore most likely is initiated and monitored by the CEO and the top management team. However, it does not imply that the CEO and other top executives make all the strategic decisions. This aspect is reflected in the organization's strategic decision structure, that is, an organization can emphasize strategic planning and at the same time nurture a decentralized decision structure. Consequently, strategic planning processes and decentralized strategy making, characterized by participation in decisions and distributed decision authority, can be conceived as distinct strategy making modes.

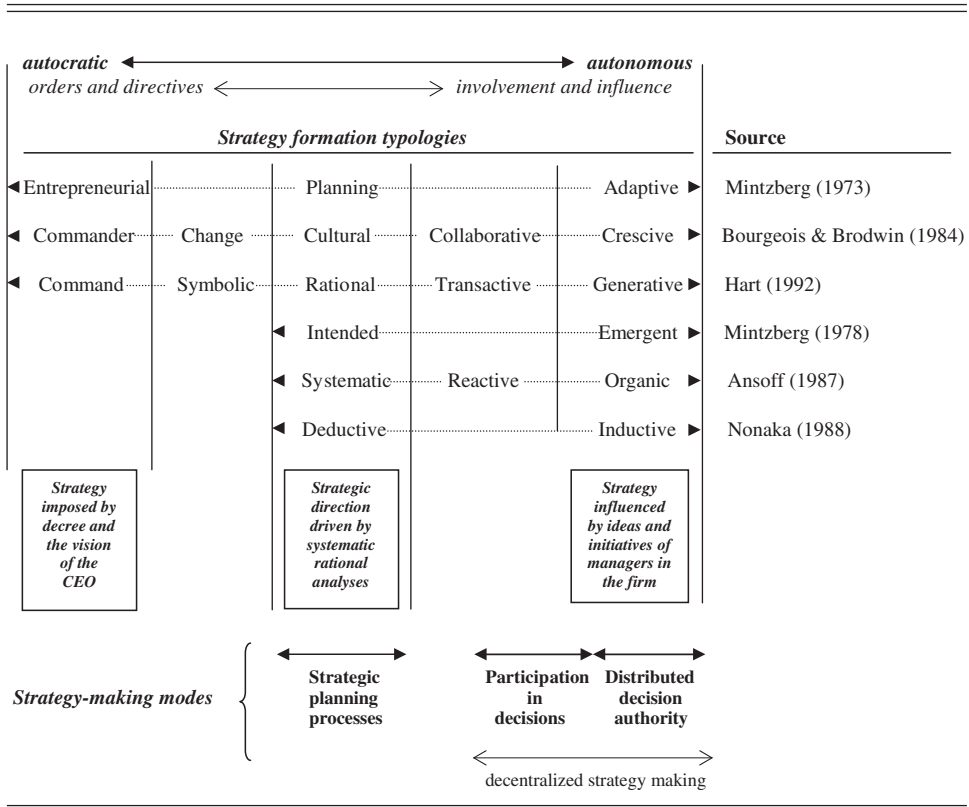
Strategic planning represents the organization's analytical thinking activities intended to consider various competitive and organizational insights and rationally determine how the overall organization should be positioned strategically (Porter, 1996). The outcome of the strategic planning processes could be reflected in

corporate policies as the means to guide subsequent organizational actions (Christensen et al., 1982). That is, the planning activities do not necessarily result in specific resource committing decisions (Hendry, 2000), although they could, but may rather serve to develop a 'road map' or 'blue print' stipulating the ideal direction of the organization. Even though the strategic planning processes supposedly lead the way they also imply that the strategic direction must be enacted and implemented by the organization's decision makers after the analytical thinking process has been completed. Hence, it is entirely possible that organizations can combine strategic planning with decision structures reflecting different levels of participation in decisions and distributed decision authority. The relative emphases on strategic planning processes, participation in decisions, and distributed decision authority characterize the organization's overall strategy formation process. For the purpose of this analysis we focus on *integrative strategy formation* conceived as the simultaneous emphasis on the decentralized strategy making modes and strategic planning processes. Decentralized strategy making represents autonomous, experimenting, and responsive elements in the strategy formation process, whereas strategic planning facilitates structured discussions and analyses of alternative strategic directions and coordinates cross-functional activities as actions are carried out.

Many efforts have been devoted to characterize different strategy archetypes that typify common strategy formation processes. For example, Mintzberg (1973) distinguished between the entrepreneurial, planning, and adaptive strategy archetypes. Bourgeois and Brodwin (1984) introduced five archetypes characterized as commander, change, cultural, collaborative, and crecive strategy processes. Hart (1992) went further by using the diverse process themes of rationality, vision, and involvement to define five integrative strategy typologies of command, symbolic, rational, transactive, and generative. He ranged the typologies from a command mode with strong centralized controls to a generative mode displaying relatively autonomous and uncoordinated actions among organizational members, and hypothesized that firms with a better balance between centralized control and decentralized actions perform better (Hart, 1992). In the context of the current study, organizations with little emphasis on strategic planning and a high degree of decentralized strategy making resemble Hart's (1992) generative mode, whereas organizations with high emphasis on strategic planning and little decentralized strategy making resemble the rational model (Table I).

