Realizing the Potential of the Ambidextrous Firm

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Abstract

Sustaining innovation in the face of pressures to be cost-competitive and make effective use of existing resources is not a new challenge, but recent acceleration of competition has pushed this issue high on the agenda for managers and researchers. Organizing and managing the "ambidextrous" company – a firm that excel in exploring new areas of productive knowledge and exploiting existing capabilities – has emerged as a major concern of strategic management. In this paper, we explore coordination problems that make it difficult for firms to realize their potential as ambidextrous competitors. Organizations may possess superior skills for both exploration and exploitation yet fail to achieve competitive capabilities. Ambidexterity often involves high levels of differentiation within organizations and creates critical challenges for coordination.

Keywords: Exploration, Exploitation, coordination and inter-unit differentiation

Sustaining aggressive innovation in the face of pressures to be cost-competitive and make highly effective use of existing resources is not a new challenge for business (Burns and Stalker, 1961; Eisenhardt and Martin, 2000; Leonard-Barton, 1992). However, the acceleration of competition during the last decade has pushed this issue high on the agenda for managers and business researchers. Organizing and managing the "ambidextrous" company – a firm that can excel in both exploring new areas of productive knowledge and exploiting existing capabilities – has emerged as a major concern of strategic management (Tushman and O'Reilly, 1996; Rothaermel and Deeds, 2004; He and Wong, 2004).

Companies in emerging and transitional economies often have been viewed as immune to these pressures; they are seen as low-cost competitors or firms that survive on the strength of local ties and channels. However, many companies in China now are facing the same challenges as their counterparts in the West. Rapid technological and market change have combined with the opening of borders to create new pressures for innovation, especially as Chinese companies move into more sophisticated and higher value-added areas of industry. At the same time, shortages of skilled labor and rising labor costs have begun to erode the advantages Chinese companies have enjoyed over their competitors in other parts of Asia and the world. The result has been a growing need for Chinese companies to master the art of ambidextrous competition – to learn to explore new areas of product and technical knowledge while intensifying the exploitation of existing capabilities.

This ambidexterity involves organizational complexity that can be difficult to manage, regardless of where a firm is situated (Gibson and Birkinshaw, 2004). Exploration and exploitation require different skills and flourish under different structures and incentives. This type of unit-level specialization leads to differentiation within firms that can create problems for coordination and breed unproductive conflict (Lawrence and Lorsch, 1967).

In this paper, we explore some fundamental coordination problems that can make it difficult for firms to realize their potential as ambidextrous competitors, and we examine a few factors that may help to ameliorate these problems. Organizations may possess superior skills for both exploration and exploitation activities yet fail to translate this potential into competitive capabilities. Ambidexterity often

involves high levels of differentiation within organizations and creates challenges for coordination that firms may not be able to meet.

The management of ambidexterity has been examined primarily at the intra-group level (He and Wong, 2004; Brady and Davis, 2004; Kyriakopoulos and Moorman, 2004). Research to date has focused on problems associated with individual units or groups achieving capabilities in both exploitation and exploration. Coordination problems also have been addressed at the level of intra-group processes and – in some cases – coordination of the firm as a whole, but little attention has been paid to coordination between differentiated units within firms (Un and Cuervo-Cazuerra, 2004; Matusik, 2002). The problems that arise at this level may be particularly salient for ambidextrous firms; exploration and exploitation often are concentrated within different functional areas or business units rather than in different sub-groups within a single unit.

In this paper, we focus on coordination problems that arise between units that have become highly differentiated from each other as a firm develops ambidextrous capabilities. We begin by developing a simple conceptual model of organizational processes that link the potential for ambidexterity to performance. The development of capabilities for both exploring new areas of product or process knowledge and exploiting existing knowledge to make incremental improvements in products and typically leads to greater unit-level specialization within firms. This specialization may create new coordination problems that, in turn, compromise the ability of the firm to succeed as an ambidextrous competitor.

In developing this analysis, we draw upon a rich tradition of organization theory rooted in the industrial sociology of Burns and Stalker (1961) and the contingency theory of Lawrence and Lorsch (1967). Contingency theory offers fundamental insight into the impact of specialized knowledge on coordination within firms. The implications of this work for more recent approaches to ambidexterity have gone largely unrecognized – partially due to the emphasis on the intra-group level in current work. By bringing these issues back into focus, we expand current approaches to deal with some of the organizational challenges currently facing managers in ambidextrous firms.

