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Managerial Innovation: Conceptions, Processes, and Antecedents

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ABSTRACT The expansive research on innovation in organizations has primarily followed a technological imperative, postulating that organizations organize their innovation efforts through research and development (R&D) activities. Theories of innovation are thus shaped mostly from the studies of technology-based innovations in the manufacturing sector, yet are applied in all contexts. This article advocates research on managerial innovations – new approaches to devise strategy and structure of tasks and units, modify the organization's management processes and administrative systems, motivate and reward organizational members, and enable organizational adaptation and change. We examine the conceptual development, generation and adoption processes, antecedents, and influences of managerial innovation on organizational conduct. By increasing an understanding of managerial innovation, this article aims to complement existing theories of innovation derived from the studies of technological innovations and thus help extend and advance theory and research on innovation process and outcome in organizations.

KEYWORDS administrative innovation, innovation process, innovation type, management innovation, organizational innovation, performance consequences

INTRODUCTION

The Chinese economy has been growing significantly over the past two decades. The country now has the second largest economy in the world and has been referred to as an 'economic powerhouse' (Chen & Miller, 2010: 18). While China's past growth has been mainly efficiency-driven based on access to low cost labour, a similar level of economic growth and societal prosperity cannot be attained by being a low-cost manufacturer only. As in other advanced economies, innovative capability will be a critical factor for future economic growth and employment in China. The country is already investing in innovative activities, and some global companies are locating their research and development (R&D) operations in China. Chinese firms would also need to emphasize and invest in innovation not

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only to facilitate their own performance and growth, but also to contribute to economic development and improve people's lives (Ahlstrom, 2010).

Since Schumpeter's seminal work on the central role of innovation on economic development in 1911, research on innovation has continuously grown and has spilled over to many fields of inquiry including sociology, psychology, business administration, and public management. The vast and expansive research on innovation spans multiple levels of analysis (individual, team, organization, industry, economy) and probes multiple aspects of this complex phenomenon (antecedents, processes, typologies, attributes, consequences). The breadth of innovation research and diversity of the fields of knowledge it draws from have resulted in many different conceptualizations and measurements of innovation, making even a cursory understanding of the phenomenon increasingly challenging. In response, innovation researchers have focused on probing certain aspects of innovation such as processes (generation, diffusion, adoption, implementation), types (product, process, service, technological, managerial), and consequences (for the firm, industry, community, economy), often at one level of analysis only. This article focuses on managerial innovation, a type of innovation that has neither conceptually nor empirically been examined as widely as the other types, at the firm level of analysis.

Following Schumpeter's (1983: 66) distinction between the introduction of 'a new good . . . or of a new quality of good' and the introduction of 'a new method of production' for producing goods, innovation scholars have investigated product and process innovations as two primary types of technological change central to economic growth and firm competitiveness (Damanpour & Aravind, 2006; Edquist, Hommen, & McKelvey, 2001; Utterback, 1994). The studies of these innovation types, however, have followed a technological imperative postulating that innovation efforts in organizations are mainly through R&D activities. Thus, most theories and models of innovation process and outcome are based on empirical studies of technological innovations in the manufacturing sector. Other types of innovations have not received due attention (Birkinshaw, Hamel, & Mol, 2008; Miles, 2005).[1]

Managerial innovations are new organizational structures, administrative systems, management practices, processes, and techniques that could create value for the organization (Birkinshaw et al., 2008; Kimberly, 1981). Examples of this type of innovation include total quality management (TQM), just-in-time production, quality circle, cost accounting, 360 degree feedback, and divisional (M-form) structure. More attention is increasingly being paid by the business and practitioner press to the crucial role of managerial innovations in developing strategies for growth, facilitating organizational change and renewal, and enabling continuous performance (Birkinshaw & Mol, 2006; BusinessWeek, 2009; Hamel, 2006). This attention is long overdue as a firm's prospect to compete and sustain performance requires continuous innovation – the introduction of streams of different types of innovations over time (Damanpour, Walker, & Avellaneda, 2009; Roberts & Amit,

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2003; Tushman & O'Reilly, 2002). This capability is subject to an organization's ability to employ new management ideas for modifying and improving its structure and processes to enable strategic renewal and organizational change.

In this vein, this study aims to contribute by: (i) providing a better understanding of managerial innovation through a review of its different conceptions; (ii) examining the process of managerial innovation by teasing out the differences between its generation and adoption; and (iii) exploring conditions and behaviours that facilitate the development and use of managerial innovation in organizations. A broader goal of the study is to affirm that managerial innovations matter in the competitiveness and effectiveness of firms, and, similar to technological innovations, they can help generate economic growth (Sanidas, 2005). As such, the study intends to encourage research on the development of models and theories of managerial innovation in organizations to extend and expand the existing models and theories that are mainly drawn from research on technological innovations.

INNOVATION IN ORGANIZATIONS

Innovation has been conceptualized in many different ways. At the organizational level, it has generally been defined as the generation (development) or adoption (use) of new ideas or behaviours (Amabile, 1988; Van de Ven, Angle, & Poole, 2000; Zaltman, Duncan, & Holbek, 1973). The generation of innovation results in an outcome – a product, service, technology, or practice that is at least new to an organizational population. The adoption of innovation results in the implementation of a product, service, technology, or practice new to the adopting organization (Daft, 1978; Damanpour & Wischnevsky, 2006; Klein & Sorra, 1996).

Process of Innovation

Innovation in organizations has been conceived both as a discrete outcome and as a process. The studies of innovation as outcome mainly explore external and internal organizational conditions under which an organization innovates (Damanpour & Schneider, 2006; Hitt, Hoskisson, Johnson, & Moesel, 1996; Kimberly & Evanisko, 1981; Li, Lee, Li, & Liu, 2010). Innovation as a process, on the other hand, explores how the innovation is originated, developed, commercialized, diffused, adopted, or implemented (Klein & Sorra, 1996; Rogers, 1995; Van de Ven et al., 2000). Innovation as process is defined to encompass multiple patterns, stages, or phases (Roberts, 1988; Schroeder, Van de Ven, Scudder, & Polley, 2000), which are broadly grouped into generation and adoption.

The generation and adoption processes differ considerably. The generation process covers all efforts and activities aimed at creating new ideas, getting them to work, and supplying them for transfer to, and use by, other organizations. The phases of innovation generation process include recognition of opportunity,

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research, design, commercial development, marketing, and distribution (Roberts, 1988; Tornatzky & Fleischer, 1990). The adoption process, on the other hand, covers how an organization becomes aware of new ideas, acquires, adapts, and uses them. The phases of innovation adoption include initiation, decision adoption, and implementation (Damanpour & Schneider, 2006; Klein & Sorra, 1996; Zaltman et al., 1973). While innovations can be generated and adopted in the same organization, they can also be generated by one organization, supplied to the market, and adopted and consumed by other organizations (Damanpour & Wischnevsky, 2006; Klein & Sorra, 1996).