The strategy typologies have often captured centralization as a dominant process characteristic, i.e., the typologies typically span from highly autocratic to increasingly autonomous archetypes. Mintzberg (1973) discussed entrepreneurial strategy making as a rather autocratic approach driven by the vision of a strong founder, whereas adaptive strategy making reflected an emergent process influenced by different inputs from the organization. Bourgeois and Brodwin (1984) captured a range of typologies spanning from the autocratic commander to the

Table I. Representative strategy formation frameworks



more autonomous crescive archetype. Other strategy frameworks did not incorporate purely autocratic strategy making modes; for example, Ansoff (1987) contrasted systematic planning with generic strategy processes. Nonaka (1988) considered the interaction between deductive top-down and inductive bottom-up driven strategy making modes, which in many ways resembles Mintzberg’s (1978) distinction between intended and emergent strategy.

Whereas the strategy archetypes can be seen as alternative approaches, Hart and Banbury (1994) tested the mixed mode hypothesis by studying the performance relationship of adherence to none, one, two, three, four, or all five of the strategy making modes described in Hart’s (1992) paper. A resource-based view argued that the ability to integrate different strategy-making capabilities generally should outperform, and that environmental turbulence would moderate the performance relationship in a positive direction. Their study found significant positive associations between the integration of strategy making modes and outcome variables measuring product development, employee satisfaction, and social responsiveness but not economic performance (Hart and Banbury, 1994). Their analyses also found partial support for the moderating effect of turbulence, but

the results were not conclusive. Hart and Banbury (1994) used adherence to the strategy making modes to classify the firms. The current study measures the organizations' emphasis on the three strategy making modes of strategic planning processes, participation in decisions, and distributed decision authority, and analyses their performance relationships in different environmental settings.

HYPOTHESES

Decentralized strategy making is characterized by the level of influence managers within the organization can exert on strategic outcomes through participation in strategic decisions and their ability to take initiatives that have potential strategic impact. The first dimension reflects middle managers' participation in decisions and the second dimension reflects distributed decision authority to lower level managers. Participatory decision processes cause more market views and organizational perspectives to be considered in strategic decisions, which should lead to better decision outcomes (Amason, 1995; Denison, 1984, 1990). Furthermore, if managers that are closer to the market place are able to take new initiatives on their own the organization can arguably react faster to changing market conditions and possibly make higher quality decisions because they are made closer to the relevant information (Huber, 1990). Organization theory suggests that organic structures provide a higher degree of adaptability although the informal communication required to coordinate mutual adjustments is relatively costly (Perrow, 1966; Thompson, 1966). Therefore, distributed decision authority should be effective in dynamic environments that impose high uncertainty on organizational activities, and where the benefits of a generic structure outweigh the associated costs. Since all industrial environments appear to be increasingly dynamic (Thomas, 1996), the performance effect of distributed decision authority should exist across all industries although it is expected to display the highest effects in the most dynamic industries. Lower level managers should be better positioned to provide new relevant insights and perspectives to strategic decisions and particularly so in dynamic environments. Hence, the effect of participation in decisions should also be more pronounced in dynamic environments. This leads to the following hypotheses.

Hypothesis 1.1a: There is a positive relationship between distributed decision authority and organizational performance.

Hypothesis 1.1b: There is a positive relationship between participation in decisions and organizational performance.

Hypothesis 1.2a: The positive relationship between distributed decision authority and organizational performance is higher in dynamic environments.

Hypothesis 1.2b: The positive relationship between participation in decisions and organizational performance is higher in dynamic environments.

Strategic planning processes can facilitate a better understanding of the organization's competitive situation and help identify new strategic focal areas (Ansoff, 1988, 1991; Lorange and Vancil, 1977; Miller and Cardinal, 1994). At the same time, strategic planning processes can enhance internal communication, integrate different capabilities, and coordinate organizational activities across functional areas (Ansoff, 1984; Grinyer et al., 1986; Lorange and Vancil, 1995). This suggests that strategic planning processes increase the effectiveness of organizational actions and the firm's ability to expand. Furthermore, it is argued that planning processes encourage adaptive strategic thinking and facilitate the generation of new actions that could be particularly useful in dynamic industries. Some counter arguments are that planning is more likely to achieve positive economic effects in relatively stable environments where future conditions are easier to project (Daft, 1992; Mintzberg, 1973, 1983). Furthermore, the planning processes might become so bureaucratic that they quell new responsive actions (Mintzberg, 1994). However, we stick to the positive arguments and make the following hypotheses.

Hypothesis 2.1: There is a positive relationship between strategic planning processes and organizational performance.

Hypothesis 2.2: The positive relationship between strategic planning processes and organizational performance is higher in dynamic environments.

Distributed decision authority allows lower level managers to take new initiatives in response to changing market conditions. However, effective execution of organizational actions requires integration of essential capabilities and coordination of various cross-functional activities, which are considered key contributions of strategic planning processes (e.g. Ansoff, 1984; Lorange and Vancil, 1995). This leads to the following hypothesis.

Hypothesis 3a: The positive relationship between distributed decision authority and organizational performance is higher in organizations with a high emphasis on strategic planning processes.

