

# **THE ROLE OF IT-DRIVEN ENTREPRENEURIAL PROCESSES IN BUSINESS MODEL DEVELOPMENT**

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## Declaration

I hereby declare that the thesis is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in the thesis.

This thesis has also not been submitted for any degree in any university previously.



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SITOH MUN KIAT

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## Summary

The creation of a business model is, in essence, the creation of a business idea that enables the pursuit of entrepreneurial opportunities. Employing the theoretical lens of effectuation and opportunity constructs in the entrepreneurship field, our studies provide insight into the mechanisms linking the business model with entrepreneurial processes. We conducted three empirical, in-depth case studies (referred to as *Study 1*, *Study 2* and *Study 3*) to determine how organizations develop their business models, from formulation to implementation, using entrepreneurial processes. The strategic actions in all three studies are closely associated with information systems (IS) ecosystems, IS strategies and IS resources. Our first study examined how a software firm revised its business models multiple times during a new product creation cycle to position itself in an established IS ecosystem. The second study examined how a large organization uses IS strategies and IS resources to increase its options to configure its business model. The third study examined how a social enterprise established a new IS-driven ecosystem within a rural community to exploit opportunities offered by a much larger e-commerce ecosystem.

Study 1 aimed to understand the role of effectuation and causation in business model formulation and implementation. We argue that these two contrasting approaches are generic decision-making mechanisms that can coexist and that they are configured in specific ways during different phases in the process of new product creation. These decision-making mechanisms are influenced by internal and external market factors, the nature of activities of a phase, and the interplay between the business model and tactics.

Study 2 aimed to understand the role of opportunity discovery and exploitation in business model formulation and implementation. Our findings show that IS strategy can facilitate

opportunity discovery when formulating the narrative and calculative logics of the business model and that the opportunity exploitation of IS resources enhance subsequent choices of logics. This explorative study addressed the research gap in the area of IS-driven mechanisms by which the underlying opportunity and the business model are interconnected.

Study 3 aimed to understand the role of opportunity creation and discovery in business model formulation and implementation. We find that opportunity processes are important components of a social business model. New opportunities are created deliberately while building a social business model, leading to the large-scale mobilization of participation in e-commerce activities. We differentiate endogenous and exogenous opportunities to enable the clarification of the roles of various opportunity processes. We introduce *opportunity repertoire*, a structure that facilitates the mass mobilization of participants in the creation, discovery, and exploitation of opportunities and *opportunity menus*, an objectified artifact that facilitates opportunity discovery by different stakeholders.

The empirical investigation of effectuation, opportunity creation, opportunity discovery and opportunity exploitation in the contexts of IS ecosystem, IS strategy and IS resources contribute to a better understanding of the role of IT-enabled entrepreneurial processes in business model development.



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# **1. Introduction**

## **1.1 Background**

Rapid advancements in information technology (IT) create new opportunities for organizations and entrepreneurs to operate differently in economic and/or social landscapes. Organizations can re-examine and alter their existing value propositions to exploit these opportunities to increase performance or merely to ensure survival when their competitors respond to these opportunities; entrepreneurs can create new ventures to offer novel value propositions. Many recent IT advancements -- such as Internet technology, mobile computing, cloud technology and social networking sites -- foster alternate methods of conducting economic exchange and provide abundant options for entrepreneurs to design their business models. They may make incremental changes to their businesses to navigate and gain insights into the new landscape, or they may make radical changes, which, in some cases, can lead to the creation of new industries.

Organizations and entrepreneurs do not necessarily need to exploit a new IT innovation from scratch because value-added services, products and sales channels associated with the new innovation have been created and offered by others. These services, products and sales channels are readily available for exploitation and represent abundant IT-driven opportunities for the masses. Examples include Taobao, the largest Chinese e-commerce platform, which helped create many micro-entrepreneurs (Avgerou & Li, 2013); Xbox, Microsoft's game console, which attracted game studios to develop products for a large number of target customers; and Amazon Web Services (AWS), Amazon's cloud computing service, which offered software vendors new ways to distribute and license their products. There is

consensus among academics and practitioners that the business model is fundamental and vital to the success of organizations. This consensus is illustrated in the explosion in the number of recently published articles (Zott et al., 2011), the special issue on business models in *Long Range Planning* (vol. 43, 2010) and the upcoming special issue on “Digitization in Business Models and Entrepreneurship” in *Information System Journal* (Clemons et al., 2013).

Although the notions of value creation and capture associated with traditional business models are relatively well understood, the processes associated with the formulation and development of business model are not. Because the creation of a business model is fundamentally the creation of a business idea designed to pursue entrepreneurial opportunities, we adopt an entrepreneurial process perspective to examine business model development, the process from the conceptualization to the realization of a business model. Managers may have a sense of the direction in which the market is heading; however, they are unable to determine a precise set of strategic actions, as crucial information is typically not available at the design stage of their next business model. Thus, it is necessary for managers to organize their entrepreneurial processes to develop their next business model. Using these entrepreneurial processes, organizations may be able to frame the business model problems that are similar to those of startups and, thus, to use similar approaches to overcome the challenges of creating a viable business model. Examples of business model problems include portals that are able to acquire a large number of customers but struggle to create acceptable profits (e.g., Twitter); multisided platforms that are able to innovate new operational methods but fail to attract stakeholder

participation; and individual entrepreneurs who are able to foresee major user benefits from a new IT innovation but unable to design a business model that can sustain the continuous delivery of these benefits.

The study of business model development, coupling the business model and the entrepreneurial approach, will benefit the advancement of our knowledge of business model dynamics. Thus, this thesis focuses on a broad research question, as follows:

*How does an organization develop its business model, from formulation to implementation, using IT-enabled entrepreneurial processes?*

## **1.2 Theoretical Background**

Although there is no consensus on the definition of a business model, emerging themes have treated business models as holistic approaches that link value creation, value capture, and stakeholders (Zott et al., 2011). Consistent with these emerging themes, we refer to a business model as the expression of “*the logic of the firm, the way it operates and how it creates values for stakeholders*” (Casadesus-Masanell & Ricart, 2010, p.196), a definition that fits both the traditional and social business models. Social business models are for organizations that use market-based approaches to fulfill their social purposes using combines principles from both traditional and social entrepreneurship in the design of its business model. Based on the theoretical tradition of business strategy, a business model must be coupled with strategic elements to ensure a competitive advantage (Teece, 2010). A business model can be the center of an organizational narrative to communicate strategic choices (Osterwalder et al., 2005; Shafer et al., 2005), and it forces an enterprise to

focus “attention on how all the elements of the system fit into a working whole” (Magretta, 2002, p. 90). A business model can guide “the myriad of choices and actions involved in execution” more effectively than the traditional business strategy frameworks (Richardson, 2008, p.135). Thus, a business model is a description of a whole system, functioning in an intimate relationship with the broader market (Morris, 2013).

The dynamic view of business models has received recent attention (Zott & Amit, 2013). For example, strategic experimentation as a series of tests can be designed to minimize risk and maximize learning to revise a business model (Yunus et al., 2010), and organizational learning can leverage business model change as a business strategy renewal mechanism (Sosna et al., 2010). In contrast to the analytical approach, strategies are deployed to discover new business models through experimentation and learning (McGrath, 2010). It has been suggested that a business model reflects the management’s hypotheses concerning stakeholders’ behaviors; through learning, a business model can be adjusted to function better (Teece, 2010). For large organizations, a complex business model may be conceptualized to support paradoxical strategies with dynamic decision making (Smith et al., 2010).

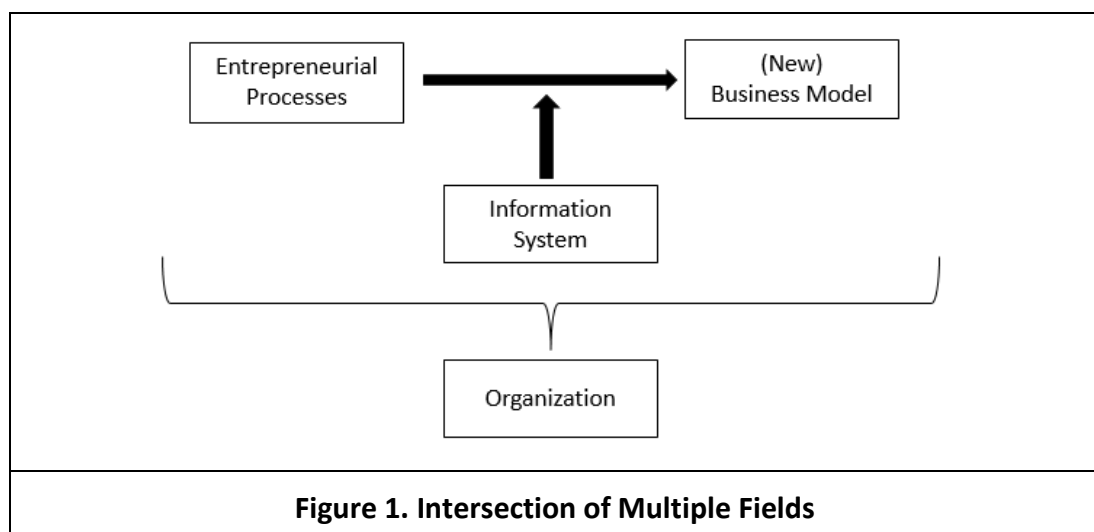
The creation of a new business model is an expression of entrepreneurial opportunity. Opportunities appear abundant, but it is not necessarily the case that individuals or firms will recognize them (Shane, 2000). Opportunity recognition, identification, creation, discovery, and exploitation are processes suggested in the field of entrepreneurship; however, researchers frequently select only a few processes to study without mentioning other processes, as there is no consensus

regarding their existence or their definition. For example, there is much debate on whether opportunities are identified through a process of "discovery" or a process of "creation" (Alvarez & Barney, 2007). Short et al. (2009) believe that scholars will progress toward a middle ground in which certain opportunities are perceived to have been discovered while others are created, depending on the context. Shane (2012) emphasize that these processes do not necessarily follow a planned sequence. Effectuation has attracted attention in the entrepreneurship research field since it was first introduced by Sarasvathy (2001) (e.g. Brettel et al., 2012; Chandler et al., 2011; Read et al., 2009). Effectuation has been suggested as a set of processes that can overcome the barriers of business model innovation (Chesbrough, 2010). The theory of effectuation suggests principles that revert to traditional practices in decision making. A recent study demonstrates that expert entrepreneurs are more likely to use effectuation to create a new venture (Dew et al., 2009).

Because we focus on IT-driven entrepreneurial processes, we adopt a dynamic view of Information Systems (IS) strategy. In the strategic alignment literature (Aversano et al., 2012; Chan & Reich, 2011; Henderson & Venkatraman, 1993), researchers has recently shifted their attention from a static to a dynamic view of IS strategy. For example, during the process of IS strategizing, information infrastructure can provide a supportive context for learning and interaction to explore new business opportunities while exploiting the existing technology (Galliers, 2011). The involvement of stakeholders with different IS capabilities is valuable, as they can co-create new value via their collective strength (Sarker et al., 2012). To obtain this collective strength, the concepts associated with business models can provide a

cognitive frame for managers, entrepreneurs, and developers to influence technological outcomes (Baden-Fuller & Haefliger, 2013).

This thesis aims to use theories from multiple fields to advance our understanding of business model development from an organizational perspective. Figure 1 denotes our view on relationships among entrepreneurial processes, business model and information system. The link between entrepreneurial processes and business model had been studied (George & Bock, 2011). The business model development required significant entrepreneurial skills when a firm wants to develop new product lines, new ways to produce or penetrate new markets. Although there are research gaps in the link between information systems and business models, research frameworks had been suggested (Al-Debei & Avison, 2010; Osterwalder et al., 2005). However the extant literature does not explore the link between entrepreneurial processes and information system. Hence research gaps exist in the intersection among the entrepreneurial processes, business model and information system; more specifically, in the area of IS-driven mechanisms by which the underlying opportunity and the business model are interconnected.





### **1.3 Research Design**

We designed three empirical case studies (referred to as Study 1, Study 2 and Study 3) to address the board research question mentioned earlier. We adapted an in-depth case study as our research methodology for all three studies because the study of business model development has received little empirical substantiation (Eisenhardt, 1989), and an inductive method is more suitable for exploring a 'how' question (Walsham, 1995). Furthermore, our phenomena are complex and cannot be easily separated from their organizational contexts (Langley, 1999). We used an interpretive approach to ensure that the theoretical lens of entrepreneurial processes can serve as the sensitizing device using prior knowledge (Klein & Myers, 1999).

The first study allowed us to trace how an organization used effectuation and causation processes to determine its business model. The second study allowed us to trace how an organization used opportunity discovery and opportunity exploitation to develop its business model strategically. The third study allowed us to trace how an organization used opportunity discovery and opportunity creation to develop a social business model. The phenomenon of business model development in all three cases is complex. We used a different set of theoretical lens in each study, based on what we believed was the best fit to help us understand the dynamics of business models. Table 1 summarizes the theoretical lens employed in the three studies.