Typologies of Innovation

The distinction between innovation types has been attributed to Schumpeter's early work. Schumpeter distinguished between five types of innovation: new products, new methods of production, new markets, new sources of supply, and new ways to organize business (Fagerberg, 2005; Schumpeter, 1983). Most studies of innovation, especially those conducted by economists and technology management researchers, have focused on the first two types making the product–process typology the most widely studied innovation typology. *Product innovations* are usually defined as new products or services introduced to meet an external user need, and *process innovations* are defined as new elements introduced into a firm's production or service operation to produce a product or render a service (Damanpour & Aravind, 2006; Schilling, 2008; Utterback, 1994).

Another popular typology of innovation, especially among organizational sociologists and management researchers, has been the technical–administrative typology (Bantel & Jackson, 1989; Evan, 1966; Kimberly & Evanisko, 1981; Walker, 2008). This distinction relates to a more general distinction between technology and social structure (Evan, 1966). At the firm level, technical and administrative innovations are, respectively, associated with the organizations' technical and social systems (Boonstra & Vink, 1996; Damanpour & Evan, 1984) or technological and administrative cores (Daft, 1978). Technical innovations are directly related to the primary work activity of the organization and produce changes mainly in its operating systems; administrative innovations are indirectly related to the organization's primary work activity and affect mainly its management systems (Damanpour & Evan, 1984).

Edquist et al. (2001) and Meeus and Edquist (2006) juxtaposed the product–process and technical–administrative typologies and offered a taxonomy that distinguishes between two types of product innovations ('in goods' and 'in services') and two types of process innovations ('technological' and 'organizational'). According to these authors, product innovations include both 'material product innovations in manufacturing and the primary sectors' and intangible services that 'are often consumed simultaneously to their production' and 'satisfy non-physical

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needs' of the users (Edquist et al., 2001: 12). Process innovations are new ways of producing goods and services, and include both technological (technical) and organizational (administrative) innovations. Technological process innovations are 'units of real capital (material goods) which have been improved through technical change' and organizational process innovations are new ways of structuring and organizing work (Edquist et al., 2001: 14). Edquist and colleagues' organizational process innovation relates to managerial innovations as examined in this article.

MANAGERIAL INNOVATION: CONCEPTIONS

Managerial innovations have been referred to as organizational, administrative, and management innovations. The terminology notwithstanding, they have usually been conceptualized in contrast to product/service and technological process innovations. Below we explain how the conceptualization of managerial innovations has evolved in different fields of study.

Organizational Innovations

This term is primarily employed by economists to separate managerial from technological innovations (Chandler, 1962: Lam, 2005; Sanidas, 2005). For instance, Chandler (1962) distinguishes new products and processes from new ways of internal organization and Sanidas (2005) distinguishes embodied technology from disembodied technology.

Some economists look further back and attribute organizational innovation to Schumpeter, namely, his fifth innovation type – 'new way of organizing'. Schumpeter (1983: 66) defines this type as: 'The carrying out of the new organization of any industry, like the creation of a monopoly position . . . or the breaking up of a monopoly position'. However, Schumpeter's definition is in the context of economic development and change, a higher order system than organizational growth and change. Furthermore, in Schumpeter's early work innovation in economic system concerns specifically radical, 'discontinuous change' due to the occurrence of 'productive revolutions' driven by 'new firms' through a technology push (see Schumpeter, 1983: 55–66). As such, 'new way of organizing' portrays Schumpeter's 'entrepreneurial' perspectives of innovation, where innovation is the essence of new, independent companies creating new industries or acting as major agents of change in established industries (Barras, 1990). This view of innovation, the so-called Schumpeter Mark I, focuses primarily on the importance of entrepreneurial start-ups that help create a new industry, sector, or at least product class, affecting economic growth.

In contrast to the entrepreneurial perspective, Schumpeter's 'corporate' perspective of innovation (Mark II) proposes that incumbent, established firms are the primary vehicles for innovation as they possess scientific knowledge and

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management expertise, production means and other complementary assets, better access to capital, and often some degree of monopoly power, which increase the likelihood of investing in innovation (Barras, 1990; Damanpour & Wischnevsky, 2006). Whereas Schumpeter Mark I emphasizes 'creative destruction', in Schumpeter Mark II 'creative accumulation' has the central role (Sanidas, 2005: 64).

Williamson (1975: 177) characterizes the entrepreneurial and corporate perspectives as the 'conventional dichotomy', depicting two competing hypotheses. He further argues that since innovation could both create and destroy monopoly, organizational innovation includes not only changes in organizational form (e.g., from unitary or U-form to multidivisional or M-form), but also in organizational systems and processes such as cost accounting, work scheduling, collective bargaining, personnel, and so on (Williamson, 1975: 192–196). In the same vein, Edquist et al. (2001: 15) define organizational innovations as 'new ways to organize business activities such as production or R&D' and as innovations that 'have to do with the coordination of human resources'. Organizational innovations 'have no technological elements as such' and are not 'usually based on formal R&D activities' (Edquist et al., 2001: 15–16).

In summary, the concept of organizational innovation has evolved from Schumpeter's early work. It is not confined to the 'reorganization of entire industries' to bring about 'technological revolution' (Fagerberg, 2005). It includes changes in internal organizational structure and procedures that facilitate organizational change and growth. These changes could be due to the introduction of both radical and incremental innovations. More recent conceptions of organizational innovation based on Schumpeter's corporate perspective resemble managerial innovations as conceived in this article.

Administrative Innovations

Administrative innovations are usually distinguished from product/service and technical innovations. In contrast to product/service innovations, that are introduced to address customer/client needs, and technical innovations, that are introduced to produce changes in products and production systems, administrative innovations are oriented toward the efficiency and effectiveness of firms' management processes and administrative systems (Damanpour & Evan, 1984; Kimberly & Evanisko, 1981).

Evan (1966: 51) defined technical innovation as 'an idea for a new product, process, or service' and administrative innovation as 'an idea for a new policy pertaining to the recruitment of personnel, the allocation of resources, the structuring of tasks, of authority, of rewards'. Kimberly and Evanisko (1981: 692) studied innovations in hospitals and defined technical innovations as those in medical technology that 'are directly related to the diagnosis and treatment of

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disease', and administrative innovations as those in the information processing and systems that are only indirectly related to the hospital's medical activities and 'are more immediately related to its management'. Bantel and Jackson (1989) viewed administrative innovations as those that improve managerial activities and decision making, and Kimberly (1981) viewed them as a means of changing the processes of decision making. Using the term managerial innovation, Kimberly (1981: 86) defined this innovation type as 'any program, product or technique which represents a significant departure from the state of the art of management at the time it first appears and which affects the nature, location, quality, or quantity of information that is available in the decision-making process'.

Management Innovations

The term management innovation has recently gained currency in the organization management literature, overtaking the terms organizational and administrative. Hamel (2006: 75–76) defined management innovation as departure from traditional management principles, processes, and practices that 'alters the way the work of management is performed. Put simply, management innovation changes how managers do what they do'. As innovations in organizational form, practices, processes, or techniques, management innovations constitute 'the rules and routines by which work gets done inside organizations' (Birkinshaw et al., 2008: 828).