Participation in decisions incorporates the diverse perspectives of lower level managers in the considerations of strategic decisions and includes them in the decision making process. This is expected to improve the quality of decision outcomes but may also constitute a potentially cumbersome way to accommodate the different preferences of participants. Participatory decision making may make the organization more vulnerable to individual self-interests and sub-optimizing politi-

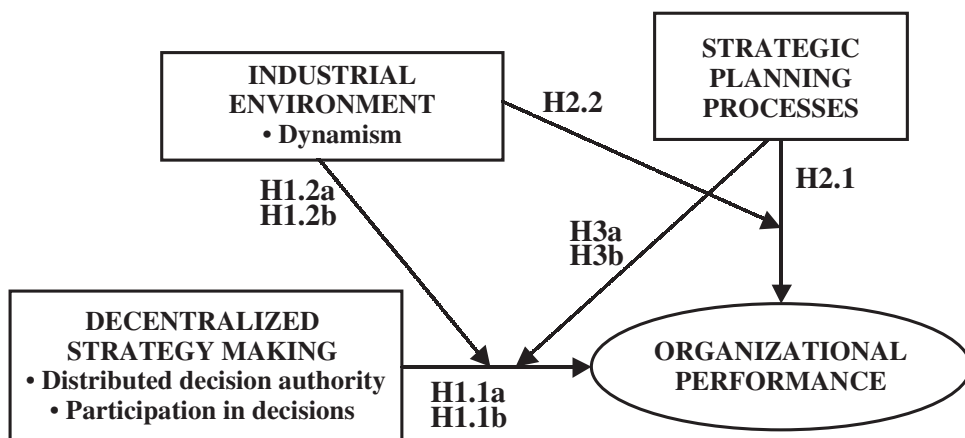


Figure 1. An integrative strategy formation model and environmental contingencies

cal processes (e.g. Cyert and March, 1992; Narayanan and Fahey, 1982). As a consequence, the expected outcome effects of participation may be hampered as reconciliation of alternative actions in the strategic planning processes imposes additional negotiation and information processing needs on the organization. An integrative strategy formation process incorporating planning and participatory decision making may, therefore, be more time-consuming and resource demanding and hence less effective. This leads to the following hypothesis.

Hypothesis 3b: The positive relationship between participation in decisions and organizational performance is lower in organizations with a high emphasis on strategic planning processes.

The integrative strategy formation model and related hypotheses are shown in Figure 1.

METHODOLOGY

To investigate the hypothesized relationships across different industrial environments, the study sampled North American manufacturing firms from the Compustat database. The level of environmental dynamism was assessed across different industries identified by their four-digit SIC codes. A dynamism index was calculated as the standard error of the regression coefficients of the ten-year time-series on net sales and operating income (Dess and Beard, 1984; Keats and Hitt, 1988). Firms in food and household industries (meat packing, flour and cereals, sugar products, beverages, men's and women's clothing, and household furniture) displayed lower levels of dynamism, while firms in computer products industries (electronic computers and storage devices, computer terminals and calculators,

measuring and analytical instruments) showed higher levels of dynamism. The sample was extracted from firms in these two industry groups to ensure variance in environmental conditions.

Annual reports were obtained from the firms listed within the identified industries. The reports were analysed to ensure that the sample consisted of single business firms and corporate divisions with a stable organizational form. Entities that had been exposed to major reorganizations over the past five years were excluded from the sample to ensure that strategy making modes had been in effect for some time and therefore realistically would be associated with organizational performance. This analysis identified 360 business entities consisting of single-business firms and single-business divisions. Questionnaires were mailed to the executive with responsibility for sales and marketing in each of these entities. This member of the entity's top management team was chosen as the prime respondent because executives generally are deemed to be reliable respondents. Furthermore, market positioning is considered a key aspect of strategy (Porter, 1996) and managers in market-oriented functions are found to be more engaged in the strategy formation process (Floyd and Wooldridge, 1992; Mintzberg, 1994). The managers comprised in this study reported to the executive and thus constitute lower level managers in the organization, i.e., one level below the top management team and two levels below the CEO. On average the responding executives had 6.5 managers reporting to them, ranging between 2 and 34. The initial mailings to the executives were supplemented by soliciting phone calls and a second mailing of the questionnaire.

Decentralized strategy making was reflected in two aspects of decentralized decision structure, participation in decisions and distributed decision authority, consistent with the dimensions identified in Aiken and Hage's centralization measure (Price, 1972). Items used to measure the two dimensions were adapted to consider strategic issues, including new market activities, product and service developments, change in practices and policies (Miller, 1987). Distributed decision authority reflected the extent to which managers one level below the executive were authorized to take initiatives on their own. Participation in decisions reflected the extent to which the managers were involved in the organization's strategic decision making processes. Strategic planning processes reflected the organization's emphasis on key elements of the strategic management paradigm based on items developed and tested by Boyd and Reuning-Elliott (1998). All items were assessed on five-point Likert scales and the construct measures were developed by adding the item responses. Table II provides descriptive statistics on the measures and lists the items used to measure the model constructs.

Organizational performance was captured by efficiency and market expansion reflecting the organization's overall economic performance. Economic performance was measured by self-assessed indicators of the organization's profitability and sales growth compared to its close competitors (Dess and Robinson, 1984).

Table II. Model constructs (n = 185)

	<i>Mean</i>	<i>S.D.</i>	<i>Alpha</i>	<i>Items</i>
<i>Decentralized strategy making</i>				
Distributed decision authority	13.36	2.04	0.70	Managers reporting to the top executive: – can start major market activities without approval – can market to new customer segments without approval – need no approval to initiate new product developments – can introduce new practices without approval – need no approval to develop new internal capabilities [1 = definitely false; 5 = definitely true]
Participation in decisions	19.40	3.36	0.85	The managers participate in decisions: – to change the firm's market position – about moves into new customer segments – about major product/service introductions – about development of important capabilities – to adapt new policies and practices [1 = never; 5 = always]
<i>Strategic planning processes</i>				
	17.55	4.78	0.84	What emphasis does your organization put on: – development of mission statement – on long-term plans – on annual goals – on short-term action plans – on evaluation of strategic objectives [1 = no emphasis; 5 = strong emphasis]