<b>Table 1. Summary of Studies</b>			
<b>Entrepreneurial Processes</b>	<b>Effectuation-Causation Interaction</b>	<b>Discovery-Exploitation Interaction</b>	<b>Creation-Discovery Interaction</b>
Effectuation	Study 1		
Opportunity Discovery		Study 2	Study 3
Opportunity Exploitation		Study 2	Study 3
Opportunity Creation			Study 3

The cases selected for the three studies meet the following criteria: (a) the organization had spent at least two years to develop its new business model so to accumulate sufficient rich data, (b) key decision makers for business model development were available for interviews, (b) the new business model is triggered by an IS opportunity and (d) significant IS-driven actions.

Next, we will present an overview of each study, followed by the detailed description of each study.

### **1.3.1 *Effectuation-Causation Interaction***

The objective of this study is to understand the roles of effectuation and causation in business model formulation and implementation. Effectuation and causation are two contrasting approaches to new business development. We argue that these two approaches are generic decision-making mechanisms that can coexist and that they are configured in specific ways during different phases of the process of new product creation. These decision-making mechanisms are influenced by internal and external market factors, the nature of activities of a phase, and the interplay between the business model and tactics. Our research framework is a generic two-stage competitive process that separates business models from tactics. We conducted an

in-depth case study of a console game creation project to examine these decision-making mechanisms and explore how business models are formulated and how each mechanism influences the subsequent tactics during the process of new product creation. Our findings suggest the following four decision-making configurations with unique modes of interplay between business models and tactics: effectuation-centric, discovery-centric, causation-centric, and tactic-centric. The theoretical insights on the linkage between decision-making mechanisms and business models have important practical implications for new product creation.

### **1.3.2 *Discovery-Exploitation Interaction***

This study aims to understand the roles of opportunity discovery and exploitation in business model formulation and implementation. In a large enterprise, the initial design of a new business model is likely to be a conceptual model that lacks sufficient details for its immediate implementation. As such, business managers are likely to organize processes to add these details, with the goal of developing the business model. By adopting an entrepreneurial opportunity perspective, this study focused on the role of IS in business model development. We conducted an in-depth case study of a large Chinese enterprise developing a new business model. Our findings show that IS strategy can facilitate opportunity discovery when formulating the narrative and calculative logics of the business model and that the opportunity exploitation of IS resources enhances the subsequent choice of logics. This explorative study addressed the gap in the literature on IS-driven mechanisms by which the underlying opportunity and the business model are interconnected.

### **1.3.3 *Creation-Discovery Interaction***

This study's objective is to understand the role of opportunity creation and discovery in business model formulation and implementation. A social enterprise connects a social purpose with economic rationality and market-based approaches to solve recognized social needs. However, the opportunities frequently far outstrip the resources available to address their needs, making the design of a social business model a challenging task. It has been suggested that opportunity processes in a social enterprise enable economic, social, and environmental resources to reinforce one another in novel ways. Based on an in-depth case study of a large social enterprise in China, we find that opportunity processes are important components of a social business model. New opportunities are created deliberately while a social business model is built, leading to the large-scale mobilization of participation in e-commerce activities. We differentiate between endogenous and exogenous opportunities to enable the clarification of the roles of various opportunity processes. This study may potentially enrich our knowledge of the relations between opportunity processes and the construction of a successful social business model in the context of e-commerce.

This thesis consists of three in-depth case studies (referred to as Study 1, Study 2 and Study 3). Each study used constructs in multiple fields to provide us with new insights on business model development. Studying both the economic- and social-driven organizations can potentially help us to determine the boundary conditions of some of our findings. Only new business model development is considered in our studies as we posit that the mechanisms to develop a new business model are closely linked

to entrepreneurial processes. Figure 2 summarizes the constructs used in the three studies.

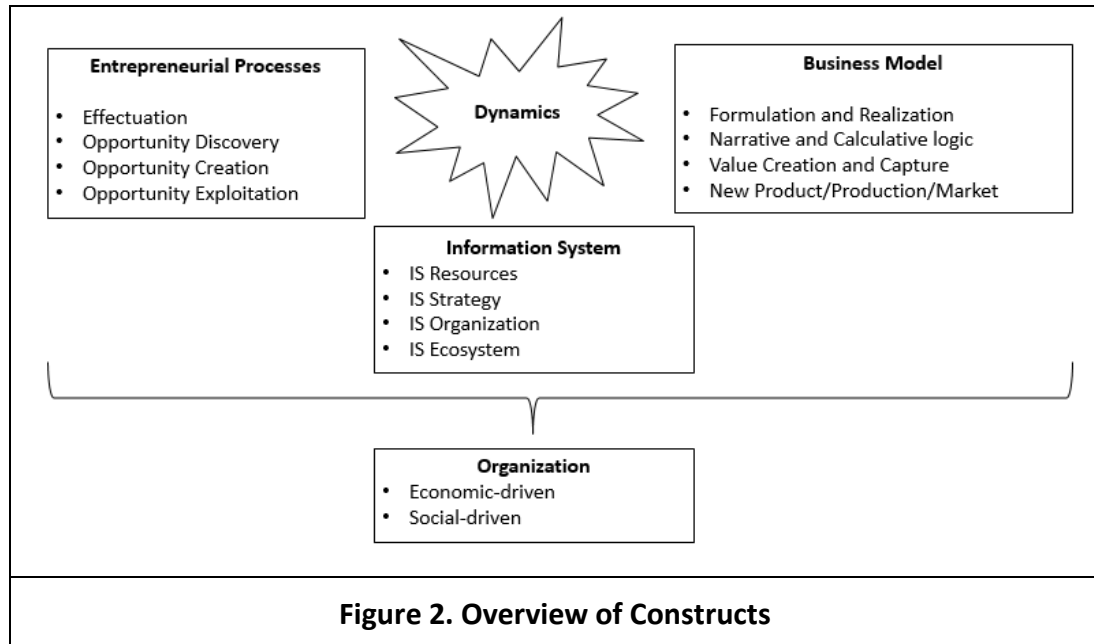


Table 2 summarizes the theoretical lens, context of the case, key findings, primary and secondary data of the three studies

<b>Table 2. Three Modes of Business Model Development</b>			
	<b>Study 1:</b> Effectuation-Causation Interaction	<b>Study 2:</b> Discovery-Exploitation Interaction	<b>Study 3:</b> Discovery-Creation Interaction
Entrepreneurial Theoretical Lens	Effectuation	Opportunity Discovery & Opportunity Exploitation	Opportunity Discovery & Opportunity Creation
Organization of the Case	A console game developer firm in Australia	The largest agricultural products and food processing in China	A highly successful e- commerce social enterprise in China
Context	An organization wants to become a legitimized member of a mature but open ecosystem	An organization wants to transform itself in a closed ecosystem	An organization wants to create a new ecosystem that does not exist
Focus of Study	How an organization discovers its business model by exploring the ecosystem	How an organization develops its business model when the initial model is fuzzy	How an organization creates its business model by creating new opportunities
Key Finding	Effectuation and causation are both required processes to determine the business models in different phases of a project cycle	IS exploitation can be used as an effective IS strategy for organizations to discover new narrative and calculative logics of a business model	Opportunity processes are embedded in a social business model to facilitate the mass mobilization of social and economic stakeholders
Dynamic of Business Model	Major revision of the business model in each phase of the project cycle	The business model is articulated each time that IS resources are deployed	Entrepreneurs create endogenous opportunities for stakeholders to discover both the endogenous and exogenous opportunities
Primary Data	(Jul 2011 – Mar 2012) 23 interviews	(Sep 2012) 15 interviews	(July-Aug 2013) 36 interviews
Secondary Data	<ul style="list-style-type: none"> <li>• 900 pages of game design documents</li> <li>• 40 pages of technical documents</li> <li>• 8 commercial contracts</li> <li>• 154 marketing plans</li> <li>• 25 media releases</li> </ul>	<ul style="list-style-type: none"> <li>• 48 in-house articles on value chain management</li> <li>• 18 in-house articles on IS</li> <li>• 124 in-house articles on business models</li> </ul>	<ul style="list-style-type: none"> <li>• 60 media releases</li> <li>• www.wdxxh.org</li> <li>• Community forums</li> <li>• Selective third-party online reports on e-commerce villages</li> </ul>

## 2. Study 1: Effectuation-Causation Interaction<sup>1</sup>

### 2.1 Motivation

The business model concept has emerged as a useful framework for entrepreneurs to “generate and test theories about how a business delivers value to its customers” (Eckhardt, 2013, p.412). A business model may be expressed as an organizational narrative that describes how a firm works (Magretta, 2002). A business model is fundamental to every firm because it describes the underlying logic of how the firm creates value for its customers and captures value for itself. The business model of a firm may complement new product innovation to deliver better outcomes (Chesbrough, 2010; Zott & Amit, 2008); entrepreneurs use business models as narratives and calculative devices to present their business ideas to investors, customers, and partners (Doganova & Eyquem-Renault, 2009). Simultaneously, the creation of new product(s) is an enactment of entrepreneurial opportunity (George & Bock, 2011), where opportunity is “an idea or dream that is discovered or created by an entrepreneurial entity and is revealed through analysis over time to be potentially lucrative” (Short et al., 2009, p.55). To understand the relationship between opportunity creation and a business model, the cognitive model linking opportunity assessment to business model design may be examined (George & Bock, 2011). *Effectuation* has been proposed as a “comprehensive alternative frame” (Sarasvathy, 2008, p.18) or a set of fundamental decision-making processes used by expert entrepreneurs in starting a new business (Sarasvathy, 2001). The theory of

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<sup>1</sup> This study was published in *IEEE Transactions on Engineering Management*:

Sitoh, M. K., Pan, S. L., & Yu, C. Y. (2014). Business Models and Tactics in New Product Creation: The Interplay of Effectuation and Causation Processes. *IEEE Transactions on Engineering Management*, 61(2), p213-223.

effectuation suggests two contrasting types of decision-making logic: a causal logic that is based on the premise that “to the extent we can predict the future, we can control it” and an effectual logic that is based on the premise that “to the extent we can control the future, we do not need to predict it” (Sarasvathy, 2008, p.18). A dynamic view of the business model may be used as a tool to address change in the model itself (Demil & Lecocq, 2010), which underscores the importance of managerial issues about how to create or revise a business model.

In response to the calls for research on the dynamics of business models (Amit & Zott, 2001; Morris et al., 2005), we combine multiple theoretical lenses (Okhuyen & Bonardi, 2011) to develop new explanations of business model phenomena. Both the dynamic view of business models (as an enactment of entrepreneurial opportunity) and the notion of effectual processes (as an alternative frame of entrepreneurs) share the same emphasis on continuous decision making and actions. In this study, we use empirical data from an in-depth case study to provide preliminary answers to the following two research questions in the context of new product creation: (a) how does a firm formulate its business models from a decision-making mechanism perspective and (b) how does a business model influence the subsequent tactics from a decision-making mechanism perspective? To answer these questions through the theory of effectuation, we take an entrepreneurial approach to discover the linkage between decision-making mechanisms and business models to help us advance our knowledge of business model dynamics.

To establish the basis for our study, we first review previous research on business models and tactics and the theory of effectuation. The research methods are then



explained, followed by case description and in-depth discussion. The study concludes by summarizing our findings and contributions, acknowledging some limitations of the study, and suggesting future research directions.

## **2.2 Literature Review**

### **2.2.1 Business Model and Tactics**

There is no consensus on the definition of a business model (Al-Debei & Avison, 2010; Hedman & Kalling, 2003; Morris et al., 2005; Osterwalder et al., 2005; Zott et al., 2011). It has been referred to as “a statement, description, a representation, an architecture, a conceptual tool or model, a structural template or a framework, a pattern and a set” (Zott et al., 2011, p.4) that abstracts a firm’s activities (Seddon et al., 2004; Zott & Amit, 2010), components (Morris et al., 2005; Osterwalder et al., 2005), or the logic of how a firm does business (Casadesus-Masanell & Ricart, 2010). Despite these diverging approaches, emerging themes have approached the business model as a new unit of analysis and as a holistic view linking value creation, value capture, and stakeholders (Zott et al., 2011). Our study adopts a generic level description from Casadesus-Masanell and Ricart (2010) that is consistent with these emerging themes to refer to a business model as “*the logic of the firm, the way it operates and how it creates values for stakeholders*” (Casadesus-Masanell & Ricart, 2010, p.196).