Similar to Kimberly's (1981) conceptualization, these definitions of management innovation anchor on 'what managers are and do'. They focus on the generation of managerial innovation and define innovation as new to the state of the art or management field at large (industry or organizational population level). More recently, management innovation has also been defined as novel changes new to the focal organization regardless of when it has been adopted in other organizations (organizational level). For example, Vaccaro, Jansen, Van Den Bosch, and Volberda (2010) define management innovation as new practices, processes, and structures that change the nature of managerial work at the firm level. Walker, Damanpour, and Devece (2011) define management innovation as new approaches to devise strategy and structure in the organization, modify the organization's management processes, and motivate and reward its employees.

Table 1 illustrates conceptualizations and examples of managerial innovations in multiple fields. While different terms such as organizational, administrative, and management innovations have been used, their definitions overlap significantly as this innovation type is conceptualized to be distinct from product, service, and technological process innovations. Therefore, for parsimony, we use the term managerial innovation to represent the existing terms and define it as *new approaches in knowledge for performing the work of management and new processes that produce changes in the*

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Table 1. Definition of managerial innovation in selected studies

Study	*Term*	*Definition*	*Example*
Williamson (1975)	OI	Pertains to the changes in organizational forms and refinements in organizational procedures.	Multidivisionalization, vertical integration, cost accounting, work scheduling, collective bargaining.
Daft (1978)	AI	Pertains to the policies of recruitment, allocation of resources, and the structuring of tasks, authority and reward and is related to the administrative core of the organization.	Scheduling of students, structure of high school organizations, location of classes, and programme budgeting.
Kimberly (1981)	MI†	Any program, product or technique which represents a significant departure from the state of the art of management at the time it first appears and which affects the nature, location, quality, or quantity of information that is available in the decision-making process.	Program Planning and Budgeting Systems (PPBS)
Damanpour and Evan (1984)	AI	Innovations that occur in the social system of an organization including rules, roles, procedures, and structures related to the communication and exchange among people and between the environment and people.	Implementation of a new structure, way to recruit personnel, allocate resources, and structure tasks, authority, and rewards.
Gosselin (1997)	AI	Innovation that lead to new administrative procedures, policies, and organizational structures.	Activity-Based Costing (ABC)
Ravichandran (2000)	AI	Embody the adoption of administrative programs, processes, or techniques new to the adopting organization.	Total Quality Management (TQM)
Edquist et al. (2001)	OI	New ways to organize business activities such as production or R&D, and innovations that have to do with the organization of human resources.	Just-in-time production, lean production, and TQM.

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Sanidas (2005)	OI	Innovations that refer to disembodied technology such as unpatented know-how, property rights, and management and organization. They are new, novel organizational entities, which can be an industry structure, a firm structure, a production form or process, or an institution in general.	Scientific management (Taylorism), assembly line operation (Fordism), multidivsionalization, Just-in-time systems, continuous improvements (Kaizen), flexible production systems, and quality control systems.
Hamel (2006)	MI	A marked departure from traditional management principles, processes, and practices or a departure from customary organizational forms that significantly alters the way the work of management is performed.	Employee-driven problem solving, formalized strategic analysis, leadership development, large-scale project management, brand management, scientific management (time and motion studies).
Birkinshaw et al. (2008)	MI	The generation and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals.	Toyota production system, spaghetti organization, cellular manufacturing, modern assembly line, balanced scorecard, quality of work life.
Tanninen, Jantunen, and Saksa (2008)	AI	Innovations that are related to management activities and are connected with the organization's social system.	TQM.
Vaccaro et al. (2010)	MI	Implementation of a management practice, process, or structure that is new to the adopting organization.	Management systems, remuneration policy, objective setting, organization of work, project management.

Notes:
[†]Kimberly (1981) used the term 'managerial innovation'.
AI, administrative innovation; MI, management innovation; OI, organizational innovation.

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organization's strategy, structure, administrative procedures, and systems. Their enactment drives or enables organizational change, facilitating the organization's renewal, adaptation, and effectiveness.

PROCESS OF MANAGERIAL INNOVATION

While conceptual models of the process of technical and product innovations have long been devised (Saren, 1984), those for the process of managerial innovation are rare. In this section we discuss the generation and adoption processes of managerial innovation and compare and contrast them with similar processes of technical and product innovations.

Generation of Managerial Innovation

Roberts (1988: 13) defined innovation as 'invention plus exploitation', where the invention process results in a discovery and gets it to work (a new technology) and the exploitation process develops and disseminates it commercially (a new product or process). Accordingly, the generation of technological innovation includes phases such as: recognition of opportunity, idea formulation, problem solving, prototype solution, commercial development, and technology utilization and/or diffusion (Roberts, 1988: 12). The generation of product innovations includes similar phases. For instance, Schilling (2008: 236) lists the commonly cited phases of new product development process as: opportunity identification, concept development, product design, process design, and commercial production.

The process of generation of managerial innovation, however, has not been examined specifically until recently. Using language similar to the process of technological innovation, Birkinshaw and Mol (2006) were first to identify five phases for the generation of managerial innovations: (i) *dissatisfaction with status quo*, mainly from the inside of the company; (ii) *inspiration*, usually from the outside; (iii) *invention*, triggered by a combination of dissatisfaction and inspiration; (iv) *validation*, from both inside and outside; and (v) *diffusion* to other organizations. The internal and external validation is the main point of departure of this process from that of technological innovation. While the internal validation or acceptance is important for internal use because managerial innovation is not 'easily codified, requires the willing participation of many people to be effective and often does not deliver results until several years after implementation', the external validation by independent observers (academics, consulting firms, industry associations, media) is important for the diffusion of managerial innovation to other organizations (Birkinshaw & Mol, 2006: 86).

Birkinshaw et al. (2008) proposed a four-phase managerial innovation process: '(1) *motivation* is concerned with the facilitating factors and precipitating circumstances that lead individuals to consider developing their own management

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innovation; (2) *invention* is an initial act of experimentation out of which a new hypothetical management practice emerges; (3) *implementation* is the technical process of establishing the value of the new management innovation in . . . a real setting; and (4) *theorizing and labeling* is a social process whereby individuals inside and outside of the organization make sense of and validate the management innovation to build its legitimacy' (Birkinshaw et al., 2008: 831).

It should be noted that Birkinshaw et al. (2008: 829) define innovation as the 'generation' and 'implementation' of management practices 'new to the state of the art' to further organizational goals. That is, these authors' conception relates to the situation where an innovation is both produced and consumed in the same organization. However, as stated earlier, managerial innovations that gain currency are those that diffuse beyond the generating organization and are adopted by other organizations. In this vein, Birkinshaw et al.'s (2008) four-phase process can resemble the generation and piloting of managerial innovation before its diffusion within the population. For example, a management consulting firm could develop a new organizational form or management system (motivation and invention), conduct experiments in a couple of client organizations (implementation), and market it to other organizations in the extant population (theorizing and labelling). That is, even though a managerial innovation can be developed, tested, and used in one firm, its diffusion beyond the focal firm is usually facilitated by another entity – an agent, a spin-off, or a consulting firm. The Scanlon plan, Planning-Programming-Budgeting System (PPBS), matrix structure, Six Sigma, GE (General Electric) work-out, and other management tools and techniques have been theorized and labelled out of the immediate context primarily by consulting firms (external agents) and have subsequently been diffused to other organizations for adoption or use.