The second part of the paper examines the case of a large Chinese company in the industrial and consumer chemical industries. The company has faced mounting pressure to compete as both a highly efficient producer of relatively stable products and a consumer market innovator in a price and quality-sensitive market. These dual imperatives have created important challenges for management as they move the company toward realizing ambidextrous capabilties.

We have chosen a company in China for several reasons. First and foremost, firms such as the company we examine face critical pressures to innovate and respond to consumer markets while continually fine-tuning products and processes. Rapid opening of Chinese markets and growing cost pressure mandate this response. Chinese companies therefore also can provide broader insights into transitional and emerging economies. A hallmark of economic transition is the lowering of barriers and globalization of competition with attendant pressure on domestic firms. At the same time, China also has emerged as one of the world's great economic powers, and the activities of Chinese companies are increasingly important to global business.

The paper concludes with a brief examination of some of the mechanisms that can help mitigate the organizational problems that arise with ambidexterity. Underlying social relationships and structural arrangements within organizations may both play vital roles in ameliorating these problems. Managers must recognize existing social capital resources within firms and act to create structural solutions to supplement social coordination when necessary.

Ambidexterity

The idea of ambidexterity and the pressures to become an ambidextrous competitor are vividly illustrated in the recent history of Japanese electronics giant Sony. Two decades ago, the contrast between Sony and Matsushita was legendary. Sony competed as an innovator, bringing out more sophisticated products and reacting quickly to the whims of consumers. Matsushita was famous for capabilities in reproducing and refining products already in the market while fine-tuning production processes to drive costs down. Sony had highly developed capabilities for exploring new areas of product and process

knowledge; Matsushita was paramount in exploiting existing knowledge to improve products and processes by degree.

Two decades later, Sony no longer can afford to be an explorer and leave competition in exploitation to others. They are now faced by competitors such as Samsung who have moved from strategies similar to Matsushita to develop strong exploration capabilities while refining proven capabilities for exploitation. Sony now struggles to find ways to sustain its status as an industry innovator while simultaneously driving down costs and upgrading quality.

Just as the need for firms such as Sony to achieve ambidexterity is relatively recent, the recognition that firms can compete in this way is a recent idea for management research. When March (1991) wrote his pathbreaking work on "Exploration and Exploitation in Organizational Learning," these two modes of learning were largely viewed as alternatives that competed with each other for organizational resources (Miller and Friesen, 1986). However, the late 1990's witnessed growing recognition that firms in highly competitive environments cannot afford to focus on either exploration or exploitation alone (Levinthal and March, 1993; Holmqvist, 2004; Benner and Tushman, 2003). Rapid technological change, globalization, and new sources of information shortened product cycles, raised the pace of imitation and substitution, and ramped up pressure for efficiency (Brown and Eisenhardt, 1997; D'Aveni, 1994). Survival increasingly meant that firms had to be able to excel in both exploration of new areas of knowledge and exploitation of established capabilities (He and Wong, 2004; Tushman and O'Reilly, 1996).

Research in the last few years has begun to emphasize this duality. A growing body of work in strategic management and marketing has examined the strategies of ambidextrous firms. Attention also has turned to the organizational problems associated with ambidexterity, particularly processes of learning and decision-making within groups.

Unit-level Specialization and Differentiation within the Firm

Although much of the work on ambidexterity has focused on processes that take place within groups (He and Wong, 2004; Brady and Davis, 2004; Kyriakopoulos and Moorman, 2004; Özsommer and Genctürk, 2003; Schildt et al., 2005), there has begun to be recognition that differentiation among units or departments may play a vital role for ambidextrous firms. Business units may face very different environments and require differing degrees of innovation, with the result that specific departments or SBU's emphasize the development of either exploration or exploitation capabilities (Mendelson and Pillai, 1999). Structural differentiation within divisions or business units can be even more significant (Dewar and Hage, 1978). Exploitative learning often is associated with groups such as production while exploration may be concentrated in R&D or marketing units.

The idea that specialization and differentiation among internal units is important to a firm's ability to respond to the environment is not new. In certain ways, the concept can be traced back to Adam Smith (1994), and it has been one of the foundations of management research since Lawrence and Lorsch's (1967) pathbreaking work on contingency theory. The fact that organizations must achieve requisite levels of specialization among units – and develop integrating mechanisms to coordinate the activities of specialized units – has been one of the most durable findings of organizational research (e.g Dewar and Hage, 1978; Gulati et al., 2001; Herbert, 1977).