One of the multifaceted roles of the business model is as an opportunity facilitator, serving as a “facilitative intermediary in the opportunity-creation process” (George & Bock, 2011, p.6). In this view, the business model depicts transactive elements of the firm through opportunity exploitation (Amit & Zott, 2001) and actions associated

with exploitation that require significant experimentation and learning (McGrath, 2010). Strategic experimentation (instead of intuition) is utilized to minimize risk and maximize learning during business model development (Yunus et al., 2010). The learning process triggers the constant renewal, adaptation, and fine-tuning of a business model (Sosna et al., 2010). It has been suggested that a business model reflects management's hypothesis about stakeholders' behaviors; through learning, a business model can be adjusted to work better (Teece, 2010). Similarly, Magretta (2002) describes a business model as simply "the managerial equivalent of the scientific method - you start with a hypothesis, which you then test in action and revise when necessary" (Magretta, 2002, p.5).

Every firm has a business model that is employed either implicitly or explicitly (Teece, 2010). However, the dynamics of business models and their nature vary widely because market- and firm-level factors influence the business renewal process. The business model can be used to facilitate communication of strategic choices (Osterwalder et al., 2005; Shafer et al., 2005); however, it often remains as "tacit knowledge in the minds of one or few key managers within organizations" and is seldom communicated (Al-Debei & Avison, 2010, p.372). A recent in-depth longitudinal case study of an individual entrepreneur demonstrates that changes in this particular business model are driven by passion more than economic gain (Svejenova et al., 2010). In the context of project-based firms, the business model formulated at the project-level can significantly shape the firm-level business model (Mutka & Aaltonen, 2013). In the case of large organizations, a complex business

model may be conceptualized to support paradoxical strategies with dynamic decision making (Smith et al., 2010).

Building upon the theoretical tradition of business strategy, a business model that is coupled with strategic elements must be deployed to ensure a competitive advantage (Teece, 2010). The business model is commonly conceived of as the result of strategic choices; for example, it may be a reflection of the realized strategy (Casadesus-Masanell & Ricart, 2010) and/or an abstraction of certain aspects of a firm's strategy (Seddon et al., 2004). In the early stage of a venture, the business model facilitates entrepreneurs in conceptualizing their ventures as interrelated sets of strategic choices and ingrained entrepreneurial vision (Morris et al., 2005). The business model is thus the result of strategic choices about policies, assets and governance, and its consequences are associated with these choices (Casadesus-Masanell & Ricart, 2010). In the context of new global firms, sensing, entrepreneurial and relational capabilities are three interrelated capabilities important to innovate business model (Johansson & Abrahamsson, 2014).

Tactical actions are generally considered to be activities associated with the implementation of strategy, and there is consensus that strategy and tactics interact (Rangan, 1991). For example, an in-depth analysis of the history of Rome illustrates that the interaction between strategy and tactics may reinforce one another to enhance resilience (Carmeli & Markman, 2011). Studies indicate that top management can influence tactics from the top down (Sparrowe et al., 2006) and that middle management can influence strategic decision making from the bottom up (Wooldridge, 1992). Because the business model “focuses attention on how all

the elements of the system fit into a working whole” (Magretta, 2002, p.6), it embodies a consistent and holistic logic for decision makers to select “the myriad choices and actions involved in execution” (Richardson, 2008, p.135).

Casadesus-Masanell and Ricart (2010) integrate three constructs—business model, strategies, and tactics—into a two-stage competitive-process framework in which the business model and tactics operate in distinct stages (Casadesus-Masanell & Ricart, 2010). In this framework, tactics are referred to as “*the residual choices open to a firm by virtue of the business model it chooses to employ*” (Casadesus-Masanell & Ricart, 2010, p.196). In the first stage, a firm makes strategic decisions to select a business model it intends to utilize; in the second stage, the firm selects tactics based on choices that are guided by the business model selected. Tactics as a means to implement strategy can be a valuable organizational capability, and implementation capability can lead to competitive advantages when growth is driven internally (Lorange, 1998).

### **2.2.2 Effectuation**

Effectuation has been suggested as a set of processes that can overcome the barriers of business model innovation (Chesbrough, 2010). Effectuation is a set of fundamental decision-making processes that “take a set of means as given and focus on selecting between possible effects that can be created with that set of means” (Sarasvathy, 2001, p.245). It is based on the premise that “to the extent we can control the future, we do not need to predict it” (Sarasvathy, 2008, p.18). This concept has attracted attention in the entrepreneurship research field since it was first introduced by Sarasvathy (2001) (e.g., (Brettel et al., 2012; Chandler et al., 2011;

Read et al., 2009)). The theory of effectuation suggests principles that revert to traditional practices in decision making. The effectual principle of “affordable loss” prescribes committing in advance to what one is willing to lose instead of investing in projects with the best expected returns, whereas *pre-commitment* prescribes securing commitment in advance from stakeholders rather than undertaking elaborate competitive analyses. The opposite of effectuation is *causation*, which is defined as the traditional wisdom of decision making based on the premise that “to the extent we can predict the future, we can control it” (Sarasvathy, 2008, p.18).

There are several recent empirical studies on effectuation. A study of 400 corporate research and development (R&D) projects demonstrates that both effectuation and causation processes are effective approaches, depending on the level of innovation required for each project (Brettel et al., 2012). Another study demonstrates that expert entrepreneurs are more likely to use effectuation to create a new venture, whereas novices are more likely to use causation, and that (in contrast to previous studies) neither experts nor novices use intuition regularly (Dew et al., 2009). A recent survey of 94 high-technology firms suggests that firms should apply effectual principles to experiment, maintain flexibility and form partnerships (Mthanti & Urban, 2014). Switching from causal to effectual process allows firms to rapidly increase the level of commitment in the foreign market (Kalinic et al., 2014). A recent qualitative study of five small firms reflects that they use effectual process to create new products, especially in the early stages, in combination with causal process, especially in later stages (Berends et al., 2014). Measures of effectuation and causation have been developed and validated in a third study, which found that

experimentation and flexibility are processes of effectuation instead of causation (Chandler et al., 2011). Although the dynamic view of decision-making processes has not yet been empirically tested, effectuation appears to be a promising approach to “demystify entrepreneurial decision-making by describing how strategies emerge through the use of specific cognitive approaches” (Dew et al., 2008, p.320).

### **2.3 Research Methodology**

The methodology that we use to conduct this study is based on structured-pragmatic-situational (SPS), a systematic approach to conduct case studies (Pan & Tan, 2011). SPS is designed for the derivation of new theories (e.g., (Ravishankar et al., 2011; Tan et al., 2010)), and it has the following three features: it prescribes a systematic process to conduct an interpretive case study, it is infused with techniques to ensure viability while maintaining the rigor expected, and it facilitates adaptability in response to contingencies and the emergence of surprising case data (Pan & Tan, 2011). To gain insights on how a business model is formulated and altered, we utilize an in-depth case study because of its suitability for exploring the “how” questions (Walsham, 2006). The firm in focus is FUZZYEYES (FZE), a computer/console game studio based in Australia. We use a single-case study because we find that FZE provides us with adequate access to decision makers who have experienced the entire cycle of the process of new product creation, a rich set of secondary data covering all phases of the project, and a long project cycle to detect revisions to the business model, if any. Given the rich data available to us in this single-case study, we believe that it will be feasible to generalize certain

theoretical statements from empirical research (Lee & Baskerville, 2003; Walsham, 1995).

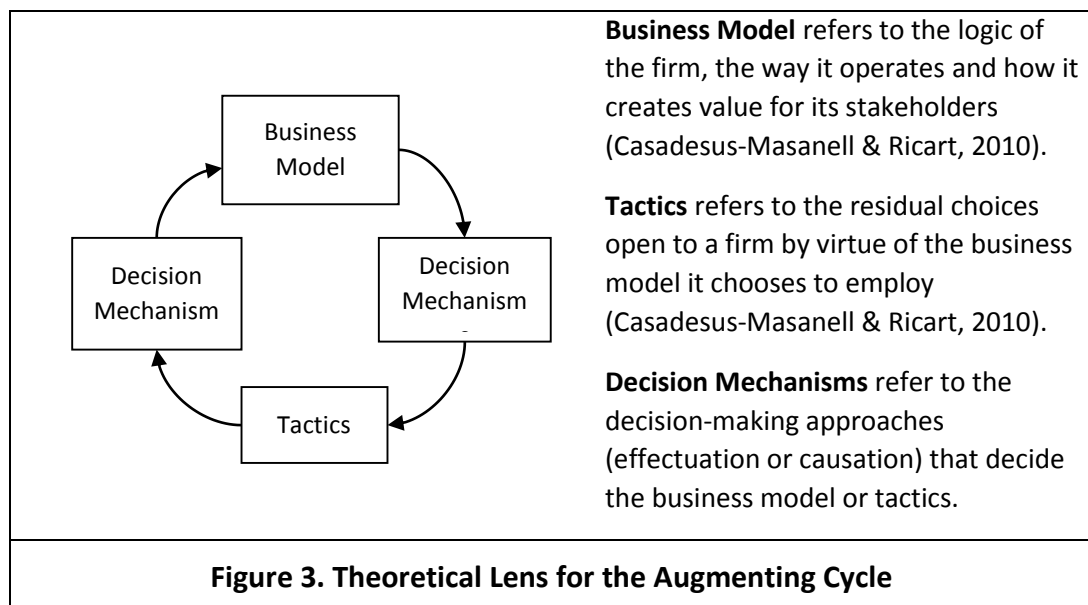
Following the steps outlined in SPS, after we have gained access to FZE, we will enter the framing cycle, which is followed by the augmenting cycle. Each cycle consists of three repeating steps. The framing cycle consists of conceptualizing the phenomena, collecting and organizing the initial data, and constructing and extending the theoretical lens. Once we are confident in our theoretical framing, we move to the augmenting cycle. The augmenting cycle consists of confirming and validating data, selective coding, and ensuring theory-data-model alignment. The augmenting cycle will continue until theoretical saturation.

### **2.3.1 Framing Cycle**

At the beginning of the SPS framing cycle, we gathered background information on the industry and conceptualized the phenomena in the initial interviews by focusing on the ecosystem of the creative industry, the factors influencing the decision to create a new product, and the game development process. In subsequent interviews, we conducted further investigation into the activities and the decision-making mechanisms with a timeline. Between July 2011 and March 2012, we conducted 23 interview sessions of 30- to 60-minute duration with the CEO (12 sessions) and Marketing Director (7 sessions), General Manager (2 sessions) and Music Director (2 sessions). All interviews were conducted using semi-structured and open-ended interviews so that any emergence of phenomena might be observed and our focus could be redirected to such emerging themes. An example of the interview protocol was to ask informants to describe how the firm “makes a living” at different phases

of the project. Their descriptions revealed the decision-making mechanisms, the logic of the firm, the tactical choices available, and the tactics selected at each phase.

In the initial stage, we conceptualized the phenomenon with a simple theoretical lens from the two-stage competitive-process framework to delineate the business model and for other stages (Casadesus-Masanell & Ricart, 2010). As data collection progressed, an extended theoretical lens emerged that included dynamic elements, as we noticed that our informants were able to describe the change process in detail. As such, we added two dynamic components to the theoretical lens: (a) separate decision-making mechanisms for business model and tactics and (b) arrows to connect the two stages such that tactical actions might potentially trigger business model revision in a continuous manner, as shown in Figure 3.





### **2.3.2 *Augmenting Cycle***

During the *augmenting cycle* of SPS, we obtained additional data by conducting additional interviews using similar protocols, by scanning secondary data from internal documents (more than 900 pages of game design documents and 40 pages of technical documents, and 8 contracts with publisher and outsourced vendors) and marketing materials (153 pages of marketing plans and analysis, and 25 media releases). This process was undertaken for the following two purposes: first, we wanted to archive data triangulation and, second, we hoped to reduce self-reporting bias and resolve any incongruence that might arise from the collection of these extra data. Data were selectively coded to “clarify the association between decisions made, activities undertaken, and their consequences,”; these data were presented using summary devices such as tables and diagram (Pan & Tan, 2011, p.170). To transform our initial research model into our final model, we aligned theory, data, and the emergent model iteratively until the point of theoretical saturation (Eisenhardt et al., 2010). The emergent model was then validated to ensure it was congruent with both the empirical data and existing literature (Klein & Myers, 1999).

### **2.4 Case Description**

FZE began the console game project in August 2005; after approximately six years of development of the game, it began marketing it in 2011. The level of project funding, competitive landscape, and technology used were different from the firm’s previous experience in personal computer (PC) game creation. The console game was considered to be a large-scale project in the industry. It took the firm three months to conceptualize and 1.5 years to complete the prototype; this stage was followed by another three years to produce a beta-release version and another one year to

implement marketing plans. In the video game industry, a typical independent game studio focuses on the design and development of a game; the remaining activities (such as distribution, marketing, and obtaining various legal approvals) and the funding of the development are provided by a separate entity, known as a publisher (Tschang, 2005). However, in our case, FZE is able to perform certain functions that are traditionally provided by such publishers. This ability provides the firm with more options to select its business model and greater flexibility to exercise decision-making authority at different stages of the project. The following sub-sections describe the four phases of the project cycle.