The industrial environment was characterized by the level of dynamism that circumscribes organizational activities. Dynamism was measured by self-assessed indicators of perceived industry developments over the past five years considering changes in technology, demand, and product profitability (Miller, 1987). Use of self-assessed indicators to measure dynamism circumvented potential problems of misrepresentation associated with measures based on statistical time-series that may capture the frequency and amplitude of seasonal patterns rather than true uncertainties (Wholey and Brittain, 1989). The self-assessed dynamism measure was validated by comparison across the two initially identified industry groups. Analysis-of-variance on the mean values of the self-assessed measures between the two groups confirmed that the level of dynamism across the groups was signifi-

Table III. Industries grouped according to the level of dynamism

<i>Industries</i>	<i>Dynamism index</i> ¹	<i>n</i>	<i>Dynamism</i> ²		
			<i>Mean</i>	<i>S.D.</i>	
<i>Lower dynamism</i>					
Food industry	1.2	}	97	10.6	2.4
Household furniture	1.2				
Textile and apparel	2.2				
<i>Higher dynamism</i>					
Measuring instruments	5.7	}	88	12.7	2.3
Computer products	7.6				
Industrial machinery	9.0				
ANOVA test (F-significance) ³				0.043	

Notes:

¹ Calculated from data on firms in the four-digit SIC industries included in Compustat reflecting the standard errors of regression coefficients on total sales and operating profits on ten-year time-series.

² Self-assessed measure derived from executive responses in the sampled organizational entities to the following three items: (1) To what extent have product and service technologies changed in your industry over the past 5 years? (2) To what extent has the level of demand for different products changed in your industry over the past 5 years? (3) To what extent has the profitability of different products changed in your industry over the past 5 years?

³ Level of significance in test of differences in mean average of the self-assessed dynamism measures in the two industry groups.

cantly different and consistent with the initial classification based on archival data (Table III).

The solicited executives returned 185 useable questionnaires corresponding to a response rate of 51.4 per cent, which compares favourably with similar executive-based studies (Hambrick et al., 1993). Of these, 123 responses (66.5 per cent) were obtained within one month from the mailing of the initial soliciting letter. All respondents were tested for non-response biases, discrepancies between early and late respondents, and between single business firms and corporate divisions. No significant differences were found in total assets, net sales, sales growth, return on assets, return on equity, or profit margin between the subgroups.

The self-assessed measures were validated by comparing the two subjective performance indicators, profitability and growth, with archival data on corporate performance from Compustat. The comparisons showed correlation coefficients of 0.38 and 0.30 respectively calculated across the full sample. Since the subjective measures related to single-business and divisional performance whereas the archival measures reflected corporate level performance, we should not expect perfect correlations. However, when the self-reported and archival measures were compared on the sub-sample of single-business firms, the correlations should increase. This was indeed the case as the two correlation coefficients calculated on 117

Table IV. Factor analysis of item scales (varimax rotated factor matrix)

(<i>n</i> = 185)	<i>Factor 1</i> <i>Distributed decision</i> <i>authority</i>	<i>Factor 2</i> <i>Participation in</i> <i>decisions</i>	<i>Factor 3</i> <i>Strategic planning</i> <i>processes</i>
Internal capabilities	0.748	–	–
Market activities	0.732	–	–
Internal practices	0.724	–	–
Product development	0.689	–	–
Customer segments	0.516	–	–
Product introductions	–	0.825	–
Customer segments	–	0.810	–
Internal capabilities	–	0.798	–
Market position	–	0.792	–
Policies and practices	–	0.783	–
Annual goals	–	–	0.878
Long-term plans	–	–	0.867
Evaluation of objectives	–	–	0.834
Short-term action plans	–	–	0.719
Mission statement	–	–	0.675

Note: The table includes all factor loadings above the 0.300 cut-off point.

responding single-business firms were 0.42 and 0.49 respectively. These results were comparable to the standards developed in similar studies (Dess and Robinson, 1984). The correlation coefficients between the self-reported and archival performance data increased further when measured within the industry sub-samples defined by the four-digit SIC codes. The lower correlations on cross-sectional industry samples can be ascribed to the confounding effects of systematic differences in profitability across industries (Rumelt, 1991).

The reliability of the executives as primary respondents was tested further by comparison to secondary respondents among the managers reporting directly to the executives. The managers were selected randomly among the first 123 responding entities. Secondary respondents were obtained from 15 per cent of the business entities, and on average 7.4 sales managers provided secondary responses in each of these entities. The average inter-rater reliability between respondents was found to be consistent at 0.70 calculated on the performance indicators as well as other items, which was deemed satisfactory (Nunnally and Bernstein, 1994). All item responses used to measure the model constructs were exposed to factor analysis, which confirmed the presence of three distinct constructs: distributed decision authority, participation in decisions, and strategic planning processes (Table IV). Chronbach's alphas calculated on the three measures were 0.70, 0.85, and 0.84 respectively.

Table V. Correlation analysis (n = 185)

	1	2	3	4
1. Dynamism				
2. Distributed decision authority	0.18*			
3. Participation in decisions	0.11	0.14 ⁺		
4. Strategic planning processes	0.25**	0.09	0.19**	
5. Economic performance	0.04	0.18*	0.23**	0.35**

⁺p < 0.10; *p < 0.05; **p < 0.01.