Ambidexterity relies on a high degree of inter-unit or inter-group differentiation (Ancona et.al., 2001; Brown and Eisenhardt, 1997 ; He and Wong, 2004). People engaged in explorative learning characteristically operate with a good deal of autonomy and often work under informal structural arrangements (Tushman and O'Reilly, 1996). Exploitation activities, on the other hand, are facilitated by more structured, bureaucratic administration and incentives that emphasize efficiency in routine tasks (Masini et al., 2004; Tushman and O'Reilly, 1996).

These differences in group functions, structures, and incentives have profound implications for staffing and group culture (Lawrence and Lorsch, 1967). Groups more heavily involved in exploration typically will be composed of people who are quite different from the staff of exploitation-oriented units.

Outcome-focused people who prefer riskier environments with fewer formal controls will be attracted to exploration-intensive work, and effective organizations will select and retain employees partly on those criteria. Conversely, exploitation-oriented units are likely to be staffed by people with lower tolerance for risk but greater affinity for routines and bureaucratic control.

Some degree of social differentiation characteristically accompanies structural differentiation within firms. However, the relationship between structural and social differentiation is not deterministic. Two groups may perform substantially different functions and have different capabilities, but personnel may not vary greatly in their social characteristics or culture. This is important because coordination is more problematic when social characteristics reinforce structural divisions (Robins and Lui, 2005; Lau and Murnighan,1998; Chan, 1989; Alderfer and Smith, 1982). The factors that can moderate divisive effects of social and structural differentiation also differ in certain important ways.

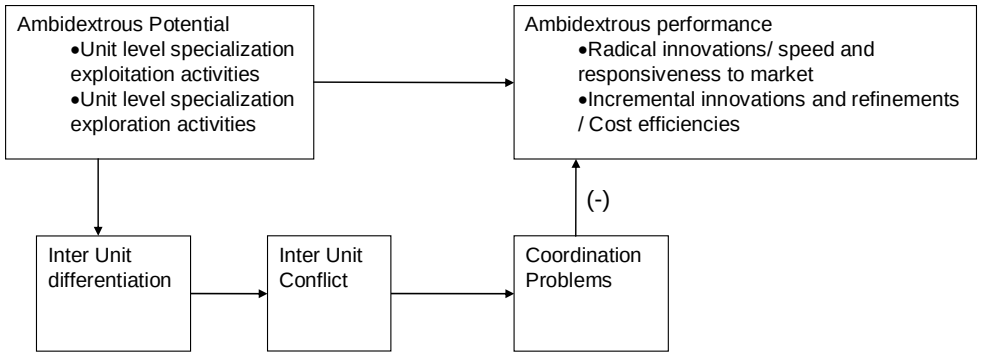
Coordination

Coordination between differentiated groups or units may be challenging. The individuals involved may have incompatible attitudes toward work and frame key objectives of the business in very different ways. At a purely personal level, empathy between group managers or personnel may be limited. This can create deep conflict between groups that must be overcome in order to achieve the coordination that is necessary to realize the potential of each group (Ginn and Rubenstein, 1986).

However, underlying conflict of this type does not necessarily become manifest as a failure of coordination. Groups that are sharply divided on cognitive and affective grounds may nonetheless work effectively within coordinating structures that minimize problems of goal incongruence. One of the fundamental insights of the behavioral theory of the firm (Cyert and March, 1963) is that groups within organizations need not have identical objectives, views of the environment, or attitudes. Organizational effectiveness requires unit-level objectives that are compatible with the division of labor in the larger organization. At the same time, the structure of the organization must be designed in ways that facilitate necessary coordination across disparate units and groups.

Firms therefore face a conundrum. The same capabilities that provide the potential for ambidexterity also are linked to high levels of differentiation among business units and functional groups. This differentiation leads to inter-group conflict around a range of basic issues, and it can polarize the attitudes of the people involved. Conflict, in turn, may exacerbate coordination problems and thus block realization of a firm's potential for ambidexterity. In effect, ambidexterity can become its own worst enemy; the conditions that create the potential for ambidexterity also drive processes that can stand in the way of realizing that potential. These relationships can be illustrated with a simple conceptual model of processes affecting the ability of firms to achieve ambidextrous performance (Figure 1).