#### **2.4.1 Phase 1: Conceptualization (duration: three months)**

Game developers, designers, and artists in the game industry are often driven by their passion to be a member of a production team of a successful game title. The media's coverage of success stories, coupled with the excitement generated by the millions of gamers or fans, continue to inspire individuals to enter and stay in the industry.

*People entering our industry typically receive a lower salary compared to their peers in other industries; it is the desire to be a game artist or developer of a successful title that keeps them here. Thus, it is easy for me to motivate them [...] because I already know what they want. [CEO]*

The ecosystem of the game industry opens up opportunities for game studios to create game titles. Major console platform providers, such as Xbox and Playstation 3, compete to attract game studios to use their platforms. They provide the necessary tools, technology, channels, and networks to reach consumers. At this

stage, FZE took up the challenge to enter the market—believing that the ecosystem was there to support their aspiration and that they were required only to focus on the creation of a good game. The CEO began game programming in his teens, and game development has been in his heart since that time. The decision to create a console game was a natural step for him after gaining PC game experience and because of his strong belief in the company’s ability to use technology:

*Not everyone believes we have the capability to create a successful console game, but because of our resources, some PC game experience, and industry connections, such as a music studio [...] and because we can self-fund the project if necessary, why not? [...] There is a saying that all possible games have been created before and that there is no new game but only the repackaging of old concepts with new storyboards. [CEO]*

They knew that the market analyses and predictions for the sales potential of console games that they conducted internally were not accurate because critical information—such as revenues and development costs—were not available to them (despite having searched for them exhaustively). The CEO recalled his motivation to enter the market:

*We will earn money if we have a great product. From our analyses, we know this is a high risk but there are huge potential profits [...] Returns are often 10 times the investment if you can reach the top [...] I would say the aspiration of being in the console game market was a greater motivation for me than making money at the time. There are many ways of making money, but I selected this career because it is what I like to do. [CEO]*

The decision to enter the console game market prompted the firm to take action. Serving as a buy-in process and idea collection, the firm conducted contests for staff to propose game concepts. The winner would be offered a key role with a title, such as 'Art Director' or 'Game Designer', to advance their career in the industry. With project-based designations, FZE created more career opportunities for staff to experience different roles. Although the technical complexity in the development of a console game is high, the CEO used pre-commitment to gain additional resources from staff instead of hiring more experienced employees:

*If they can take on a greater role with existing salary, working on this project will push them to maximize each employee's potential. I give them confidence that FZE will proceed with the project regardless of whether we could secure a publisher to finance the project [...]; the worst case was that we would self-fund the project. [CEO]*

At this point, technology was not the center of the focus; instead, that focus was on imagining what they could create. Team members spent a substantial amount of time in public and university libraries researching historical objects, characters, places, and events to construct their storyboards. Team members interacted closely to sharpen their vision of game storyboard and game play. The long hours of social interaction across different disciplines and different levels focused them on what they already knew, and they synthesized this knowledge with new information from research. The collaboration process helped them to reflect upon 'who they were' in terms of what they could do and what inspired them; taken together, these factors helped strategize the direction of the game storyboard.

#### **2.4.2 Phase 2: Prototyping Phase (duration: 1.5 years)**

Conceptualization was a phase that evaluated whether FZE had a sufficiently good idea. Once the idea was clear to the CEO, the next decision was whether to move to the prototyping phase, which represented a much higher investment risk because it would take 1.5 years to complete. The purpose of this phase is to elevate the idea to a 'proof of concept' and, more importantly, to create something concrete that demonstrated their ideas to the marketplace.

*No one really knows whether a game will make it big. The best game does not necessarily become the best seller. I have been in this industry for so many years [...] If you let me look at 10 completed game titles today, I simply couldn't tell you [...] which one will make it. [CEO]*

Based on past dealings with publishers, the CEO was not optimistic that they would secure an investment from a publisher even if they could provide a completed prototype. The strategy was to self-fund the project so that they might select a reputable publisher to market the product without relinquishing all rights associated with the product. The CEO decided that the maximum budget he could afford to self-fund the project was only a fraction of the required US\$30M for a game title to be properly released in the top category. With the confidence that he would be able to control the situation, the CEO announced they were proceeding to the prototyping phase:

*I communicated to everyone that FZE could afford, and would proceed with, the development of the project. This communication was necessary to*

*ensure everyone's commitment to the project. They must focus on doing their best. [CEO]*

All subsequent decisions and execution had to be novel and cutting-edge because the firm was required to deliver an AAA title with a limited budget. FZE began by working with people with whom they were familiar to acquire new resources for the project. For instance, the firm arranged for a local music studio to provide music samples of new compositions for the prototype. The CEO of the music studio later became the Music Director of the project, and he commented:

*This is a great opportunity for me. I have worked on more than 70 games, but this one is different—this was my first 3D console game and it was movie-like; its unique style required new imaginative music creation. [Music Director]*

The approach to decision making concerning the choice of tools and technology was systematic. The team tested and experimented with various technical features to discover new possibilities and constraints. Other crucial factors that were integral to the project were also deliberated and worked upon by the employees of FZE, such as decisions about which platforms to develop considering the cost of tools, production efficiency in using the tools, royalty costs, and the cost-benefit ratios of developing for multiple platforms. After this deliberation about testing and decision making, FZE could then purchase specialized hardware, tools for development, and access to external developers in the communities after obtaining concept approval from manufacturers.

Collaboration among the four key department heads (i.e., game designer, art director, technology director, and marketing director) was challenging because the departments often had different expectations. Creative staffs often could not tell in advance how much time they required to complete a piece of work and when to consider a piece of work (because there was always room for further improvements). These conflicts were often the result of disciplinary differences between creative and engineering activities. These conflicts were resolved through the redesign of structure and processes, as the CEO described in his idea of boundary setting for his firm:

*I give each person a scope, similar to drawing a circle as a boundary for each person [...] I allowed them to draw anything they like within that circle. Although I might hope that they will draw, say, a triangle, inside that circle, if they drew a square instead, let it be [...]; that's the best I can do. Thus, the circle defines the constraint but also gives the person the freedom to be creative inside that circle. [CEO]*

Team-building activities, such as contests and parties, were freely initiated by team members. The new organizational culture accelerated the design and adoption of new work processes and the discovery of new possibilities. In addition to the typical external marketing activities to position FZE, the marketers influenced the staff's perception of the project as well:

*We had to market to both internal and external people. We had to make internal staff believe that we were serious about making an AAA title all by ourselves. We had to make external people believe that FZE was*

*progressing well and that we were sufficiently strong financially to proceed with such a high-budget production. We created positive media news [...] and used such news to motivate internal staff. [CEO]*

At the end of phase 2, the game received many positive reactions in the industry, and FZE negotiated a distribution rights deal with a United States (US) publisher for the game in the US and European markets.

### **2.4.3 Phase 3: Production (duration: 3 years)**

At this phase, finding a cost-effective way to deliver its contractual obligations to the US publisher was FZE's priority. The meaning of success to the CEO was now different from that in the early phases, and the logic of investing in the project had changed, as he recalled:

*We would be successful if we made it big and then we would earn a lot of money; if we don't, we will still be doing ok [...] In the early stages, I would continue investing to ensure I could make money later. Now, I want to avoid any unnecessary investment so that I can make money now. Thus, my idea of investment actually changed. [CEO]*

However, the marketing director wanted to bring the title to publishers in other regions, and the marketing department continued to incur costs when it brought FZE to global trade shows to observe how game titles or studios were marketed by other players.

*Marketing has been ongoing since day 1 of this project. We had to monitor closely the graphics, storyboard, and music of the game so that it was*



*suitable for different markets. We learned the importance of this task from our marketing experience with PC games previously. [Marketing Director]*

*[Citation]*

Upscaling its manpower resources to 200-400 people, as required by this project, would have been too expensive and too slow for FZE to undertake directly. Project cost estimations that involved every department examined different production development options in great detail. Of all the outsourcing options, the best choice was to outsource all of the routine work to a reputable overseas vendor that would give them a significant cost advantage. The CEO knew that team members would be concerned about the quality that the outsourced vendor could deliver, and he took steps to convince his team:

*I wanted to outsource the core production work, but my designer team rejected that idea... I had to convince them by showing the team that such outsourcing can be undertaken and delivered with a reasonable quality of work by delegating a small amount of work at first and then slowly increasing the amount. [CEO]*

This phase took close to three years and involved complex processes and hundreds of talented people. The production processes can be divided into the following three main streams: art work, programming, and integration. Art work included the design of all graphical elements, such as wireframes, re-useable art, 3D models, and character animations. Programming focused on the game play, artificial intelligence, and user interface. Integration included the creation of game elements, such as

voice-overs, music, sound effects, scripts, game installation, and the compilation of all of the elements above.

Employees in different disciplines had their own egos regarding the quality of their work; it was not uncommon for workers involved to propose their own alterations and modifications along the way. However, all predetermined budgets faced tight constraints, and new budgets would be allocated only in extreme situations. The practice of the ongoing design of new methods to save costs was evident because the CEO had clarified that all costs must be controlled.

*The production staff knows my response to any request related to new production budget. Most of the time [...] (approximately 99% of the time), they know I will reject the idea. They learned to work around the problem after a while. [CEO]*

To ensure that the production of game elements remained highly creative, team-building activities in the early phases continued to be held regularly in this phase. Such activities were necessary to ensure that team members could maintain the passion that they had in the early phases. With the decision to have an outsourced vendor, the project was re-engineered to reduce couplings between different components so that they could be delegated to different groups for construction. Analyses of the production workflow were undertaken regularly, and modification of the workflow were initialized at both manager and non-manager levels. For example, the communication of visual design between FZE and the outsourced vendor was difficult initially because the visual requirements could not easily be communicated using verbal explanations, sketches, or writings.

*We had to change the way we communicated our visual requirements many times [...] We sketched characters on paper for many years, but the vendor simply couldn't follow it. We had to change all of the sketches using a technical approach with first- or third-angle perspective drawings. [CEO]*

At the end of phase 3, the completed game was ready to be sent for approval, and the project entered its next phase.

#### **2.4.4 Phase 4: Marketing (duration: one year)**

In this phase, the marketing department became the lead strategist in setting FZE's direction. Because the team had fulfilled its obligation to the US publisher in the delivery of the completed title, FZE worked on obtaining regulatory approval for the distribution, the pressing of gold master CDs for the manufacturer, and exhibiting the work in different countries. The focus of the firm was to source new distribution opportunities beyond the US and European markets. During the production phase, the marketers had accumulated marketing know-how by observing how other firms had designed their marketing activities, such as how consumers reacted to graphics, music, game scenes, and artwork during tradeshow, and how local authorities, publishers, and media functioned in different countries. This information enabled FZE to strategize a business model for each region. For example, for the Japanese market, the model was to use novel public relations (PR) management with impressive trailers to attract top Japanese publishers. The timing of the release of various trial versions of the product (such as alpha and beta versions) had to be well planned so that they could be announced during key tradeshow; media kits and the design of the exhibition booth were highly localized.

*Our booth is so creative and localized that one top Japanese producer observed us closely and asked whether FZE is actually a foreign company because everything we presented was so similar to what would be presented by a Japanese firm. [Marketing Director]*

In addition to the continual effort to push the product into key markets, the firm was seeking opportunities to extend the use of artwork, game characters, and music. These opportunities were valuable and unique resources that could be licensed for revenue or co-branding purposes with minimal effort from FZE. FZE created new ways of using these assets. For instance, FZE collaborated with a global PC manufacturer at a German tradeshow to demonstrate a real-time creation of a series of screen protectors using the artwork from the title and the PC from the manufacturer to render the graphics. This co-branding activity increased market awareness of the title in Europe. The original collaboration plan between FZE and the PC manufacturer was to bundle the game title when selling a new PC; however, given the tradeshow opportunity and the people who FZE knew, the idea changed.

*This development was unexpected. We only wanted to license our products to the PC firm, but during our discussion with the partner, we noticed the tradeshow and decided that it was more valuable to co-brand our products [...] We designed an attractive real-time collaboration with people connecting from three countries. [Marketing Director]*

Marketing activities were not executed precisely as planned because there were many ad-hoc marketing activities that were initiated by new opportunities. For example, the designers and Art Director collaborated with a local institute of higher

education to create a public forum that discussed the differences in art appreciation between East and West for publicity during a flight stopover. The firm applied PR practices to further leverage the opportunity, as explained by the Marketing Director:

*Marketing activities must have 'continuity'... they cannot be a 'one-shot activity' because such activities would damage or be costly for the marketing effort. For example, when we create a forum, we follow with multiple rounds of media interviews to publish multiple articles on different days. My guideline is to have at least three shots of each key event.*

*[Marketing Director]*

The control mechanism of both planned and ad-hoc activities remained formal because decisions about these activities had to be made at the firm level with careful consideration of their impact on the control and market value of the intellectual property (IP) associated with the game title.