Adoption of Managerial Innovation

The generation process develops a managerial innovation that is new at least to a population of organizations. Other organizations in the population may adopt this innovation for use by acquiring it from the organization that has pioneered it or by imitating it on their own. For the user organization, the adoption of innovation and organizational change are closely linked; the primary distinction between innovation and change is the 'extent of newness' of the change to the adopting organization (Slappendel, 1996). Change reflects differences in organizational conditions or behaviours over time. These differences could be a consequence of the adoption of innovation. The process of innovation adoption is thus viewed as a special case of the process of organizational change (Knight, 1967; Wischnevsky & Damanpour, 2008).

Phases of the process of innovation adoption exemplify the interrelatedness of organizational change and innovation. Hage and Aiken (1970) proposed

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a four-phase adoption process: evaluation, initiation, implementation, and routinization.[2] Zaltman et al. (1973) offered a five-phase process: knowledge awareness, attitude formation (adoption) decision, initial implementation, and continued-sustained implementation. Klein and Sorra's (1996) adoption process also has five phases: awareness, selection, adoption (decision), implementation, and routinization. These phases are applicable to both technical and managerial innovations, although they could occur in different parts of the organization. For instance, the dual-core model of organizational innovation posits that technical innovations are mainly initiated in the operating core and pursue a bottom-up process for adoption decision and then a top-down process for implementation (Daft, 1978). Managerial innovations, on the other hand, are mainly initiated in the administrative core and follow a top-down process for implementation (Daft, 1978).

TYPES OF MANAGERIAL INNOVATION

As stated above, two primary types of technological innovation (product and process) have been widely recognized and researched. An established typology of managerial innovation has not yet emerged, however. We entertain a few possibilities.

Strategy and Structure Innovations

A possible distinction could be between innovations in an organization's strategy vs. its structure. In his seminal work, Chandler (1962) distinguished between strategy and structure and proposed that the selection of a structure that is compatible with the strategy enables the organization to realize its goals. Strategy regards the choice of a firm's long-term goals and of courses of action and resource allocation for the achievement of those goals (Chandler, 1962). The selection of a strategy defines the firm's domain of activity, the range of its products, services, and markets. Structure regards organizational form, the way in which the organization divides its activities into parts and then achieves coordination among them (Mintzberg, 1979). Research has generally supported Chandler's (1962) hypothesis that changes in structure follow changes in strategy. For example, in a longitudinal study of managerial changes in U.S. bank holding companies, Wischnevsky and Damanpour (2008) found that radical structural changes follow radical strategic changes, but not the reverse. Accordingly, a distinction between innovations in strategy and in structure could advance an understanding of the role of managerial innovation in organizational conduct and outcome.

Innovations in Forms vs. in Procedures

In the economic literature, studies of organizational innovation have centred on changes in organizational form, mainly from a single product, multifunctional

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structure (U-form) to a decentralized, multidivisional (along products, customers, or locations) structure (M-form). This line of research was extended by adding changes in organizational procedures and practices (Cole, 1968; Williamson, 1975), enabling a distinction between two types of managerial innovations: innovations in forms and in processes. Hoffman (1999) refers to these types as 'structural' (new positions or units) and 'system' (new planning and control systems) innovations, respectively. More generally, from an economic perspective, innovations in organizational forms and procedures resemble the distinction between 'labour-saving' and 'capital saving' innovations (Edquist et al., 2001; Nyholm, 1995). Labour-saving organizational process innovations, similar to technological process innovations, increase the productivity of labour in the process of production, whereas capital-saving innovations reduce the amount of capital needed in the work-in-progress (Edquist et al., 2001).[3] Whereas labour-saving innovations introduce changes in organizational forms (e.g., hierarchical to horizontal structure), capital-saving innovations (e.g., just-in-time inventory, lean production) introduce changes in organizational procedures (Nyholm, 1995).

Information Technologies and Administrative Dimensions

Another possible distinction could be derived from the increasing role of information technologies (IT) in organizational activities especially in service organizations.[4] The advancement of information and communication technologies has made IT an integral part of changes in both technological and organizational processes. A typology of managerial innovation can thus be based on the extent to which IT is embodied in or enables the innovation. In this regard, for instance, innovations in organizational procedures may depend more on IT than those in organizational form. Another possibility is a distinction between IT and non-IT components of managerial innovation. For example, Wang (2010) argues that because of increasing penetration of IT in administrative practices, innovations that have intensive IT components should be identified from those that have intensive administrative components. Similarly, Walker et al. (2011) operationalize managerial innovation as a two-dimensional construct: the administrative dimension representing the new practices to alter the organization's managerial processes and systems; and the IT dimension reflecting the use of new knowledge management and office automation to advance efficiency of managerial processes and systems.

Innovation Radicalness

Chandler (1962: 299) distinguished between building of the initial structures ('creative innovation') and responding to new administrative needs ('adaptive response'). This distinction resembles the typologies of innovations based on the

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extent of innovation radicalness. In every field of study, radicalness has been considered as an important attribute of innovation and researchers have developed typologies from it. Radical innovations are defined as those that are ground breaking, disruptive, creating discontinuity, and changing the status quo. Incremental innovations are defined as those that are adaptive, rely on current knowledge and areas of expertise, and refine and improve the existing conditions. At the firm level, radical and incremental innovations are often distinguished by the extent to which the innovation causes fundamental changes in the outputs or internal activities of the organization and results in a clear departure from the status quo.

After March's (1991) distinction between 'exploration' and 'exploitation' in organizational learning, innovation scholars have distinguished between exploratory and exploitative innovations. These innovations are the results of exploration and exploitation for a firm's innovative outcome (Bierly, Damanpour, & Santoro, 2009; Jansen, Van Den Bosch, & Volberda, 2006; Smith & Tushman, 2005). Whereas exploratory innovations help firms enter a new product-market domain, exploitative innovations help firms improve their existing product-market positions (He & Wong, 2004). Entering a new product-market position, compared to improving the existing positions, requires a more radical departure from the established norms and routines (Bierly et al., 2009).