Figure 1:



High-level capabilities are required for firms to succeed in exploration or exploitation activities. Capabilities of this type reside in teams and systems that can be found within departments or business units in firms. The presence of both units that contain strong exploration capabilities and units that contain strong exploitation capabilities therefore is a prerequisite for ambidextrous performance – it defines the potential for ambidexterity.

However, the potential created by the presence of these unit-level capabilities may not be realized in the form of performance. Ambidextrous performance involves simultaneous, coordinated utilization of unit level capabilities. As noted above, the organizational challenges associated with this can be

formidable. Firms' efforts to excel in introducing new products and processes while refining existing ones and driving down costs often founder on basic problems of coordination and management.

Case History: Shanghai Diversified Chemicals

These issues can be seen very clearly in the experiences of Shanghai Diversified Chemicals[1] [footnote: This is a disguised name. Anonymity of the company and its managers was a condition for doing the case study] Shanghai Diversified Chemicals (SDC) is an industrial and consumer chemical company that manufactures and markets a range of products from industrial detergents to personal products such as cosmetics. The company was formed approximately fifteen years ago as a joint venture between a state-owned enterprise (SOE) and a North American multinational.

The resulting firm is unusual in a number of ways. It is a highly integrated company that carries out the full range of operations from R&D to marketing in China. The company is not export-focused; the majority of output goes into the domestic market. The foreign parent firm also is unusual. It is a closely-held company with strong traditions of paternalistic management. This aspect of corporate culture helped SDC integrate employees from the former state-owned enterprise. The Human Resources Director of SDC notes that the traditional, paternalistic culture of the foreign parent was compatible with the culture of the SOE. Both companies emphasized stable employment and had a holistic approach in which the company took responsibility for many areas of an employee's life.

One result of this was that certain departments in SDC such as Production were heavily staffed with engineers and managers from the former SOE. However, other areas such as Consumer Marketing tended to have few former SOE employees – in part due to the fact that marketing functions traditionally had little significance in socialist state-owned enterprises. The people in marketing typically were younger than average for the firm, had clocked fewer years within the firm, were highly sensitive to trends and Western tastes, and they often were very individualistic and materialistic.

Exploration and Exploitation: Marketing versus Production

In many ways, both the Consumer Marketing and Production groups were well-suited to their roles. The Consumer Marketing group had substantial responsibility for identifying and developing new products in areas such as cosmetics and personal products. Tastes in these areas changed quickly, and they were increasingly affected by worldwide trends in the media. The Consumer Marketing people were in touch with these trends; they often favored personal lifestyles similar to their customers.

Although quite different from Consumer Marketing, staff of the Production Department also were well-suited to their roles. They tended to be highly experienced people with strong team skills and a sharp eye for detail. The Production Department had been very successful in fine-tuning production methods and slicing costs from some of the stable processes that supported core products. They also were excellent at quality control and quality improvement; the company was one of the earliest in China to achieve ISO certification.

Factors other than the history of the firm also contributed to differences between departments. The daily routine in an area such as production was very stable; managers, engineers, and line employees were all largely bound to the schedule of manufacturing. R&D or Marketing had less structured workdays, and marketing managers often were in the field with store buyers and other clients. Incentives also varied; the Marketing Department received substantial performance bonuses based on new revenue. The fixed portion of salaries was much higher for Production; bonuses typically contributed a small portion of salary. These differences were logical in terms of group functions and they also fit the culture of the groups.

However, production engineers often found themselves at a loss when confronted with new product plans developed by Consumer Marketing. The products often were impossible to produce in any economical way. In some cases, specifications for new products were simply impossible. The Production Department frequently ended up handing plans back to Marketing for further development.

This was not received well by Marketing. The young, westernized, private enterprise-oriented Marketing staff typically blamed the employees in Production for the problems. They viewed the former

SOE people as antiquated, unimaginative and semi-competent. In most cases, Marketing responded to Production by sending the plans back to Production with few changes.

Production responded in kind. They tended to view the Marketing people as unskilled, undisciplined and unrealistic – and they blamed the flaws in product specifications on the limited competence of people involved in product development within the Marketing department. Personnel in the Production department often did not see new products as offering any advantage over the existing line and were skeptical about their value. Plans for new products frequently were sent back to Marketing with most of the original objections restated.