#### **2.4.5 Analysis of business model logic**

Our analysis focuses on the logic of value creation and capture disclosed by the informants. By tracking the logic of value creation and capture over time, we can determine how the logic of business model changed over time. Table 3 shows how the business model logic changed overtime during of this study. As shown in table 3, the business model concept becomes more articulated over time.

<b>Table 3. Business Model Logics of Study 1</b>		
<b>#</b>	<b>Business Model Logic (early logic listed first)</b>	<b>Phase</b>
1	We produce an AAA game title using minimal cost via slack resources, self-finance and access to low-cost talents.	1
2	We produce an AAA game using minimal cost via slack resources and focus on integration of content only w/o inventing new technology, within \$4M.	1
3	We produce an AAA game in Steampunk style using minimal cost via slack resources and focus on integration of content only w/o inventing new technology, within \$4M.	2
4	We produce an AAA game in Steampunk style using minimal cost via slack resources and focus on integration of content only w/o inventing new technology, within \$4M to sell to a publisher.	2
5	We produce an AAA game in Steampunk style using minimal cost via slack resources and using a reputation tool to develop the title so to enhance the quality of the title, within \$6M to sell to a publisher.	2
6	With funding from a publisher, we produce an AAA game in Steampunk style using a school to train new talents and using a reputation tool to develop the title so to enhance the quality of the title, within \$6M.	3
7	With funding from a publisher, we produce an AAA game in Steampunk style using minimal outsource talents and using a reputation tool to develop the title so to enhance the quality of the title, within \$8M.	3
8	With funding from a publisher, we produce an AAA game in Steampunk style using maximal outsource talents and using a reputation tool to develop the title so to enhance the quality of the title, within \$9M.	3
9	With funding from a publisher, we produce an AAA game in Steampunk style using maximal outsource talents with direct control and using a reputation tool to develop the title so to enhance the quality of the title, within \$11M.	3
10	With funding from a publisher, we produce and obtain approval to sell the AAA game in Steampunk style using maximal outsource talents with direct control and using a reputation tool to develop the title so to enhance the quality of the title, within \$11M.	4
11	With funding from a publisher, we produce, obtain approval and find more channels to sell the AAA game in Steampunk style using maximal outsource talents with direct control and using a reputation tool to develop the title so to enhance the quality of the title, within \$11M.	4

## **2.5 Discussion**

In this section, we discuss our analysis in the following three parts, using the theoretical lens we constructed in Figure 3: (a) we identify the different business models in each phase and examine the decision mechanisms that determine each model (left side of Figure 3); (b) we examine how the business model in each phase affects the subsequent tactics and decision-making mechanisms that determined these tactics (right side of Figure 3); and (3) we examine the iteration and its characteristics in the business model and tactics in each phase (interplay between the left and right sides of Figure 3). At the end of this section, we discuss the transition of decision mechanisms between different phases.

### **2.5.1 *Business Models and their Decision Mechanisms***

When the entire product creation is viewed as a whole, the business model of our case study is similar to that of a typical game studio in which the studio creates game prototypes and then secures a publisher to fund, market, and distribute its innovation (Srinivasan & Venkatraman, 2010; Tschang, 2007). However, analyzing the phases separately reveals a different picture of a dynamic business model. Table 4 summarizes the factors and decision-making mechanisms used to formulate the business model. The value creation and value capture logics are different in each phase, which leads to the creation of a distinct business model.

<b>Table 4. Factors and Decision Mechanisms that Determine a Business Model</b>				
<b>Development Phase</b>	<b>Phase 1: Conceptualization</b>	<b>Phase 2: Prototyping</b>	<b>Phase 3: Production</b>	<b>Phase 4: Marketing</b>
<b>Market Factor</b>	Inspiration from success stories	Promotion of tools and platforms from providers	Good supply of outsource vendors	Learn business practices in the creative industry
<b>Firm Factor</b>	Use of slack resources	Need motivation for higher goals	Unable to scale resources	Need strategy for the long term (post-project)
<b>Decision-Making Mechanisms of business model</b>  <i>(Sample extracts from Section 2.4)</i>	<b>Who I am (Effectual)</b>  <i>"There are many ways of making money, but I selected this career because it is what I like to do." (CEO)</i>	<b>Whom we know (Effectual)</b>  <i>"This is a great opportunity for me. I have worked on more than 70 games, but this one is different." (Music Director)</i>	<b>Cost Analysis (Casual)</b>  <i>"We had to monitor closely the graphics, storyboard, and music of the game so that it was suitable for different markets." (Marketing Director)</i>	<b>Position Analysis (Casual)</b>  The marketers designed their marketing activities FZE to strategize a business model for each region.
	<b>What I know (Effectual)</b>  <i>"Not everyone believes we have the capability to create a successful console game [...] because we can self-fund the project if necessary, why not?" (CEO)</i>	<b>Affordable loss (Effectual)</b>  <i>"I give each person a scope, similar to drawing a circle as a boundary for each person [...] the circle defines the constraint but also gives the person the freedom to be creative inside that circle." (CEO)</i>	<b>"I want to avoid any unnecessary investment so that I can make money now." (CEO)</b>	<b>Market Analysis (Casual)</b>  The firm analyzed the market so to create opportunities to extend the use of artwork, game characters, and music.
<b>Business Model as outcomes from the decision-making mechanisms (in narrative)</b>	<b>Aspiration driven</b>	<b>Novelty driven</b>	<b>Efficiency driven</b>	<b>Strategy driven</b>
	We capture value if we can create a good game that consumers want four years later. A good game will sell by itself via the existing gaming market.	We capture value by securing a reputable publisher without giving up all rights. We aim for an AAA game with excellent prototypes to increase our success rate.	We capture value by saving cost. To deliver our promises with minimal cost, we must outsource a large part of our production.	We capture value by enhancing and licensing the existing IP. To enhance IP, we brand our firm, product, and its elements, such as characters and music of our title.
<b>Value-Creation Logic</b>	A good game that consumers want four years later.	Create an AAA title that can attract market attention.	Deliver our obligation within our budget.	Create the market reputation of the title and firm.
<b>Value-Capture Logic</b>	A good game can sell by itself via the existing gaming market.	Secure a reputable publisher without giving up all rights.	Our profits will be maximized if we can minimize our costs.	Use IP management to find new sources of value capture.



In the conceptualization phase, the business model is *aspiration driven*. The decision-making mechanisms of the business model consist mainly of effectual processes to leverage on existing internal and external resources, such as software tools, platforms, and the ecosystem of the game market. The firm's main source of knowledge about the industry was public information. This public information about the creative industry often communicated the success stories of developers, studios, and game titles, in addition to the marketing information required to promote the tools, platforms, and opportunities for developers and studios to enter the market. This resource was particularly attractive to firms that had already been in the market with highly passionate developers and designers seeking opportunities to advance their careers. Imagining the possibilities with existing employees and fulfilling individual aspirations to create something great, the firm reflected its own identity on "who we are" (Cooper & Thatcher, 2010; Sarasvathy, 2001). This exercise led to the common belief that having a good game is sufficient for its success.

In the prototyping phase, the business model is *novelty driven*. When the firm began to experiment with technology and work processes, new knowledge and capabilities were fostered within the team, which generated new possibilities and tools that had not been available before. The new tools led to new and often better choices for the firm to select as new goals. This phase prepared the firm with sufficient knowledge to predict and control the production processes and the quality of the output in the production phase. However, there was no predefined set of criteria to control how far the firm might go in trying out new technology or better ways to coordinate tasks among team members and across different departments. Thus, the "affordable loss"

principle of effectuation was communicated to control the budget (Sarasvathy, 2008). As the prototype received more positive feedback, the confidence of the team was boosted to a new level, and they changed their product position from an AA title to an AAA title, which represented a significant “upgrade” of their initial goal.

The business model in the production phase is *efficiency driven*. The effectual processes used in the early two phases were replaced by causal processes. At this stage, the high-level requirements of the product were defined, the budget was estimated and allocated, and the studio committed to a schedule for the publisher—there was little room to change goals. Most actions in this phase were about efficiency in value creation. The value-creation logic is to meet the product requirements established at the end of the previous prototyping phase. Conversely, the value-capture logic is not about receiving payment from consumers or publishers but about spending less such that new funding from the publisher and cost savings gained by efficiency may lead to profits, even at this phase. The causal process of selecting a business model involved a detailed cost analysis that deployed various production options. Thus, outsourcing was a major source of “profit” when a large part of the production could be off-shored.

The business model in the marketing phase is *strategy driven*. Causal processes were applied in this phase because marketing-related information was more accessible to the firm now because a firm can gain legitimacy in the industry when it carries a reputable product on hand, and industrial actors, such as regulators, intermediaries, and regional distributors, in various countries are more open to share their insights into the market with the firm. For each transaction negotiated with different players

in the industry, the firm accumulated new knowledge in terms of business practices, contractual terms and conditions, and market prices for various licensing options. The additional information enabled the firm to better predict the responses of actors in the market and product sales. To gain access to more markets and to generate better returns by licensing IP, the firm used causal processes to analyze its strategic position and to re-position its product in different countries to gain a better reputation.

### **2.5.2 *Tactics and their Decision Mechanisms***

Tactical choices are based on the business model selected. The decision-making mechanisms that create these tactics may be effectual or causal processes. The decision-making processes for the business model are mainly undertaken by CEO or top management; however, the creation of tactical choices and the selection of tactics are likely to be undertaken by managers or professionals. Table 5 summarizes the decision-making mechanisms, tactics, and logic in each phase of the project.

**Table 5. Factors and Decision Mechanisms that determine Tactics**

Development Phases	Phase 1: Conceptualization	Phase 2: Prototyping	Phase 3: Production	Phase 4: Marketing
<b>Decision Mechanisms</b>  <i>(Sample extracts from Section 2.4)</i>	<b>Who we are (Effectual)</b>  <i>"It is easy for me to motivate them [...] because I already know what they want." (CEO)</i>	<b>Technology analysis (Causal)</b>  The team tested and experimented with various technical features to discover new possibilities and constraints.	<b>Production analysis (Causal)</b>  Analyses of the production workflow were undertaken regularly, and modification of the workflow were initialized at different levels.	<b>Marketing partners (Effectual)</b>  FZE collaborated with a PC manufacturer to use the artwork from the title and the PC from the manufacturer to increase market awareness of the title in Europe.
	<b>Pre-commitment (Effectual)</b>  <i>"People entering our industry typically receive a lower salary compared to their peers in other industries; it is the desire to be a game artist or developer of a successful title that keeps them here" (CEO)</i>	<b>Work culture Analysis (Causal)</b>  Redesign of structure and processes helped to work conflicts due to disciplinary differences between creative and engineering activities.	<b>Contract analysis (Causal)</b>  <i>"We had to change the way we communicated our visual requirements many times. We sketched characters on paper for many years, but the vendor simply couldn't follow it." (CEO)</i>	<b>Strategy alliances (Effectual)</b>  The designers and Art Director collaborated with a local institute of higher education to create a public forum during a flight stopover.
<b>Tactics</b> (guided by the business model in Table 4)	Adopt game style from own preference	Select best IT tools	Modularize IT components	Build distribution channel
	Use existing resources (people, funding, and knowledge)	Design effective team and processes	Control productivity from outsource vendor	Enhance firm's reputation
<b>Core Logic of Tactics</b> as outcomes from the decision-making mechanisms (in narrative)	We select a style we like and minimize cost via slack resources, self-financing, and access to low-cost talents.	We use premium tools to attract publishers and restructure the team and work processes to be more effective.	We outsource routine works but ensure high quality by modularizing our processes and architecture.	We use marketing activities to build reputation, negotiate better deals, and obtain content approval in more regions.

In the conceptualization phase, tactics are driven by social interactions. The pre-commitment principle of effectuation must be undertaken in face-to-face social interactions both between management and members and among members. The empirical studies of interactive strategizing established by Jarzabkowski (2005) (Jarzabkowski, 2004) and of social interaction that influences change in organizational and managerial schema by Balogun and Johnson (2004) reveal how organizational assets emerge from social interactions (Balogun & Johnson, 2004). The force of environmental selection has little impact on the firm because the CEO strongly believes that a good game can 'sell by itself'. Thus, social interaction focuses on the conceptualization of the best possible game with little consideration of technical and resource constraints (Tschang, 2007). Social interaction of this nature creates a culture by individuals telling themselves and others that they are "a group of crazy people" (as described by the CEO), which helps build a strong identity that differentiates them from others (Tschang, 2005).

In the prototyping phase, social interactions in the early phase are insufficient to resolve many of the tensions caused by conflicting needs and operational issues that result from unfamiliarity with the new technology and by the different cognitive models among different disciplines. Technological and cultural analyses are the two causal processes used to create tactics that help resolve technical and cultural issues, respectively; in the process, social order and organizational culture are developed within the firm, which builds up social-culture embeddedness that facilitates the interpretative legitimacy of decision making (Dacin, 1999; Jarzabkowski, 2003). For instance, the social order in setting up boundaries to balance rationality and

creativity (Tschang, 2007) allows each department (and, to some extent, each individual) to express their creativity within predetermined boundaries.