The concepts of exploration and exploitation have been applied mainly to technological and product innovations. Whereas different interpretations of these concepts have caused ambiguity and inconsistency in their application (for a review see Li, Vanhaverbeke, & Schoenmakers, 2008), innovative outcomes of exploratory and exploitative search or learning correspond, respectively, with radical and incremental innovations as the 'degree of newness' is the primary criterion that distinguishes them. Thus, they can be applied to distinguish between two types of managerial innovations – those that require an exploratory search for more in-depth learning to produce more novel management tools and techniques vs. those that need an exploitative search based on the existing ideas to refine management processes and systems.[5]

ANTECEDENTS OF MANAGERIAL INNOVATIONS

Innovation is a multidimensional construct. Prior research suggests that the introduction of innovation in organizations is influenced by environmental or external factors, characteristics of the organization and organizational leaders, and attributes of the innovation (Damanpour & Schneider, 2009; Kimberly & Evanisko, 1981; Zahra, Neubaum, & Huse, 2000). In this section we briefly review a selected sample of empirical studies of the antecedents of managerial innovation to provide a sense of the antecedents examined, study context, and the results obtained.

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Managerial vs. Technological Innovations

Some studies have compared the differential effects of antecedents on managerial vs. technological innovations. Kimberly and Evanisko (1981) examined the influence of individual, organizational, and contextual factors on the adoption of innovations in hospitals and found that they influenced the two types of innovation differently. For example, administrator's education and cosmopolitanism and organizational size were positively associated with managerial innovations, but administrator's tenure and education, organizational size, and community size were positively related to technological innovations. Administrator's committee participation and centralization of decision making negatively affected technological innovations, but were not associated with managerial innovations.

Zahra et al. (2000) studied corporate entrepreneurship (the sum of a company's venturing and innovation activities) in medium sized firms and found that while some variables (executive ownership, pressure-resistant institutions, CEO–Chair separation, and outsider's ratio) influenced both innovation types similarly, others did not. For instance, board size and organizational size were positively associated with managerial but not with technological innovations. On the other hand, technological opportunity and outsider directors' stock were positively related to technological innovations only.

Initiation vs. Implementation of Managerial Innovations

Duncan (1976) and Zaltman et al. (1973) proposed an ambidextrous structure for the initiation and implementation of innovation. These authors theorized that while initiation is facilitated by higher complexity, and lower formalization and centralization, implementation is facilitated by lower complexity, and higher formalization and centralization (Duncan, 1976). That is, the initiation of innovation is facilitated by an organic structure and the implementation by a mechanistic structure (Burns & Stalker, 1961).

However, the findings of the empirical studies on phases of the adoption of managerial innovation are mixed. For instance, Zmud (1982) studied the initiation, adoption, and implementation of modern software practices (MSP) and found that organizational size and professionalism do not affect initiation or implementation of MSP but that organizational size negatively affects the adoption of MSP. The study further found that centralization positively affects initiation, but not adoption or implementation of innovation. Gosselin (1997) studied the adoption of activity-based costing (ABC) in strategic business units and found that competitive strategy affected the adoption decision, but formalization and centralization were associated with the implementation of ABC. Damanpour and Schneider (2006) distinguished among initiation, adoption decision, and implementation and examined environmental, organizational, and managerial antecedents of 10 organizational

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practices associated with the New Public Management (NPM) movement. These authors found that only 4 of 16 antecedents (organizational complexity, economic health, managers' tenure in position, and trade unions) affected the three phases of adoption differently. More generally, the study found that organizational characteristics and top managers' attitudes toward innovation have a stronger influence on the adoption of managerial innovations than environmental factors and top managers' demographic characteristics.

Attributes of Managerial Innovations

Some studies have highlighted the role of attributes of managerial innovation on its adoption. For example, Hashem and Tann (2007) studied the adoption of ISO standards in the Egyptian context and found that whereas perceived 'relative advantage' and 'compatibility' of the innovation with existing quality systems positively influence the adoption of ISO standards, 'complexity' of the innovation has a negative effect. Schneider (2007) studied new administrative practices associated with NPM and found that 'relative advantage' of practices is positively associated with their adoption. Damanpour and Schneider (2009) examined the influence of innovation cost, complexity, and impact (on performance) on the adoption of 25 innovations in public organizations and found that innovation cost, contrary to expectation, had a positive effect, innovation complexity did not have a significant effect, and innovation impact had a positive effect. More importantly, the study found that innovation attributes increased the predictability of innovation adoption beyond the influence of environmental and organizational factors.

Summary of the Effects of Antecedents

Our illustrative review suggests several inclinations in the empirical studies of determinants of managerial innovation. First, most studies examined the adoption rather than the generation of managerial innovations. The generation of innovation is usually slower and takes more time than adoption, and measurement of adoption is easier as studies often use a dichotomous adoption-decision. Also, compared to technical innovations, the process of generation of managerial innovation is not typically well-managed and is left to occur in an ad hoc fashion (Birkinshaw & Mol, 2006), making its empirical study more difficult.

Second, among the four groups of the antecedents, organizational and managers' characteristics have been examined more frequently than environmental and innovation characteristics. In regard to organizational factors, Daft's (1978) theory, that the adoption of managerial innovation follows a top-down process and is facilitated by a mechanistic structure, is substantiated by other studies (Gosselin, 1997; Hashem & Tann, 2007). Among managerial characteristics,

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similar to technical innovations, favourable attitude toward change positively affects managerial innovations. However, factors like managers' education (Kimberly & Evanisko, 1981; Young, Charns, & Shortell, 2001) and tenure (Damanpour & Schneider, 2006; Pil & MacDuffie, 1996) are found to be more important predictors of managerial than technical innovations. These findings support Hamel's (2006) assertion that managerial innovations involve changes in traditional management processes and practices that directly affect the work of managers.

Third, some external factors seem to play important roles. Participation in external organizational networks and communication with prior adopters (Burns & Wholey, 1993; Damanpour & Schneider, 2006; Young et al., 2001) provide firms with information about innovations adopted by other firms and the potential benefits of such innovations. Earlier adopters are more likely to seek efficiency gains whereas later adopters seek legitimacy when adopting managerial innovations (Tolbert & Zucker, 1983; Westphal, Gulati, & Shortell, 1997). Since technological and product innovations are more tangible and are often adopted for a specific purpose (e.g., improving the efficiency of processes or outcomes), they can more easily be legitimized than managerial innovations that are more intangible and whose consequences are less observable.

Table 2 summarizes the findings of the antecedents that have been included in two or more studies in our sample. However, our sample is a convenient sample for illustrating the flavour of previous research. More conclusive remarks should await a systematic (preferably quantitative) review and integration of the findings of the empirical studies.