This process of handing plans for new products back and forth continued through multiple iterations and waves of recriminations until a manufacturable product emerged. The process created a major problem for the company – it was slow, and good ideas sometimes got lost. In areas such as consumer products, it was necessary for SDC to be quick to the market with new products. Trends changed rapidly, and a product might be worth little three months after its introduction. In order to succeed in these markets, SDC needed continually explore new product areas, look for breakthrough products, and bring them to market quickly.

At the same time, even the consumer products area was not immune to cost pressures. New overseas competitors entered the Chinese market daily, and competition was eroding margins. SDC faced mounting pressure to be innovative and responsive to the market while constantly reducing costs and boosting quality. The firm was having difficulty meeting these challenges.

On one level, the problem was simple: groups composed of different people with different incentives, operating procedures, and attitudes had difficulty coordinating their activities. On another level, the problem was profound. The company had the unit-level capabilities in production and marketing necessary to succeed as an ambidextrous competitor. However, these two different areas had a level of social differentiation from each other that led to serious coordination problems. Members of the two groups framed problems differently, had trouble finding a common language, and had little trust in each other's competence. These coordination problems stood in the way of either group realizing its full

potential. These issues had not been pressing in the world of government-scheduled production by SOE's, or even in the context of post-reform industrial markets, but they caused major problems for a firm in the fast-moving consumer markets of contemporary China. Increased competition and an accelerating pace of innovation in the industry had made a formerly stable situation potentially crippling to the firm.

The fact that different units had skills, staffing, procedures and cultures that were specialized to their different roles was not, in itself, a problem In many ways, specialization is the reason for the existence of complex organizations, and it is a necessary condition for survival in the modern world. Increasing pressures for innovation, cost efficiency and quality require constant improvement in the capabilities of firms and the development of ever-greater levels of specialized knowledge. This specialization also implies growing social differences among units and greater challenges for coordination.

High levels of inter-group differentiation create a need for mechanisms to ameliorate the impact that social and cognitive differences can have on coordination (Lawrence and Lorsch, 1967). The problem faced by SDC was not excessive specialization; it was the fact that the social resources and structural arrangements within the firm were not adequate to moderate the effects of inter-unit conflict on coordination among departments.

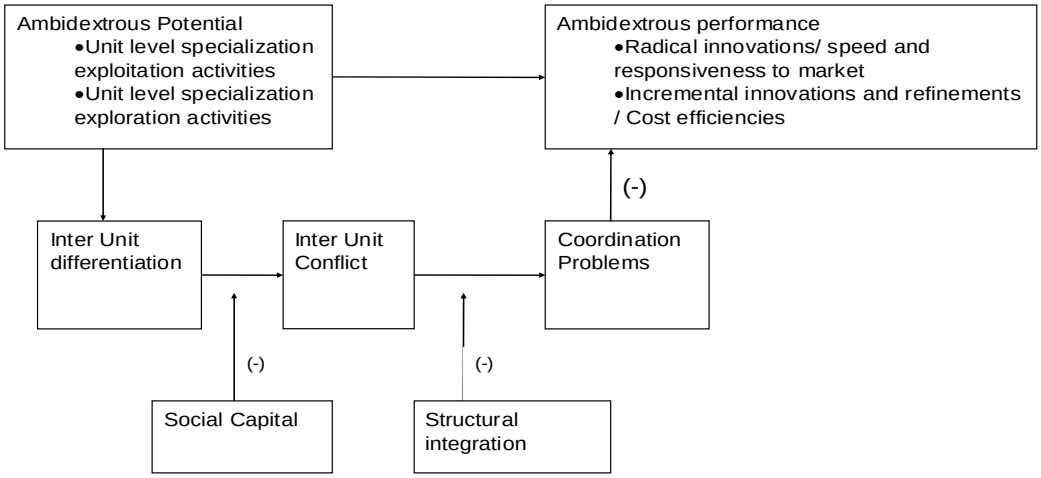
Moderating Coordination Problems

Coordination problems of this type can be addressed on two levels: through social relationships that reduce conflict between differentiated groups, and through an organizational architecture that facilitates coordination of the activities of groups even if they experience conflict. Internal (intra-firm) relational and cognitive social capital can help to bridge gaps between units within the firm and relieve inter-unit conflict. Effective organizational design can help to prevent conflict from becoming a basis for failures of coordination.