In the production phase, the outsourced vendor appointed by the firm utilized significantly more headcounts than the firm; resources of the firm must be allocated to coordinate and control deliverables from the vendor. Coordination at multiple levels between the firm and external vendor is required because each level has its own set of social and technical issues. For example, at the working level, the use of perspective drawing was a new tactic to overcome the vendor's inability to create game characters exactly the way the firm expects; at the business level, the use of direct control of vendor's manpower was a new tactic to overcome inefficiency resulting from communication barriers. The tactical actions deployed at different levels and regions influence one another over time. Using causal processes as the dominant decision-making mechanism, this phase establishes a social-technical system using continuous analyses of existing production and performance of the outsourced vendor to help predict the future.

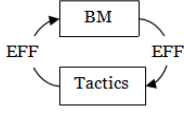
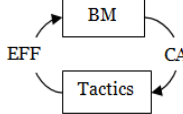
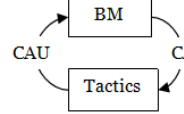
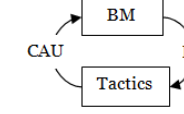
In the marketing phase, the marketing strategy and tactical actions are decided by managers and a heterogeneous group of partners and individuals across different countries. The effectual processes use a pre-commitment principle to engage alliances for co-branding in tradeshow and a means-driven principle to explore new opportunities by sourcing new ways of participating in tradeshow or entering into new markets (Sarasvathy, 2001). The use of local strategists is necessary when the local market is from a different culture. For example, both publishers and consumers in Japan have a different view in the appreciation of artwork, graphics, and animation

compared to those in the West. The use of effectual processes helps to establish an ecosystem comprising different strategists across regions, levels, and disciplines to support the commercialization of the new product.

### **2.5.3 *Interplay between Effectuation and Causation***

Table 6 summarizes our preliminary findings of four decision mechanism configurations, which represent four different permutations of effectual and casual decision-making mechanisms (effectuation and causation) and the business model and tactics. Each configuration has its own unique interplay of characteristics between the business model and tactics. We name these interplays as *effectuation-centric*, *discovery-centric*, *causation-centric*, and *tactics-centric*, and each scheme effectively represents a type of business model dynamic.

**Table 6. Interplay Between Effectuation and Causation**

Interplay	Effectuation-centric	Discovery-centric	Causation-centric	Tactics-Centric
<b>Configuration of Decision Mechanisms</b> (CAU: Causation EFF: Effectuation)				
<b>Interplay Characteristics</b>	Starting with “who we are”, the firm determines a business model and tactics that are viable and inspired.	The business model is broadly defined, and tactics are systematically undertaken and designed to validate and revise the business model.	Based on well-defined business models and tactics, the firm overcomes contingencies along the way and updates the business model only if required.	The business model is well defined, but tactics are broadly defined. Tactics are revised from contingencies, and the business model is updated only if required.
<b>Interplay Outcome</b>	Converging the cycle of constraints on goals and means.	Expanding cycle of resources.	Combining cycle of resources.	Formalizing cycle of selection of goals and means.
<b>An example of Business Model</b>	Aspiration driven	Novelty driven	Efficiency driven	Strategic driven
<b>Market Factor</b>	Inspiration from success stories	Promotion of tools and platforms from providers	Good supply of outsource vendors	Learn business practices in the creative industry
<b>Firm Factor</b>	Use of slack resources	Need motivation for higher goals	Unable to scale resources	Need strategy for the long term (post-project)
<b>Transition</b>	<b>Effectuation-centric → Discovery-centric</b>	<b>Discovery-centric → Causation-centric</b>	<b>Causation-centric → Tactics-centric</b>	
<b>Transition of Activities</b>	From ideas to the actual practice of using new tools and processes and gaining access to platforms and communities.	From experimentation to the actual investment of new resources and gaining access to global talents.	From no product to a new product and gaining legitimacy in the industry to position the firm and license the product.	
<b>Transition of Decision-Making Mechanisms</b>	Reduce the inspiration-driven approach and increase the engineering-driven approach to discover flawed assumptions made in the early stages.	Reduce flexibility in changing the business model as new resources are acquired and configured to optimize output.	Increase flexibility in marketing strategy and tactics without changing the core business model to develop marketing capability in a new market.	



When the configuration of decision mechanisms is *effectuation-centric*, effectuation is the dominant decision mechanism for both the business model and tactics. Both decision mechanisms (i.e., the left and right arrows in Table 6) interact to create means and goals for the business model and tactics. Effectuation-centric decision-making mechanisms are used by expert entrepreneurs (Dew et al., 2009) when they are starting a new venture, creating a new product, or entering a new market. The lack of predictability that results from operating in a new landscape restricts them to deploying a causal approach in both their business model and the creation of their tactics. The conceptualization of the initial product idea reflects the aspiration of the entrepreneurs; by means of social interaction among stakeholders, the effectuation processes instills pre-commitment, inspiration, and understanding of one another's affordable loss. The business model and tactics are changeable as long as the decision makers perceive that they have control of the situation. Beginning with an open mind and considering all possible goals and means that they perceive to have control over, the iteration creates a converging cycle of constraints on goals and means over time.

When the configuration of decision mechanisms is *discovery-centric*, effectuation is the dominant decision-making mechanism for the business model and causation is the dominant decision-making mechanism for tactics. The business model is broadly defined initially to allow the model to be revised based on contingencies during tactical actions. However, the decision-making mechanisms for tactical actions, unlike those for the business model, take a systematic approach to accelerate the acquisition of knowledge in new technologies, in new work processes under new

organizational structure, and in new markets via contacts with industry players and target customers. The new knowledge gained from tactics can trigger a revision of the business model in unpredicted ways. For example, novel solutions from experiments with new technologies may trigger the business model to revise value creation and capture. The discovery-centric configuration emphasizes a systematic way of generating tactical choices and tactic selection at the initial stage and allows for flexibility in the determination of the final business model. The iteration creates an expanding cycle of resources in this model, introducing new resources to the firm for every revision of its business model (Wiltbank et al., 2006).

When the configuration of decision mechanisms is *causation-centric*, causation is the dominant decision-making mechanism for both the business model and tactics. The absence of effectual processes in this configuration reflects the fact that both the business model and tactics are driven by the ability of the firm to predict the future more than it can control the future. Sufficient knowledge is required to make accurate predictions of the market, to guide the design of the business model, to predict the firm's operational capability, and to guide the tactical plan accordingly. Once the business formulation and the tactical plans are in place, the firm turns its full attention to the execution of tactics and overcoming contingencies along the way to meet the planned objectives. A business model derived from causal process is less likely to be revised by tactics because the inertia of goals and means determined during business model and tactics creation emerges over time as resource reconfiguration occurs. In our case study, there was minimal variation observed in the value creation using outsourcing for cost-saving and the value capture using

funding from the publisher for two reasons. First, the decisions made were based on cost-benefit predictions. Second, tactics stabilized over time once various processes to control the outsource vendor were in place. In the *causation-centric* phase, the interaction between the business model and tactics is minimal, but the iteration of mean revisions is relatively more dynamic—this configuration reflects a goal-driven model.

When the configuration of decision mechanisms is *tactics-centric*, causation is the dominant decision-making mechanism for the business model and effectuation is the dominant decision-making mechanism for tactics. In our case study, causal processes were used to design the business model with careful consideration of the positioning of both the firm and product—although the firm has little knowledge about how exactly this positioning might be achieved. The business model is stable because it is formulated using causal processes, but the design of tactics is highly dynamic initially, with frequent revisions of tactical goals and means. Typically, tactics involve external parties using effectuation principles, such as pre-commitment and strategic alliances (Sarasvathy, 2008). However, the use of effectuation processes in tactics will gradually diminish and eventually be replaced by causation processes because of the nature of inertia in the business model. The replacement of processes effectively transforms the tactics-centric configuration into a causation-centric configuration. An application of this concept is that a firm that has established a strategic-based business model may modify such a model into an efficiency-based model to enjoy the competitive advantages created from the early strategy-based business model. The dynamics of the tactics-centric configuration create a formalizing cycle of the

selection of goals and means because each cycle implies a more formal way of creating means and goals as the firm's predictability increases.

We will now examine how decision mechanisms transition from one configuration to another. In each transition, only one of the two decision mechanisms (i.e., for business model and tactics) will be changed. For example, in the transition from effectuation-centric to discovery-centric configurations, only the decision mechanism for tactics changed. During that transition, the firm began to utilize new tools to test some of the core ideas that had been generated in the early stages. The firm gradually reduced its use of the inspiration-driven approach and increased its use of the engineering-driven approach (e.g., using results from systematic experimentation) in making tactical decisions. However, the business model decision was still largely guided by effectual principles, such as "affordable loss," and the firm remained open to a business model revision when it discovered that false assumptions had been made in the early stages. The last three rows of Table 6 list the three transitions and describe the transition of activities and decision-making mechanisms.

## **2.6 Conclusion and Limitations**

Our analysis adds several insights into the linkage between effectuation, causation processes and business models in the context of new product creation, and we hope it advances our understanding of the dynamics of the business model in significant ways. We argue that effectuation and causation processes can co-exist and that they are configured in specific ways at different phases of new product creation. The decision mechanisms are influenced by internal and external market factors, the

nature of activities of a phase, and the interplay between the business model and tactics. Knowing how decision-making mechanisms are configured helps us to understand the characteristics of a business model, the generation and selection of tactics, and, more importantly, how a business model evolves over time.

Answering calls for research into the dynamics of the business model (Amit & Zott, 2001; Morris et al., 2005), we combine multiple theoretical lenses (Okhuyen & Bonardi, 2011) to develop new explanations of business model phenomena. We introduce an entrepreneurial approach to discover the linkage between decision-making mechanisms and business model dynamics. Our findings answer the two broad research questions discussed earlier. First, we find that the business model changes in different phases of new product creation. The main reasons for these changes are the result of the different nature of project activity in each phase and the accessibility of critical information. In the context of the process of new product creation, we identify the following four different business models: *aspiration driven*, *novelty driven*, *efficiency driven*, and *strategy driven*. Second, similar to the decision-making mechanisms for business models, we find that the decision-making mechanisms for tactics may be dominated by causal or effectual processes. This finding implies that in addition to expert entrepreneurs, managers and professionals also deploy effectual processes in certain configurations. Tactical actions may influence upward to trigger a revision of the business model when actors detect flawed assumptions in the business model or discover new opportunities.

For each business model identified, we explore further to analyze how each evolves. We focus our analysis on the interplay between the business model and tactics and

suggest four configurations (*effectuation-centric*, *discovery-centric*, *causation-centric*, and *tactics-centric*) of decision-making mechanisms—each reflects a specific type of business model dynamic. Each of the four business models has its distinct features in the way its business model is formulated, and the models that we have identified in our case are merely examples of business model outcomes derived from these four configurations.

The theoretical insights on the linkage between decision-making mechanisms and business models have practical implications for new product creation. Specifically, managers and professionals should apply both effectual and causal processes when formulating a business model and implementing tactics. In certain stages of the project cycle, one of these processes is emphasized more than the other; in other stages, both processes are used complementarily. It is advantageous for managers to be aware of the characteristics of the two contrasting decision-making mechanisms.

Our study has limitations, and here, we suggest several areas for future research. First, although we find substantial support for the four business models occurring in different phases, the configurations that we identified do not tell us how much control a firm can have when decision makers design the business model and tactics. Such an analysis involves a deeper understanding of a firm's subjectivity in interpreting firm-internal and market-external factors under the conditions of bounded rationality. Second, we categorized decision-making mechanisms into effectuation and causation approaches based on the extent to which the mechanism utilizes the principles suggested in effectuation theory. The precision of the

classification can be improved only when validated measures of causation or effectuation processes are developed further (Brettel et al., 2012; Chandler et al., 2011). Perhaps sub-processes will be developed in the future to provide more insights into the dynamics of decision making.

The business model represents the blueprint of any business or project initiative because it depicts the logic of the firm and how it intends to operate. Its role as an opportunity facilitator guides its formulation and the tactical actions that will be undertaken by the firm; it also triggers revisions of itself throughout the creation of the new product. Our study demonstrates that coupling the business model and entrepreneurial approach will be beneficial to advance our knowledge of business model dynamics.

### **3. Study 2: Discovery-Exploitation Interaction<sup>2</sup>**

#### **3.1 Motivation**

The business model depicts the logic of the enterprise and, in particular, it outlines how an enterprise creates and captures value. In a large enterprise, the initial design of its next business model is likely to be a conceptual model that lacks sufficient details for immediate implementation. As such, business managers are likely to organize processes to add these details. Because the creation of a business model is fundamentally the creation of a business idea to pursue entrepreneurial opportunities, we adopt an entrepreneurial opportunity perspective to examine

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<sup>2</sup> This study was presented in 2013 International Conference on Information Systems (ICIS) as *research-in-progress*.

business model development – the process from the conceptualization to realization of a business model. In this sense, we view opportunities as “situations in which it is possible to recombine resources in a way that generates a profit” (Shane, 2012, p. 15).