RESULTS

A correlation analysis of the construct measures indicated that distributed decision authority and strategic planning processes were associated with dynamic industrial environments while participation in decisions was not (Table V). Distributed decision authority and strategic planning processes were not correlated, so there was no indication of a systematic combination of these two strategy making modes across the sample. Distributed decision authority and participation in decisions were positively correlated at the 10 per cent confidence level. Participation in decisions and strategic planning processes were positively correlated at the 1 per cent confidence level. Distributed decision authority, participation in decisions, and strategic planning processes were all positively correlated with economic performance.

The hypotheses were tested in multiple regression analyses using economic performance as the dependent variable and distributed decision authority, participation in decisions, strategic planning processes, and various interaction terms as independent variables. All interaction terms were mean adjusted. Potentially confounding factors were considered as control variables, including organizational slack and geographic dispersion depicted by size (Aldrich, 2000; Aldrich and Auster, 1986). The self-assessed economic performance measure depicts performance relative to close competitors and hence by design eliminates industry specific effects, such as munificence, product differentiability, advertising intensity, etc. Hence, economic performance was assessed on comparable scales in this cross-sectional industry sample to avoid distorting influences from the consistent differences in industry profitability (Porter, 1980; Rumelt, 1991). Possible confounding effects of capital intensity and globalization, indicated by the ratio of fixed assets to equity and percentage international sales, were also considered. The sample comprised single business firms and divisions and therefore should not be exposed to corporate strategy effects.

The relative importance of the control variables was assessed by running regressions with and without the variables to see if they caused meaningful changes in

Table VI. Multivariate regression analyses (standardized regression coefficients)

<i>(n = 185)</i> <i>Size (ln assets)</i>	<i>Economic performance</i>			
	0.261**	0.203**	0.189**	0.189**
Distributed decision authority	–	0.087	0.053	0.056
Participation in decisions	–	0.145*	0.096	0.075
Strategic planning processes	–	0.281**	0.327**	0.343**
Dynamism	–	–	–0.024	–0.016
Authority by dynamism	–	–	0.218**	0.203**
Participation by dynamism	–	–	0.009	0.005
Planning by dynamism	–	–	0.174*	0.158 ⁺
Authority by planning	–	–	–	0.192 ⁺
Participation by planning	–	–	–	–0.204 ⁺
Change in R ²	–	0.128	0.080	0.016
F-significance	–	0.000	0.001	0.100
Multiple R ²	0.260	0.443	0.525	0.543
Adjusted R ²	0.068	0.178	0.242	0.254
F-significance	0.001	0.000	0.000	0.000

⁺p < 0.10; *p < 0.05; **p < 0.01.

the regression results (Kleinbaum et al., 1998). Only the natural logarithm of assets had a material effect on the regression coefficients and was therefore included in the reported results. Dynamism was also included as independent variable to assess the effect of interaction terms between the strategy constructs and dynamism (Aiken and West, 1991; Kleinbaum et al., 1998). The independent variables including all interaction terms were tested for multicollinearity by regressing each of the descriptor variables against the other independent variables. None of the regressions reached a multiple R² above 0.75 with variance inflation factors well below 9.5 (Kleinbaum et al., 1998; Lomax, 1992). The error terms of the multiple regressions were checked for outliers, heteroscedasticity, and normality and raised no concerns.

Distributed decision authority and participation in decisions did not display any consistent direct relationships to economic performance as dependent variable. Hence, these results provided no support for Hypotheses 1.1a and 1.1b (Table VI). Strategic planning processes had significant positive relationships to economic performance, which supported Hypothesis 2.1.

Adding interaction terms between the strategy constructs and dynamism increased the explanatory power significantly at the 1 per cent confidence level (Table VI). The extended regression analysis showed significant positive regression coefficients on the interaction terms between distributed decision authority (at the 1 per cent confidence level) and dynamism and between strategic planning

processes and dynamism (at the 5 per cent confidence level), which provided support for Hypotheses 1.2a and 2.2. The regression coefficient on the interaction term between participation in decisions and dynamism was not significant, i.e., there was no support for Hypothesis 1.2b.

Adding the interaction terms between distributed decision authority and strategic planning processes and between participation in decisions and strategic planning processes increased the explanatory power significantly at the 10 per cent confidence level (Table VI). The interaction between distributed decision authority and strategic planning processes showed a significant positive regression coefficient at the 10 per cent confidence level, which provided some support for Hypothesis 3a. The interaction between participation in decisions and strategic planning processes showed a significant negative regression coefficient at the 10 per cent confidence level, which provided some support for Hypothesis 3b.

In summary, distributed decision authority seems to be an effective strategy making mode in dynamic environments while participation in decisions shows no economic effect. Strategic planning processes seem to be effective and more so in dynamic environments. When distributed decision authority and strategic planning processes are combined they seem to be even more effective, whereas participation in decisions and strategic planning combined seem to reduce economic performance. Hence, distributed decision authority appears as the most effective strategy making mode whereas participatory decision processes seem to have significant economic limitations.

DISCUSSION

Distributed decision authority, i.e., the ability of lower-level managers to take initiatives without formal approval, has a significant positive relationship to economic performance in dynamic environments. This seems to indicate that when managers are authorized to take initiatives as environmental conditions change, they increase the effectiveness of the responsive actions and enhance organizational efficiencies. The higher effectiveness may derive because lower-level managers are closer to the actual business transactions, are better informed about the details of the current market environment, and consequently can make more pertinent decisions. Managers can also take responsive action faster when they are authorized to take initiatives on their own without being bound by a cumbersome hierarchical approval process. Hence, a decentralized decision structure, where managers can take more immediate actions can lead to better economic outcomes (Andersen and Segars, 2001; Huber, 1990). This reasoning is particularly forceful in dynamic environments where market conditions often can change in unexpected ways.