DISCUSSION AND IMPLICATIONS

As is prevalent in the studies of innovation in organizations, we adopted a rational perspective and assumed that managerial innovation, similar to the other innovation types, is a means toward a larger end – it is introduced to maintain or improve organizational performance or effectiveness. This view of innovation aligns with the perspective of organizations as open systems, where performance is the ability of an organization to cope with all systematic processes relative to its goal-seeking behaviour and carry out its organization-adapting and organization-maintaining functions effectively (Damanpour et al., 2009; Mintzberg, 1979; Scott, 1992). However, other important perspectives in studying managerial innovation including institutional and network perspective (Staw & Epstein, 2000; Westphal et al., 1997), organizational cultural perspective (Birkinshaw et al., 2008; Love & Cebon, 2008), and fad and fashion perspective (Abrahamson, 1991, 1996; Strang & Macy, 2001) exist. These perspectives influence the direction of future research on managerial innovation. In particular, whether or not new management techniques and practices are innovations or fads, and whether or not they can contribute to

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Table 2. Theory and results for commonly cited antecedents of managerial innovation†

Antecedent	*Expected relationship and reasons for the expectation*	*Examples of empirical studies*	*Summary of findings*
Formalization	*Positive* – Managerial innovations are generated at the administrative core and follow a top-down process of implementation (Daft, 1978); therefore, formalization of policies, procedures, and activities facilitate them.	Zmud (1982); Gosselin (1997); Hashem and Tann (2007)	The first study found a non-significant relationship and the last two studies found a positive relationship.
Centralization	*Positive* – Also according to Daft's (1978) dual-core model of innovation, similar to formalization, centralization of decision making facilitates managerial innovations.	Kimberly and Evanisko (1981); Zmud (1982); Gosselin (1997); Hashem and Tann (2007)	The first study found a non-significant relationship, the second study a positive relationship with the initiation only, and the last two studies a positive relationship.
Organizational complexity	*Negative* – The dual-core model argues that complexity and bureaucratic control oppositely affect innovation. More complex the organization, less bureaucratic control can be exercised; thus, fewer structural and process changes can be introduced.	Zmud (1982); Damanpour and Schneider (2006)	The first study found a negative and the second study found a positive relationship with the initiation of innovation.
Organizational size	*Positive* – Large organizations are more likely to innovate because they have the economies of scope to spread the risk of failure and absorb the costs of innovation, ability to establish and maintain scientific facilities, resources to hire professional and skilled workers, and ability to invest in innovation and market it (Camison-Zornoza, Lapiedra-Alcami, Segarra-Cipres, & Boronat-Navarro, 2004; Damanpour, 2010).	Kimberly and Evanisko (1981); Zmud (1982); Zahra et al. (2000); Damanpour and Schneider (2006)	The second study found a negative relationship and the other studies found a positive relationship.

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Managers' tenure	*Positive* – Experienced managers have skills for integrating the innovation into ongoing organizational processes. Managerial experience also provides legitimacy and knowledge of how to get things done and obtain desired outcomes (Damanpour & Schneider, 2006; Kimberly & Evanisko, 1981).	Kimberly and Evanisko (1981); Pil and MacDuffie (1996); Young et al. (2001); Damanpour and Schneider (2006)	The first and third studies found a non-significant relationship, and the other two studies found a positive relationship.
Managers' education	*Positive* – More highly educated managers are more likely to engage in boundary spanning activities, possess greater ability to handle the complex change efforts, generate creative solutions to complex problems, and inspire receptivity to new ideas (Bantel & Jackson, 1989; Damanpour & Schneider, 2006; Young et al., 2001).	Kimberly and Evanisko (1981); Young et al. (2001); Damanpour and Schneider (2006)	The first two studies found a positive relationship and the last one found a non-significant relationship.
Market competition	*Positive* – Competition creates strong incentives to acquire knowledge and put it to productive use. Insulation from competition, on the other hand, can reduce pressure to search for new and better solutions, cause bureaucratic inefficiencies, and breed complacency (Damanpour, 2010; Scherer, 1980).	Kimberly and Evanisko (1981); Hashem & Tann (2007)	Both studies found a positive relationship.

Note:

†Antecedents were listed as commonly cited if they were examined in two or more studies included in our illustrative review.

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organizational performance (as technological and product innovations are perceived to do), would influence researchers' motivations to study this type of innovation. Below, we first address the concerns raised by the fashion perspective of managerial innovation and then discuss the relationship between managerial innovation and organizational performance.

Managerial Innovation and Management Fashion

Abrahamson (1991, 1996) introduced the fashion perspective in contrast to the rational perspective on the diffusion of managerial innovations. He argued that the rational perspective assumes that 'organizations independently and rationally adopt technically efficient innovations'; hence, it 'cannot explain either the diffusion of technically inefficient innovations or the rejection of efficient ones' (Abrahamson, 1991: 606). Fad and fashion perspectives, on the other hand, assume that organizations are 'uncertain about both their goals and the efficiency of innovations' and are influenced by other organizations in their population in adopting managerial innovations (Abrahamson, 1991: 606–608). Accordingly, Staw and Epstein (2000) used informational reports (popular press citations) for measuring the adoption of three management techniques (quality, empowerment, and teams), as well as a measure of the implementation of TQM, and found that firms associated with the three techniques and the implementation of TQM did not have higher economic performance (returns on asset, equity, and sales) but 'were more admired, perceived to be more innovative, and rated higher in management quality' (Staw & Epstein, 2000: 523).

Organizations are certainly affected by institutional factors that relate to demands for conformity to rules and norms of their fields in order to obtain legitimacy and resources (Ashworth, Boyne, & Delbridge, 2009; Oliver, 1991). Institutional forces influence organizational leaders' decisions, including those related to the adoption of innovations. However, whether or not institutional forces influence the generation and adoption of innovation more than other internal and external organizational forces is unclear. More specifically to the focus of this article, whether or not institutional forces affect the adoption decision of managerial innovations more than that of technological or product innovation, or any other types of managerial decision, is yet to be explored. Important comparative research on the effects of environmental and institutional pressures, as well the differences between the influences of internal and external pressures and inducements, are needed to show such differences, if any.

Organizational change is driven not only by pursuit of legitimacy but also by rational choice. Indeed, distinctions between conformity and customization (Westphal et al., 1997), compliance and convergence (Ashworth et al., 2009), and conformity and distinctiveness (Love & Cebon, 2008) point out tensions that exist in balancing the pursuit of legitimacy and technical rationality in the adoption of

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all types of innovation. In the management fashion perspective, this balance has been tilted toward pursuit of legitimacy for the adoption of new management practices, perhaps because they are perceived to be relatively less advantageous, less measurable, more complex, and intangible than technological or product innovations. When the balance between legitimacy and technical rationality is maintained, the interpretations may differ. For example, in a longitudinal study of the adoption of Manufacturing Best Practices, Love and Cebon (2008) found that firms' internal meaning systems moderate the role of institutional pressure and affect the adoption of institutionally established and accepted practices.

Assuming that the likelihood of rejecting an efficient managerial innovation is the same as that of an inefficient one, unlike fashion perspective we propose that the likelihood of adopting a technically inefficient managerial innovation cannot be more than that of an efficient one for several reasons. First, managerial innovations vary through the diffusion process, allowing a transition from adoption driven by technical rationality to adoption driven by the innovation's legitimacy (Love & Cebon, 2008: 241), and vice versa. David and Strang (2006) observed that over time multiple transitions had occurred in the diffusion of TQM. As Ansari, Fiss, and Zajac (2010) argue, rational choice and social conformity are poles on a continuum and both can explain the diffusion of a managerial innovation in different contexts or conditions.