A more complete view of the interrelationships among these forces is summarized in Figure 2. Potential ambidexterity is defined, in the first instance, by capabilities developed at the level of units or groups within the firm. The ability to realize this potential and translate it into performance relies heavily

on social relationships that cross unit lines and integrative mechanisms that may be designed and managed from higher levels.

Figure 2:



Social capital and conflict

Conflict between groups has affective and cognitive dimensions. In the case of affective conflict, personnel in different groups or units may view each other's competence or motives with distrust, and this distrust may become an obstacle to inter-group coordination. Cognitive forms of conflict can play an even greater role in creating failures of coordination. People who frame problems in different ways and have different mental maps of the environment inevitably face major challenges in joint problem solving or developing protocols and operating procedures; the shared organizational language required for coordinated activity does not exist (Arrow, 1974; March, 1994). In very simple terms, it is easier to coordinate the actions of people who do not like each other than the actions of people who cannot communicate with each other.

Internal Social Capital and Conflict

Internal social capital (Adler and Kwon, 2002) is rooted in an underlying social community that facilitates the creation and transfer of knowledge among individuals within organizations (Kogut and

Zander, 1992,1996 ; Loasby, 1998; Naphiet and Ghosal, 1998). Naphiet and Ghoshal (1998) suggest a useful distinction between the relational and cognitive dimensions of social capital that parallels the social and cognitive dimensions of conflict. Relational social capital follows Jacobs's (1965) original usage of the term "social capital" – it designates a set of interactions that breed trust, approval and respect among individuals. Cognitive social capital refers to representations and interpretations of reality and systems of meaning that are shared among a set of individuals. The idea of cognitive social capital has a great deal in common with Arrow's (1974) notion of organizational language or Grant's (1996) discussion of common language within organizations, and it is rooted in the classic sociological treatment of shared representations developed by Durkheim (1995) and refined by more recent sociologists such as Cicourel (1973).

Relational social capital that cuts across the boundaries of differentiated groups or units within a firm may help moderate the divisive effects of social differentiation and thus reduce the affective side of conflict. This can help to create greater trust and motivation for coordination, particularly when coordination involves activities such as joint problem solving. Cognitive social capital helps attack an even more critical problem – obstacles to communication between groups. Intergroup coordination is likely to fail if shared systems of interpretation and meaning are weak, regardless of the motivation of group members to cooperate.

Social capital resources typically are built up over time, and it may be difficult for managers to find ways to rapidly remedy shortfalls in social capital. From a managerial standpoint, social capital resources are better treated as fixed in the near term. In cases where social capital resources are insufficient to reduce conflict to manageable levels, organizational architecture may offer a means of reducing the impact of conflict on coordination.

Organizational architecture and coordination

A variety of organization structures and integrating mechanisms have been developed that can aid in coordination of the activities of units that are operating with different local goals and different information. Matrix structures, project teams, task forces, and even product or client managers all serve

this purpose. Each of these devices provides a means of tapping the specialized capabilities of different groups and coordinating the use of those capabilities to achieve organization-level objectives.

The role of organizational design in dealing with coordination problems of this type has been explored at great length in research on management (e.g. Galbraith, 1973). It may be particularly important in the context of ambidextrous organizations. In cases where social capital resources are not sufficient to minimize the effects of inter-unit conflict, structured responses based on organizational design may offer a means of sustaining ambidexterity.

Organizational responses of this type also may face difficult challenges. The potential for inter-unit failures of coordination becomes higher with competition for resources. Even units with otherwise congruent goals may find that they are in competition for the resources necessary to pursue their objectives. Under munificent conditions, this type of rivalry may be muted; however, scarcity can be expected to bring it to the forefront. Sustaining necessary levels of coordination in the face of resource scarcity probably is one of the greatest challenges faced by ambidextrous firms.

As competitive pressures continue to accelerate, the challenges of managing ambidexterity are taking on even greater urgency for firms. In the process, long-standing ideas about environmental contingency and the link between organizational structure and performance also have assumed new importance. When these established concepts are brought together with ideas from recent work on social capital and innovation, they can provide valuable insights into ways that firms can respond to rapidly changing competitive conditions.

This paper is little more than a preliminary sketch of some key ideas and issues. The growing role of firm-level ambidexterity in the contemporary business environment strongly argues for further development and integration of these ideas. This approach has the potential to provide both an expanded research agenda on the ambidextrous firm and important practical insights into a vital problem facing managers – understanding how organizational design can help their firms leverage diverse capabilities to achieve superior performance.

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