To address the research gap in which “the mechanisms by which the underlying opportunity and the business model are interconnected have not been explored” (George & Bock, 2011, p.88), this study explores the role of information systems (IS) strategy for two reasons: (a) IS strategy can be a sense-making device to explore technological capabilities and new opportunities (Galliers, 2011), and (b) IS strategy needs new approaches, as we cannot assume that the positioning decisions of the business managers are correct and do not change:

*“From an alignment perspective, IS strategy no longer can assume that the firm is positioned in profitable product markets to start with. Rather, it must recognize the dynamic shifts in the profitability levels of product markets and enable the firm to identify emerging profitable product markets. Aligning IS strategy with competitive strategy alone might offer limited and inconsequential results. The alignment quest needs to tackle how the IS strategy co-evolves with both corporate strategy and competitive strategy together” (Tanriverdi et al., 2010, p.826).*

In the field of entrepreneurship, opportunity discovery and opportunity exploitation are two core processes in opportunity development (Shane & Venkatraman, 2000). They may not follow “a rational, planned, strategic, or even temporally ordered sequence” (Shane, 2012, p.14). We posit that there are effective IS strategies that



enable opportunity discovery and exploitation to develop a business model. However, IS strategy as it relates to opportunity processes has been greatly overlooked by the IS literature. In response to calls for research on IS strategies that enable the dynamic repositioning of an enterprise (Tanriverdi et al., 2010) and on business models that can potentially deepen our understanding of information technology (IT)-driven entrepreneurship and of the IS discipline (Clemons et al., 2013), the research question we pose is as follows: *How do IS strategies enable opportunity discovery and opportunity exploitation in the context of business model development?*

To address this question, an in-depth case study of a large enterprise was conducted. This study is organized as follows: we first review the past research on business models, IS strategy and opportunities in the context of business model development. The research methods are then explained, followed by the case analysis and findings. Our findings theorize the use of IS strategy as the facilitator of opportunity processes to generate new opportunities for the enterprise to develop its business model. We conclude our study by acknowledging a few limitations.

## **3.2 Literature Review**

### **3.2.1 Business Model**

A business model has been referred to as “a statement, description, a representation, an architecture, a conceptual tool or model, a structural template or a framework, a pattern and a set” (Zott et al., 2011, p.4) that abstracts a firm’s activities (Seddon et al., 2004; Zott & Amit, 2010), components (Morris et al., 2005; Osterwalder et al., 2005), logic of how it conducts business (Casadesus-Masanell &

Ricart, 2010) or organizational narrative (Magretta, 2002). At least four business model views have been identified: representational, functional, pragmatic and systemic view (Jensen, 2013). Although there is no consensus on the definition of a business model, emerging themes have treated business models as holistic views that link value creation, value capture, and stakeholders (Zott et al., 2011). Consistent with these emerging themes, we refer to a business model as the expression of “*the logic of the firm, the way it operates and how it creates values for stakeholders*” (Casadesus-Masanell & Ricart, 2010, p.196).

Many frameworks that depict the components on which the *logic of the firm* can be operated have been proposed (e.g. Al-Debei & Avison, 2010; Hedman & Kalling, 2010; Morris et al., 2005; Osterwalder et al., 2005). These frameworks can guide business managers to formulate the core logic of value creation and capture. It has been suggested that value creation and capture “can be concisely represented by an interrelated set of elements that address the customer, value proposition, organizational architecture and economics dimensions” (Fielt, 2013, p.99). Magretta (2002) suggests two critical criteria to assess a business model. First, the *narrative logic* of the business model must be coherent. The narrative logic of the business model may constitute the coevolution of storytelling among stakeholders, lending “itself to an institutional framework that incorporates organizational narrative” (George & Bock, 2011, p. 87). Similarly, Nenonen & Storbacka (2010) suggest that business model components should be connected in a way that reinforce each other to reflect harmony or consonance within a single theme. Second, the numbers associated with the narrative must produce the desired outcomes. We use the term

*calculative logic* as the interpretative logic of quantitative data. The calculative logic that used to derive and connect the numbers associated with business models may not aim to predict the future as long as entrepreneurs can control the future using effectual processes (Sarasvathy, 2001). Doganova & Eyquem-Renault (2009) used the concept of calculative devices as market devices (Callon & Muniesa, 2005) to analyze business models and found that entrepreneurs used business models as narrative and calculative devices to explore a market.

At the enterprise level, a business model is commonly conceived as the result of strategic choices - it may be a reflection of an enterprise's realized business strategy (Casadesus-Masanell & Ricart, 2010), an abstraction of certain aspects of that business strategy (Seddon et al., 2004) or a form of architecture used to establish competitive advantage selected by that business strategy (Teece, 2010). Not only can a business model be the center of an organizational narrative to communicate strategic choices (Osterwalder et al., 2005; Shafer et al., 2005), it forces an enterprise to focus "attention on how all the elements of the system fit into a working whole" (Magretta, 2002, p. 90). In this sense, a business model can guide "the myriad of choices and actions involved in execution" more effectively than the traditional business strategy frameworks (Richardson, 2008, p.135).

While the static view of a business model is useful to describe the configuration of components, the dynamic view is useful to address change (Demil & Lecocq, 2010). Both business strategy and business model development are closely linked, as the business model reflects business managers' hypotheses about stakeholder behaviors (Magretta, 2002; Teece, 2010). A dynamic view of business models has received

some attention recently. For examples, strategic experimentation as a series of tests can be designed to minimize risk and maximize learning to revise a business model (Yunus et al., 2010) and organizational learning to leverage business model change as a business strategy renewal mechanism (Sosna et al., 2010); a systematic process to design business model change (Cavalcante, 2014); instead of an analytical approach, strategies are deployed to discover new business models by experimenting and learning (McGrath, 2010).

### **3.2.2 Information System Strategy**

In the strategic alignment research (Aversano et al., 2012; Chan & Reich, 2011; Henderson & Venkatraman, 1993), the central goal of IS/business alignment is difficult to attain under the condition of an ambiguous or unknown business strategy (Chan & Reich, 2007) or under an evolutionary and emergent nature of the alignment (Benbya & McKelvey, 2006). Moreover, the advantages gained from such an alignment are short-term as the environment continues to change, slowly or rapidly (Sabherwal et al., 2001). Researchers has recently shifted their attention from a static to a dynamic view of IS strategy, reflecting the coevolutionary nature of IS and business. For example, IS/business alignment can be viewed as a function of evolutionary dynamics across individual, operational and business levels (Benbya & McKelvey, 2006); during the process of strategizing IS strategizing, information infrastructure can be the supportive context for learning and interaction to explore new business opportunities while exploiting existing technology (Galliers, 2011); additionally, the strategic IS domain can be viewed as a complex adaptive system

that co-evolves information technology and “organizational capabilities and business models to create social and economic value” (Merali et al., 2012, p.125).

Chen et al. (2010) argue that conceptualizing IS strategy as a shared view of IS roles within an organization is a more generic and promising concept, as it allows an organization to select a position between the two extreme concepts of using IS to support business strategy and of creating an IS master plan. In an empirical study of nine large enterprises and their subsidiaries, researchers found that none of them used a specific methodology to link business and IS strategies (Mohdzain & Ward, 2007). From an intellectual dimension, enterprises should consider all the dominant alignments (namely, *strategy execution, technology transformation, competitive potential and service level*) as “alternative conceptual lenses and be prepared to continuously make adaptations” (Henderson & Venkatraman, 1993, p. 482). However, the establishment of a shared IS view is more influenced by the social dimension, such as the choice of actors and decision making, than the intellectual dimension (Reich & Benbasat, 1996 & 2000). Similarly, Chan (2002) finds that informal organization structures are indeed more important than formal structures (p. 110).

Drnevich & Croson (2013) argue that IS strategy should go beyond its functional role to offer a set of business strategic alternatives and value-creation opportunities that an enterprise may pursue. Otherwise, a functional-level role of IS strategy often focuses on defending current positions without questioning whether they are correct (Tanriverdi et al., 2010). It is valuable to involve stakeholders with different IS capabilities, as they can co-create new value via their collective strength (Sarker et al., 2012). To obtain such collective strength, the concepts associated with business

models can help create “a common language and shared comprehension” of business strategy (Osterwalder et al., 2005, p.18) and provide a cognitive frame for managers, entrepreneurs and developers to influence technological outcomes (Baden-Fuller & Haefliger, 2013). IS-driven business model development can potentially facilitates organizational transformation, which “is still a new frontier for strategic information systems research” (Besson & Rowe, 2012, p.103).

### **3.2.3 Opportunity**

The creation of a new business model is an enactment of entrepreneurial opportunity (George & Bock, 2011) in which opportunity is “an idea or dream that is discovered or created by an entrepreneurial entity and is revealed through analysis over time to be potentially lucrative” (Short et al., 2009, p.55). Grounded in earlier contributions to the field of entrepreneurship, opportunities have been defined as “situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships” (Eckhardt & Shane, 2003). Unlike earlier definitions (Shane & Venkatraman, 2000), this definition, which reflects the dominant view today (Short et al., 2009), explicitly states that opportunities can be based solely on new means or new ends.

The nature of opportunity has also been the subject of studies. Scholars have categorized opportunities differently based on the studies or perspectives they have selected. For example, in analyzing the role of opportunities, Eckhardt & Shane (2003) categorized opportunities using three dimensions based on subjective and objective aspects: the locus of change that generates opportunities, the sources of

opportunities, and the initiator of change. Murphy (2011) used pluralism's ontology to characterize the nature of opportunities. Based on the notion of temporal distance, Tumasjan et al. (2013) studied the effects of the desirability and feasibility of opportunities. In addition, Companys & McMullen (2007) proposed six subtypes of opportunities (technological, market, producer, consumer, network, and political opportunities) based on the economic, cultural cognitive and sociopolitical schools.

Opportunities appear to be abundant, but it is not necessarily true that individuals or firms will always recognize them. For example, an empirical study has shown that the prior knowledge of markets, ways to serve markets, and knowledge of customer problems influence the discovery of technological opportunities (Shane, 2000). Compared with our understanding of opportunities themselves, we know little about the processes in which individuals or firms discover or exploit opportunities. There is much debate on whether opportunities are found through a process of 'discovery' or one of 'creation' (Alvarez & Barney, 2007). Alvarez et al. (2012) suggested that the information and decision-making settings used in the processes of discovery and creation are different; the former is a knowledge-driven process that allows for risk-based decision-making, and the latter is a socially driven process that enables incremental, inductive, and intuitive decision-making. However, Short et al. (2009) believe that scholars will move toward a middle ground in which, depending on the context, certain opportunities are perceived to have been discovered, whereas others are created.

Opportunity discovery and opportunity exploitation are two core processes of entrepreneurship (Shane & Venkatraman, 2000). *Opportunity discovery* is a process

used to “perceive a previously unseen or unknown way to create a new means-ends framework” (Eckhardt & Shane, 2003, p.339); *opportunity exploitation* is a process used to acquire resources or engage in activities to exploit an opportunity. Shane (2012) has emphasized that these processes (inclusive of other processes such as identification and evaluation) do not necessarily follow a planned sequence. The dynamics of business model development can be understood from a practice perspective, through the exploration and exploitation of business opportunities and competitive advantages (Ahokangas & Myllykoski, 2014).

Entrepreneurial processes are not restricted to individual entrepreneurs but may also be embedded in corporate processes at the enterprise level. Enterprises can design their structure, culture, resource, and reward systems to enable entrepreneurial processes to leverage growth- and advantage-seeking opportunities (Ireland et al., 2009).

The model of corporate entrepreneurship strategy developed by Ireland et al. (2009) specified an organizational architecture that can prompt and reinforce opportunity recognition and exploitation. For example, the resources related to markets and technology that enhance forecasting proficiency are required to recognize opportunities, whereas the resources associated with flexibility and decision-making support may be used to exploit already-recognized opportunities (Covin & Slevin, 2002). However, forecasting tools often offer less support with the emergence of new business models because there is typically an absence of historical data associated with the new model (Doz & Kosonen, 2010).



### **3.3 Research Methodology**

We adapted an in-depth case study as our research methodology because the study of IS strategy for opportunity development has had little empirical substantiation (Eisenhardt, 1989), and an inductive method is more suitable for exploring a ‘how’ question (Walsham, 1995). Furthermore, our phenomena are complex and cannot be easily separated from their organizational context (Langley, 1999). We used an interpretive approach not only so that the theoretical lens of opportunity development processes can be served as the sensitizing device using prior knowledge (Klein & Myers, 1999) but also so that it allows new findings to emerge from the data (e.g. Ravishankar et al., 2011). There are rich prescriptions (Klein & Myers, 1999; Pan & Tan, 2011; Walsham, 2006) for the conduct of case research in a manner that allows the exploration of conceptual arguments and generalization of theoretical statements. In accordance with the instrumental case research strategy (Stake, 1995), our primary focus is to seek a deeper understanding of the issues related to IS strategy and opportunity processes, whereas the case itself is of secondary interest.