Second, when a managerial innovation's adoption increases within the organizational population, and it is modified and adapted in more situations, information about the innovation becomes more readily available. Additional information enables new adopters to evaluate more accurately the positive or negative impact of the innovation, which, in turn, would reduce the likelihood of adopting a technically inefficient innovation. Third, organizations are not passive systems – external and internal control mechanisms govern their actions. Therefore, managers cannot continue adopting inefficient innovations to merely gain reputation without repercussions.

Finally, empirical support for the management fashion perspective is provided by studies of the diffusion of innovations (Abrahamson & Fairchild, 1999; Staw & Epstein, 2000). The findings of innovation diffusion research show a Bell-shaped (normal) curve, or an S-shaped curve on a cumulative basis, for the diffusion of an innovation, whether a product, process, technical, or managerial, among members of a social system (Rogers, 1995). The diffusion curves are innovation-specific as the level of analysis of diffusion studies is the innovation, not the organization. The level of analysis in the studies of innovation in organizations is the organization, not the innovation. Organizations continually adopt innovations over time; hence, within a time interval an organization usually adopts several innovations of different types, and even multiple innovations of the same type. Therefore, except when the organization is small and the innovation is radical, empirically teasing out institutional from internal conditions that affect the adoption of an innovation

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(managerial or any other type) and evaluating its unique performance consequences is difficult. New research should address these issues to substantiate motivation for innovation adoption in organizations.

Consequences of Managerial Innovation

Innovation is risky and its success cannot be guaranteed. Rogers (1995) points out the difficulty of predicting innovation consequences because they can be the result of desirable and undesirable, direct and indirect, and anticipated and unanticipated outcomes. Managers' desire to fill performance gaps to facilitate growth often lead to viewing innovation based on its direct, desirable, and anticipated outcomes (Rogers, 1995; Wischnevsky & Damanpour, 2008). This positive view of innovation is referred to as 'pro-innovation bias', which can apply to innovations of any type whether research is grounded on a rational or fashion perspective. In general, a distinction between technically efficient and inefficient innovations at the time of adoption is difficult, especially when the innovation is in the early phases of its diffusion in the population. Performance consequences of an innovation cannot be truly realized and assessed before its sustained implementation (Klein & Sorra, 1996).

For economists, consequences of innovations are often assessed in terms of their contribution to outcome variables such as growth in real output, productivity, and employment (Sanidas, 2005). Whereas many economists have considered managerial innovation both economically and socially important (see Sanidas, 2005), and some have found that it has a positive effect on productivity and employment (Edquist et al., 2001; Nyholm, 1995), few have explored its effect on firm performance. Innovation scholars have also pointed out the importance of managerial innovation for organizational performance and growth, yet have not conducted adequate empirical studies to explain this relationship fully. Tidd (2001) argues that establishing a strong empirical relationship between innovation and performance is difficult because of methodological shortcomings (e.g., measurement of constructs) and technological and market contingencies that would make the impact of innovation unpredictable. These shortcomings are exacerbated for managerial innovation because they are not quantifiable.

Technological innovations are often measured by patent, R&D expenditure, and new product launch (Tidd, 2001), none suitable for the measurement of managerial innovations. Managerial innovations are difficult to patent, and even if patented, such patents cannot be properly enforced because they can be easily imitated by variants around the patent (Williamson, 1975). Moreover, the performance significance of a managerial innovation, even a major organizational restructuring, is hard to assess. 'Expressed in transaction cost terms, the problem is that opportunistic structural changes cannot easily be distinguished from the fundamental ones because of information impactedness and bounded rationality'

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(Williamson, 1975: 193). Difficulty in recognition of a managerial innovation that will be fully implemented from one that is introduced merely for an announcement effect can be a likely reason for labelling new management techniques and practices, but not new technological procedures and systems, as fads or fashions. This could also be a reason for attributing their adoption for gaining external reputation and legitimacy rather than for achieving organizational growth and economic performance.

Compositions of Innovations and Organizational Performance

The generation and adoption of innovation in organizations is a continuous process. Therefore, an assessment of the true impact of innovation on performance requires longitudinal research on the introduction of innovations of different types. As such, examining the influence of managerial innovations on economic performance of organizations without accounting for the influence of other types of innovation that are concurrently introduced may not accurately reflect consequences of managerial innovations.

The importance of both technological and managerial innovations and the need for their coexistence and co-evolution for firm performance and economic growth have been noted in the economic literature (Sanidas, 2005). For example, Nelson (1996: 118) states that 'new ways of organization' are required to guide and support technological advances to enable firms to profit from them. According to Lazonick (1991: 229, cited in Sanidas, 2005: 51–52), 'The innovative organization enhances its value-creating capabilities organizationally by unbounding its cognitive competence and by transforming the behaviour of its participants, and technologically by committing itself to the development and utilization of organization specific assets'. However, despite positing that technical innovations by themselves are not sufficient for firm performance and economic growth, the relationships between technical and managerial innovations have not been scrutinized in the economic literature (Sanidas, 2005).

Organization management scholars have studied the dynamics of innovation types. For instance, the socio-technical system theory proposed that the relationship between the technical and social systems of an organization is not strictly a one-to-one relationship (Trist & Murray, 1993). The two systems interact continuously and are inclined toward a dynamic equilibrium in relation to the external environment (Boonstra & Vink, 1996). Any change in one system sets certain constraints and requirements, and necessitates a corresponding change in the other system in order to produce positive outcomes. For sustained performance, therefore, changing the technical system by introducing technical innovations, or changing the social system by introducing managerial innovation, is not optimal. A balanced introduction of both innovation types would be necessary (Boonstra & Vink, 1996; Damanpour & Evan, 1984).

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The complementary role of innovations in organizational subsystems is also studied by strategy scholars using the concepts of combinative capabilities and internal dynamic capabilities. These concepts imply that innovating across the organization would ensure that the organization renew its ability to build, reconfigure, and integrate internal and external competencies to cope with environmental change and remain effective over time (Eisenhardt & Martin, 2000; Van den Bosch et al., 1999). The application of the resource-based view to innovation activity also supports the complementary role of innovation in organizational subsystems. According to this view, performance is induced by the synergistic use of the organization's internal resources, including technological and managerial knowledge resources, leading to the introduction of innovations of different types in different subsystems (Barney, 1991; Damanpour et al., 2009).

The emerging literature on business model innovation also points out the importance of introducing multiple innovations over time (Long Range Planning, 2010). A business model innovation is not an isolated phenomenon such as a strategic or a disruptive innovation; instead, it is a multidimensional innovation phenomenon that encompasses the entire organizational system and processes that govern how the parts or subsystems fit together and work with each other to create or reinvent a business (IBM, 2007; Johnson, Christensen, & Kagermann, 2008; Liang, 2010). For example, in an empirical study of low-cost carriers in China, Liang (2010: 1) found that 'an effective business model innovation does not confine to exploiting individual innovations but to harness complementary nature of business model itself through systematic change'.