Participatory decision making is not consistently associated with higher economic performance in this study. One reason might be that participatory decision

processes are relatively time-consuming and resource demanding and therefore less effective in achieving instantaneous adjustments to changing conditions. Participation in conjunction with planning may however have a positive association with innovative behaviours, which would be consistent with Hart and Banbury's (1994) results showing positive relationships between mixed-modes and product development and other qualitative outcome variables.

Strategic planning processes are positively associated with economic performance across industrial environments. Furthermore, strategic planning seems to have a somewhat higher positive effect on economic performance in dynamic industries. These results are consistent with analyses using comparable measures of strategic planning (Hopkins and Hopkins, 1997; Kukalis, 1991; Pearce et al., 1987) and studies using other methodologies (Brews and Hunt, 1999; Hill et al., 2000; Miller and Cardinal, 1994).

Distributed decision authority can be seen as the structural element underpinning the emergence of autonomous responsive initiatives that develop a reservoir of potentially successful future strategies to the organization. It can be argued that it supports effective strategy probing based on active search (Brown and Eisenhardt, 1997; Sitkin, 1992) and responsive capabilities in dynamic industries (Huber, 1990; Perrow, 1966). However, the effectiveness of distributed decision authority seems to be improved when practiced in conjunction with strategic planning processes that subject new initiatives to rational analyses, integration of capabilities, and coordination of cross-functional activities. These findings are congruent with previous studies showing that higher functional specialization combined with integrative capabilities is associated with better performance (Lawrence and Lorsch, 1986). The results also provide further credence to the view that strategic planning processes improve effectiveness by coordinating strategic actions and supporting new integrative solutions.

Conversely, the analyses indicate that participatory decision making in conjunction with strategic planning processes may have hitherto overlooked economic drawbacks that could limit otherwise positive effects on decision outcomes. Hence, the study demonstrates the potential superiority of integrative strategy formation driven by middle managers' authority to take responsive initiatives and coordination through strategic planning processes. The study provides new empirical insights about the economic performance of decentralized strategy making modes, and extends the results of Hart and Banbury's (1994) tests of mixed modes. Their integrative framework considered five strategy making modes ranging from highly centralized to highly decentralized processes: (1) the command mode – an autocratic CEO driven process; (2) the symbolic mode – a visionary inspirational process; (3) the rational mode – a formal analytical planning process; (4) the transactive mode – an iterative planning process involving all managers; and (5) the generative mode – a risk taking experimentation driven process. They found that emphasis on none or just a single strategy making mode had a negative perfor-

mance effect, while emphasis on all five modes was associated with higher performance. Emphasis on just two, three, or four strategy making modes did not show any significant effects, which should indicate that all the identified modes are important in conjunction. However, the performance effects did not show any significant relationship to economic performance measures, but reflected effects on product development and qualitative outcome measures such as employee satisfaction and social responsibility.

In contrast, the current study identifies three central strategy making modes in the integrative strategy formation model, and tests their relative importance in terms of economic performance. Hart and Banbury (1994) adopted a resource-based perspective to explain possible performance effects of mixed modes, i.e., the integration of several modes should reflect more extensive strategy making capabilities. However, the use of strategic process archetypes as indicators of different modes did not explicate the findings within an integrative strategy process theory. In contrast, the current study uses organization theoretical rationales to explain the effectiveness of decentralized strategy making and argues how strategic planning processes enhance performance through integrative rationalizations. The theoretical rationale has been further extended, as distributed decision authority provides middle managers with the ability to introduce new initiatives in response to environmental changes that in turn can be effectively evaluated, integrated, and coordinated through strategic planning processes.

The current study expands our view on effective strategy processes in the post-bureaucratic organization conceptualized in an integrative strategy formation model incorporating decentralized structural elements of distributed decision authority and participatory decision making as well as strategic planning processes. Hence, the observation that centralized integrative processes seem to play an important role in the post-bureaucratic organization does not appear to reflect a particular European phenomenon as suggested (Hill et al., 2000). This study shows that the same phenomenon prevails in a North American sample of single business entities. Decentralized decision structure, a central characteristic of the post-bureaucratic organization, can be ascribed to strategic decision power at the business unit level, and it seems to matter. The results confirm that decentralized strategic decision structure can contribute positively to organizational outcomes and enhance economic performance in dynamic environments. The study also supports the thesis that different strategy making modes, i.e., decentralized strategy making and strategic planning processes, are coexisting elements of integrative strategy formation as suggested by previous research (Hart, 1992; Hendry, 2000; Mintzberg, 1978; Mintzberg and Waters, 1985). Decentralized strategy making, particularly reflected in autonomous strategy making capabilities, and strategic planning constitute complementary processes and the simultaneous engagement in both strategy making approaches is associated with higher organizational performance.

We should also recognize that the analyses have some limitations. The focus on decentralized strategy making and strategic planning processes does not consider potential effects of other strategy making modes, such as autocratic command, visionary leadership, etc. Furthermore, the measures adopted in the empirical study are self-reported by an executive in each of the sampled business entities. Although responses from a member of the top management team underpin many organization studies (e.g. Hart and Banbury, 1994) this approach may obviously compromise the results. However, the validity of responses was tested both by comparison to randomly selected secondary respondents as well as archival performance data and did not reveal any biases. Finally, the study was based on organizations operating in specific manufacturing industries. Although the industries were carefully chosen we cannot be sure that the results are generalizable to all other industrial environments or to business entities located in vastly different economic and cultural environments.

CONCLUSIONS

The implications of the results reported in this paper are twofold. Firstly, the results confirm that decentralized strategy making, defined by dimensions of decentralized strategic decision structure, can play an important role in dynamic industries. Hence, the decentralization characteristic of the post-bureaucratic organization clearly has merit in contemporary environmental settings. Distributed decision authority improves organizational effectiveness in dynamic industries whereas participation in strategic decisions seems to have a potential economic downside. Secondly, strategic planning processes are important in all industrial environments and indicate higher economic performance relationships in dynamic industries. Distributed decision authority in conjunction strategic planning processes seems to improve economic performance even further. Hence, decentralized emergent strategy and strategic planning are complementary strategy modes that can coexist and enhance organizational performance, particularly in dynamic environments.

These findings extend the strategic management field in a number of ways and modify our view of the post-industrial organization. Firstly, the study provides empirical evidence that distribution of strategic decision power is associated with higher performance in dynamic environments. Secondly, the study demonstrates that effective organizations not only decentralize strategic decision making but also engage in integrative strategic planning processes. The study identifies three distinct elements in the strategy formation process, i.e. middle managers' authority to take initiatives, participation in strategic decisions, and strategic planning processes, and incorporates them into an integrative strategy formation perspective. The strategy literature has been less explicit about the effect of these strategy making modes in the overall strategy formation process. However, effective

strategy formation seems to build on coexisting processes characterized by decentralized authority to take initiatives and integrative strategic planning processes.

APPENDIX: NORTH AMERICAN BUSINESS ENTITIES INCLUDED IN THE STUDY

Lower Dynamism Industries

Single business firms

United Sugars Corporation (MN)
Butterball Turkey Company (IL)
Mrs. Smith's Bakeries Incorporated (GA)
Continental Deli Foods (OK)
KPR Holdings L.P. (TX)
Goodmark Foods (NC)
J&J Snacks Foods Corporation of New Jersey (NJ)
Lance Incorporated (NC)
Paradise Incorporated (FL)
Husman Snack Foods (OH)
Rymer Meat Incorporated (IL)
Silverado Foods Incorporated (OK)
Tyson Foods Incorporated (AR)
Wampler Foods Incorporated (VA)
WSMP Incorporated (NC)
Anheuser-Busch Incorporated (MO)
Big Rock Brewery Limited (Alberta)
Clearly Canadian Beverage Corporation (B.C.)
Coca-Cola Enterprises Incorporated (GA)
Frederick Brewing Company (MD)
The Lion Brewery (PA)
Minnesota Brewing Company (MN)
Robert Mondavi Corporation (CA)
Pete's Brewing Company (CA)
Redhook Ale Brewery (WA)
Tropicana Products Incorporated (FL)
Todhunter International Incorporated (FL)
Willamette Valley Vineyards (OR)
Brothers Gourmet Coffees Incorporated (FL)
Chock Full O'Nuts (NY)
Ashworth Incorporated (CA)
Biscayne Apparel Incorporated (NY)
Cherokee Incorporated (CA)

GUESS? Incorporated (CA)
 Hart Schaffner & Marx Clothes (IL)
 Innova Incorporated (TN)
 The North Face Incorporated (CA)
 Quiksilver Incorporated (CA)
 Starter Corporation (CT)
 Varsity Spirits Fashions Incorporated (TN)
 Nutmeg Industries (FL)
 Vanity Fair (NY)
 Jantzen (NY)
 Howard B. Wolf Incorporated (TX)
 Busch Industries Incorporated (NY)
 Peters-Revington Corporation (IN)
 The Lane Company Incorporated (VA)
 American Drew (NC)
 American of Martinsville (VA)
 Barclay Furniture (MS)
 Clayton Marcus (NC)
 Pennsylvania House (PA)
 La-Z-Boy Incorporated (MI)
 O'Sullivan Industries Incorporated (MO)
 Rowe Furniture Corporation (VA)
 Stanley Furniture Company (VA)
 Loewenstein Furniture (FL)

Corporate divisions

Campbell Soup Company (NJ) – US Soup Division
 Entenmann (NY) – Entemann's Bakery
 The Earthgrains Company (MO) – Earthgrains Baking Companies
 The Earthgrains Company (MO) – Earthgrains Refrigerated Dough Products
 American Rice Incorporated (TX) – Retail Services Division
 General Mills (MN) – Yoplait-Colombo
 Gold Kist Incorporated (GA) – Poultry Group
 Golden Enterprises Incorporated (AL) – Golden Flake Snack Foods
 Hudson Foods Incorporated (AR) – Broiler Division
 IBP Incorporated (NE) – Fresh Meat Division
 Lincoln Snack Company (CT) – Eastern US Division
 Midwest Grain Products (KS) – Alcohol Marketing Division
 Philip Morris Companies Incorporated (WI) – Oscar Mayer Division
 Riviana Foods Incorporated (TX) – Rice Products Division
 Sara Lee Corporation (TN) – Sara Lee Packaged Meat Division
 Savannah Foods Incorporated (GA) – Grocery Products Division