Overall, these views suggest that effective organizations introduce streams of different types of innovations over time (Damanpour et al., 2009; Roberts & Amit, 2003; Tushman & O'Reilly, 2002). They challenge the perspective that firm performance is enhanced by a focus on excelling at a certain innovation type, whether product, process, technological, or managerial. Instead, they suggest that firm performance relates more to the history of innovation activity than to the introduction of stand-alone innovations (Roberts & Amit, 2003). Thus, the impact of innovation on performance depends on the introduction of a portfolio of innovations of different types over time (Damanpour et al., 2009). The generation or adoption of a single technical or managerial innovation, or even a set of only technical or only managerial innovations, might not enable firms to fully realize positive consequences of innovation, if any.

Future Research Implications

Research on managerial innovation is still in its early stage. We hope that our article will stimulate future research on this comparatively less-studied but highly important innovation type in diverse industrial and national contexts.

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Our review indicates that the generation process of managerial innovations has rarely been probed and that the adoption processes of technical and managerial innovations are similar. These provide research opportunities on the processes of generation and adoption. For instance, by investigating the process of generation of managerial innovation, future research can advance the development of new managerial tools, techniques, and processes. Also, more fine-grained research can examine the similarities and differences between the processes of adoption of managerial innovation and product/service or technological process innovation.

Research on types of managerial innovation and differences between their antecedents and consequences are also scarce. We proposed several typologies of managerial innovation. By distinguishing between these types, future research can help enhance our understanding of the influence of managerial innovation on organizational conduct and the combined effects of its types on organizational outcome. We recommend investigation of external conditions and internal processes that facilitate the introduction of compositions of innovation types across organizational units and over time.

Contrary to the management fashion perspective, we argued that the adoption of new managerial techniques and practices is not necessarily driven by institutional pressures and is not only intended for social conformity or admiration. Whereas forces to obtain legitimacy exist, they are moderated by organizations' internal systems and managerial choice. Future research on managerial innovation can depart from these competing perspectives based on the norms of rationality vs. conformity, and instead, examine the interactive effect of institutional legitimacy and managerial choice on the adoption of managerial innovation.

Research on managerial innovations in China can contribute in several specific ways. First, the unprecedented economic growth in China fuels the emergence of new organizations and rapid development of existing ones through their life cycles. Important longitudinal research can explore the role of managerial innovation in the evolvement of Chinese enterprises, especially probing managerial practices that facilitate firms' transitions from one stage of their life cycle to another (e.g., start-up to growth, growth to maturity, maturity to renewal). The new domestic private sector in China provides a 'natural experiment[al]' setting to study both product and managerial innovations in the millions of entrepreneurial firms in China (Phan, Zhou, & Abrahamson, 2010). Innovation scholars are encouraged to seize this unique opportunity and study the role of innovation in the growth of these firms. This context also provides a unique opportunity to study the dynamics of managerial and technical innovations by examining whether managerial innovations lag, are supplementary to, or lead technical innovations.

Second, the transition of the state-controlled to privately controlled enterprises provides another avenue for research on managerial innovation in China. Scholars can examine the influence of various governance mechanisms, structures, and

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organizational processes that promote or hinder successful transitions. Third, Chinese firms are said to be leaders in cost innovation, which involves re-engineering cost structures such that customers can be offered more for less (Williamson & Zeng, 2009). Given the current global economic downturn, studies of the diffusion of this managerial innovation and factors that would influence its successful adoption by firms in other nations are needed.

Finally, considering cultural differences in creativity and innovation (Morris & Leung, 2010), researchers in Asia can adopt a more long-term and systematic approach in developing theories of managerial innovation. Instead of emulating the short-term perspective that governs current research, innovation studies in the Chinese context can include collaborative projects to enable multiple empirical testing of theories, produce consensual models and paradigms, and provide a solid ground for cumulative and integrative research on innovation in organizations. China also would be a good context to study the role of societal culture in both technical and managerial innovations.

Managerial Implications

Challenging the view that firm performance is mainly enhanced by focusing on the generation or adoption of product/service or technology-based innovations alone, we recommend managerial attention to and organizational investment in both technical and managerial innovations. Instead of pursuing autonomous strategies of innovation types, managers are advised to pursue synchronous strategies of innovations as firms' innovative performance depends on how well innovations of different types advance organizational goals together, not on how each contributes alone. For instance, the full potential and benefits of adopting new technologies cannot be realized unless they work in harmony with new organizational processes and systems. In the long term, in our view firms that introduce innovations of different types in tandem and are able to combine these innovations in new ways will outperform those that do not.

CONCLUSION

Extant literature on innovations has primarily focused on technological innovations and studies of managerial innovations have been comparatively rare. In this article, to help move research on managerial innovations forward, we reviewed this nascent literature. We examined the conceptual development, processes, types, and antecedents of managerial innovations with the aim of providing a greater understanding of innovation processes and outcomes in organizations. With respect to conceptions of managerial innovations, our review suggests that definitions of administrative, organizational, and management innovations overlap markedly. We proposed typologies of managerial innovation and identified several

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salient antecedents of managerial innovation. We also proposed several avenues for future research. Overall, we encourage further research on managerial innovation to complement existing theories of innovation that are derived mainly from the studies of technology-based innovations, provide a fuller understanding of consequences of innovation, and advance innovation theory and management practice in both the East and the West.

NOTES

[1] An exception is service innovations. Because of the increasing importance of the service sector in the economies of most nations, studies of service innovations and the development of specific innovation models for the service industries have recently grown (Barras, 1986; Boyne, Meier, O'Toole Jr., & Walker, 2006; Gallouj & Weinstein, 1997; Miles, 2005; Walker, 2008). However, the differences between goods and service industries notwithstanding, there are considerable similarities between product and service innovations. Like many other authors, for example, Edquist et al. (2001: 12–13) conceptualize product innovation to include both new goods (material product innovations) and new services (intangible product innovations). Such similarities are less pronounced between managerial and technological innovations.

[2] Some authors have also included 'termination or exnovation' and 'consequences' of innovation within the adoption process (Angle & Van de Ven, 2000; Kimberly, 1981; Rogers, 1995). However, research on termination/exnovation is scarce, and consequences, in our opinion, are related to the innovation-performance relationship domain falling within a different body of innovation research, which we will discuss below.

[3] Capital-saving innovations can also be 'labour-enhancing'; i.e., they could increase responsibility and competence of the employees and thus produce qualitative changes in their skill level (Edquist et al., 2001: 37; Nyholm, 1995).

[4] It should be noted that while the evolution of IT is central to organizations in some industries, it may not be so to others. For example, in the service industries, while IT is central to firms in information-intensive services (e.g., banking, insurance, accounting), it is not as central to others such as retail, consultancy, and legal services (Uchupalanan, 2000).

[5] Since exploration has been related to knowledge generation and exploitation to knowledge application (Grant & Baden-Fuller, 2004), exploratory/radical and exploitative/incremental innovations can, respectively, be associated with the generation and adoption processes as conceived in this study.

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