Smithfield Ham & Products Company (VA) – Retail Products Division
Brown Forman Corporation (CA) – Fetzer Winery
Canandaigua Wine Company (IL) – Barton Beers Division
Canandaigua Wine Company (IL) – Barton Spirits Division
Cintas Corporation (OH) – Midwest Rental Group
Cintas Corporation (OH) – Northeastern Rental Group
Hampton Industries Incorporated (NY) – Menswear and Activewear Division
Jones Apparel Group Incorporated (NY) – Jones New York Brand Division
American Recreation Products (MO) – Wenzel Division
Mossimo Incorporated (CA) – Womenswear Division
Liz Claiborne Incorporated (NY) – Liz Wear Division
Oxford Industries Incorporated (GA) – Lanier Clothes Group
Oxford Industries Incorporated (GA) – Oxford Shirt Group
Philips-Van Heusen Corporation (NY) – Van Heusen Dress Shirt Group
The Sirena Apparel Group Incorporated (CA) – Anne Klein Division
The Sirena Apparel Group Incorporated (CA) – Sirena Wear Abouts Division
The Warnaco Group Incorporated (NY) – Olga Intimate Apparel Division
Ameriwood Industries (MI) – Furniture Division
Ethan Allan Interiors Incorporated (CT) – Northeast Retail Division
Ethan Allan Interiors Incorporated (CT) – Southeast Retail Division
Flexsteel Industries Incorporated (IA) – Home Seating Division
Flexsteel Industries Incorporated (IA) – Recreational Seating Division
Flexsteel Industries Incorporated (MI) – Commercial Seating Division
Winslow Furniture Incorporated (AL) – Winston Furniture Division

Higher Dynamism Industries

Single business firms

Access Corporation (OH)
Access Solutions International Incorporated (NJ)
Adaptec Incorporated (CA)
Ancor Communications (MN)
Bitwise Designs Incorporated (NY)
UMI Company (MI)
Cabletron Systems Incorporated (NH)
Ciprico Incorporated (MN)
CSP Incorporated (MA)
Cybex Computer Products Corporation (AL)
Datapoint Corporation (TX)
Dialogic Corporation (NJ)
Diebold Incorporated (OH)
Digital Biometrics Incorporated (MN)

Disc Incorporated (CA)
Electronics for Imaging Incorporated (CA)
Emulex Corporation (CA)
Cirrus Logic Incorporated (CA)
Electronic Retailing Systems Incorporated (CT)
Fastcomm Communications Corporation (VA)
General Binding Corporation (IL)
HMT Technology Corporation (CA)
Interlink Computer Sciences (CA)
Javelin Systems Incorporated (CA)
Kentek Information Systems Incorporated (CO)
Kronos Incorporated (MA)
Larscom Incorporated (CA)
Data Translation Incorporated (MA)
MedPlus Incorporated (OH)
In Focus Systems (OR)
Megadata Corporation (NY)
Microframe Incorporated (NJ)
Microtouch Systems Incorporated (MA)
Network Appliances Incorporated (CA)
Network Equipment Technologies Incorporated (CA)
Nview Corporation (VA)
Olicom Enterprise Products (TX)
Paravant Computer Systems Incorporated (FL)
Photomatrix Incorporated (CA)
Printronic (CA)
Radisys Corporation (OR)
Raster Graphics (CA)
Vertel Corporation (CA)
Sandisk Corporation (CA)
Secure Computing Corporation (CA)
Spacetec IMC Corporation (MA)
Storage Computer Corporation (NH)
Stratasys Incorporated (MN)
Sun Microsystems Incorporated (CA)
Boundless Technologies Incorporated (TX)
Tandem Computers Incorporated (CA)
Telepad Corporation (VA)
Televideo Systems Incorporated (CA)
The Network Connections Incorporated (GA)
Truevision Incorporated (CA)
Wells-Gardner Electronics Corporation (IL)

Xylan Corporation (CA)
 Wandel & Goltermann Technologies (NC)
 Giga-Tronics Incorporated (CA)
 Trion Incorporated (NC)

Corporate divisions

Alpha Microsystems (CA) – Equipment Division
 Amdahl Corporation (CA) – US West Division
 Autotote Corporation (DE) – Horse Race Group
 Bell & Howell Company (IL) – Information Management Products Group
 Data General Corporation (MA) – Clariion Business Unit
 Dotrinix Incorporated (MN) – Diagnostics & Medical Products Group
 Genicom Corporation (VA) – Documents Solutions Company
 Hewlett Packard (CA) – Solutions Group
 Maxwell Technologies (CA) – I-Bis Division
 Micros Systems Incorporated (MD) – Leisure & Entertainment Business Group
 Micros Systems Incorporated (MD) – Quick Service Restaurant Business Group
 NCR Corporation (OH) – Worldwide Customer Service Group
 NCR Corporation (OH) – Computer Systems Group
 PAR Technology Corporation (NY) – PAR Microsystems Corporation
 PAR Technology Corporation (NY) – PAR Government Systems Corporation,
 Logistics – Management Division
 PAR Technology Corporation (NY) – PAR Government Systems Corporation,
 Signaling Image – Processing Division
 Retix Corporation (CA) – Retix Wireless Solutions Group
 San-Graphics (PA) – Sedona Geoservices, Incorporated
 Standard Microsystems Corporation (NY) – Component Products Division
 Standard Microsystems Corporation (NY) – System Products Division
 Symbol Technologies (NY) – Wireless Systems Division
 Bio-Rad Laboratories (CA) – US Life Science Division
 Bio-Rad Laboratories (CA) – US Diagnostics Division
 Analogic Corporation (MA) – Medical Imaging Division
 Analogic Corporation (MA) – Data Conversion Products Division
 Transmation Incorporated (NY) – Transcat/E.I.L. Division
 Coherent Incorporated (CA) – Coherent Auburn Group, Instruments Division
 Tektronix, Incorporated (OR) – Measurement Business Division

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