#### **3.3.1 Case Study**

We examined the LEX enterprise (not its real name), a large supplier of diversified products and services in the Chinese agricultural products (e.g., wheat, corn, rice, and sugar) and food industries. In addition to branch offices located in different countries, LEX operates through 12 business entities, more than half of which are publicly listed in China and Hong Kong. Except for real estate and financial services entities, all of LEX’s business entities are connected to China’s food chain ecosystem to different degrees. Although the outputs generated from the value chain of one

business entity can be inputs for the value chain of another, the entities in our study did not require close collaboration with the others due to their autonomy. In March 2009, the Chief Executive Officer (CEO) of LEX announced the highly ambitious goal of creating a *Fully Integrated Value Chain* (FIVC) that aimed to integrate many of its business entities to create new growth. The CEO's opening statement regarding the new business model was as follows:

*"The FIVC is not a closed but an open system. It consists of multiple chains and comes in different forms and sizes. Each chain stimulates other parts of the system, and value adds to the overall performance. Thus, the FIVC is our new model for growth. It is a strategic choice and is also our goal, and it reflects our philosophy of how LEX operates" (CEO March 2009).*

There are three reasons why the FIVC of LEX was selected for our study. First, the vision of the FIVC depicts a new business model that connects multiple autonomous business entities; thus, there would be multiple years of data from different perspectives for the study. Second, the IS organization (CORP-IS) was responsible for fulfilling the mission of the FIVC; thus, CORP-IS and its strategic actions were expected to play a key role in the business model development. Third, LEX provided us with adequate access to the executives who strategized IS and those who strategized business-to-business entities in the FIVC. Given the rich data available to us in this single-case study, we aim to generalize certain theoretical statements from our empirical research (Lee & Baskerville, 2003; Walsham, 1995).

### **3.3.2 Data Gathering and Data Analysis**

Before entering the field from June through August of 2012, we gathered background information on LEX's organizational structure, the ecosystem of the agricultural products and food industry in China and the entrepreneurial vision of the FIVC to understand our context. In September 2012, we visited the site and conducted 15 semi-structured, open-ended, 60-90 minute interviews with key decision-makers for both IS and business strategies (see Table 7). In the initial stage, we conceptualized the phenomenon with a simple theoretical lens to guide our data collection. We focused on the influencing factors that underlie key strategic IS actions during the development of the business model. In addition to those strategic actions, actions that had been considered but did not occur were collected as well. We obtained additional data by scanning secondary data from internal documents (e.g., additional scripts from the CEO's past interviews), internal publications written by senior managers (e.g., 48 articles on value chain management, 18 articles on IS, and 124 articles on business models), and external publications. The scanning process was undertaken from October 2012 through January 2013. Using multiple sources and interpretations helped to reduce self-reporting bias and resolve any incongruence during the collection of these extra data. As the scanning proceeded, an extended theoretical lens that included the narrative and calculative logics of the business model emerged from our initial data analysis.

Table 7. List of Informants in Study 2	
Group	Informant
Business Entity	<ul style="list-style-type: none"> <li>• Chief Technology Officer, consumer food</li> <li>• Chief Financial Officer (CFO), consumer food</li> <li>• Vice President (VP) of Operations, consumer food</li> <li>• VP of Operations, fruit/vegetable production</li> <li>• VP of Operations, meat production</li> <li>• President, e-commerce business</li> <li>• VP, e-commerce business</li> <li>• VP of Operations, e-commerce business</li> <li>• CFO, agricultural products</li> <li>• VP of Strategy Planning, corporation</li> </ul>
IS Organization (CORP-IS)	<ul style="list-style-type: none"> <li>• President</li> <li>• VP</li> <li>• Senior Manager (2 sessions)</li> <li>• Development Executive</li> </ul>

Figure 4 shows informants grouped by their entities, units or roles in the implementation of the FIVC. The FIVC becomes the focus point or platform where different stakeholder groups assume their unique roles.

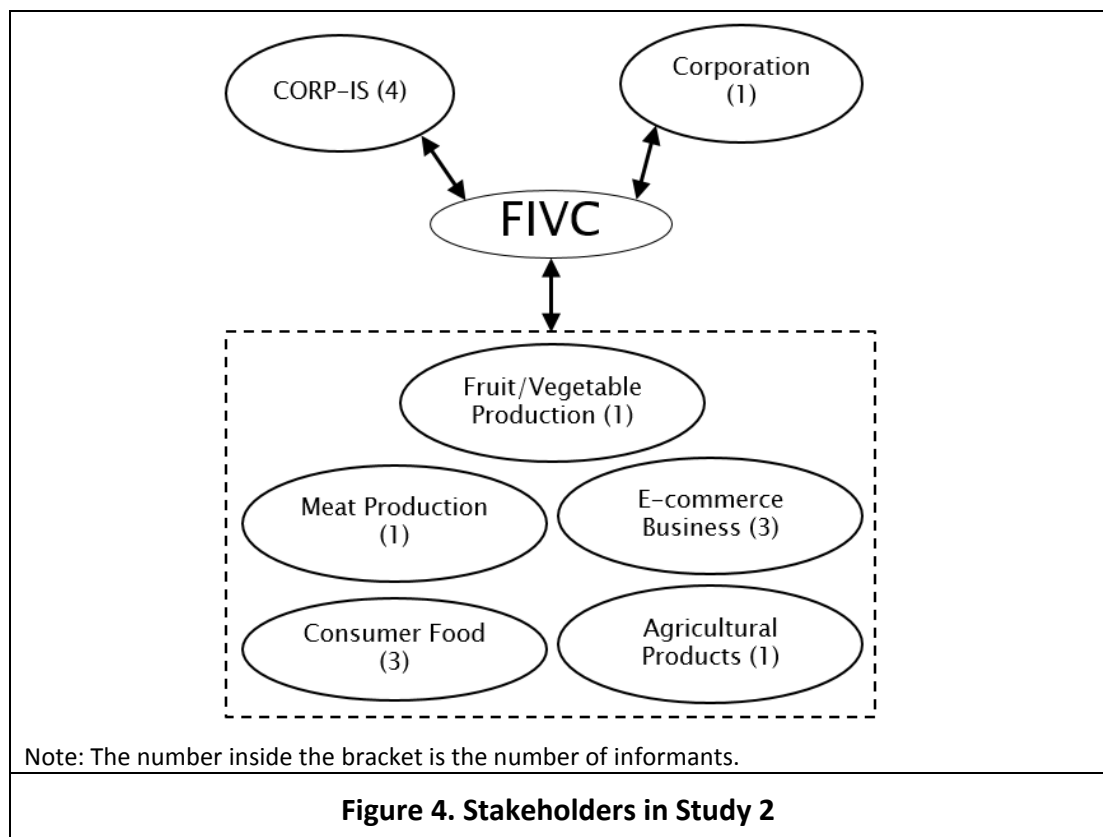
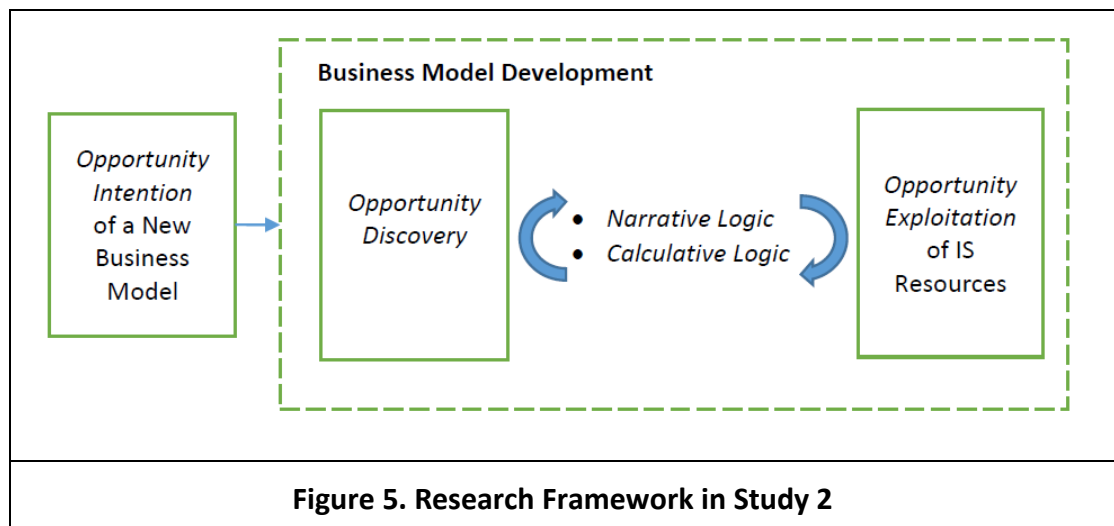


Figure 5 is the research framework designed to guide our data collection and preliminary data analysis. The theoretical lens consists of opportunity development processes and the context is the narrative and calculative logics of the business model development process. We specifically look at four opportunity development processes, namely, *opportunity intention*, *opportunity discovery of narrative logic*, *opportunity discovery of calculative logic*, and *opportunity exploitation of IS resources*. *Opportunity intention* is the formulation of an entrepreneurial idea that describes a new business model concept. This new business model concept has undergone a relatively long period of business model development in which both *opportunity discovery* and *opportunity exploitation* processes are used to progressively develop the new business model. We use the term *narrative logic* to refer to the rationale of a business model's narrative; *calculative logic* to refer to the rationale that interprets the quantitative data associated with a business model; and *opportunity exploitation of IS resources* to refer to the process of acquiring IS resources and engaging in activities to exploit selected opportunities, where *IS resources* refer to the information technology (IT) infrastructure and IS capabilities (Chang & Wang, 2010; Ravichandran & Lertwongsatien, 2005).



We analyzed how these processes influence the narrative and calculative logics of the business model to uncover the underlying IS strategic actions that drive these processes. A preliminary data analysis was performed at the time the data were collected (Eisenhardt, 1989). Using tables and diagrams, we summarized narratives related to business model logics, IS strategic actions, IS resources and sources of opportunity. We furthered our data analysis by using a temporal perspective to examine the path dependence of strategic actions and using the business model as a dynamic boundary object. After we had identified tentative explanations for the dynamic of the narrative and calculative logics, we abstracted the tentative explanations further by aligning theory, data and the emergent model iteratively until the point of theoretical saturation (Eisenhardt et al., 2010). The emergent model was then validated to ensure it was congruent with both the empirical data and existing literature (Klein & Myers, 1999). Table 8 shows the approaches used to apply Klein and Myers' (1999) principles to conduct this interpretive research.

<b>Table 8. Approaches used to apply Klein and Myers' (1999) principles to conduct interpretive research</b>	
<b>Principle</b>	<b>Approaches used in our study</b>
Fundamental principle of the hermeneutic circle	Iterative interviews between IS organizations and business entities and iterative interviews between difference entities; secondary data provided additional views related to the industry, LEX and the FIVC.
Principle of contextualization	The gatekeepers provided the social and historical background of LEX/FIVC throughout our site visit; informal interactions during lunch/dinner/breaks with both managers and executives to gain further contextual understanding.
Principle of interaction b/w researchers and participants	Questions were semi-structured, so there was room to check assumptions and facts and to prompt for unexpected information or surprises during the interviews.
Principle of abstraction and generalization	The research framework in figure 3 guides the level of abstraction required in our data interpretation; the idiographic details were abstracted to the construct level; we then generalized IS strategy with links to the essential contextual concepts.
Principle of dialogic reasoning	The subthemes in each construct in the research framework were derived from actual data to avoid theoretical preconceptions; the research framework is designed with minimal constraints or structures to link the core constructs to allow new insights to emerge from the actual data.
Principle of multiple interpretations	We first identified key events of the FIVC and then defined the period so that we could guide the interviewers to describe their views of an event or period; we collected data on the same event or period from multiple sources.
Principle of suspicion	Principle of multiple interpretations and secondary data scanning helped to reduce biases and systematic distortions; we paid special attention to the potential biases that might be caused by the role of the interviewee or the tendency to support the actions of the enterprise.

### **3.4 Case Description**

#### **3.4.1 Opportunity Intention**

The ambitious vision of the FIVC was communicated in an article written by the CEO of LEX. The article of fewer than 1,500 words represented the entrepreneurial vision of the top management (Ireland et al., 2009), rationalizing the need for the FIVC and a stimulus of the strategic actions. The vision depicted that new value resides in reconfiguring the value chains of various business entities. This mission might have been delegated to LEX's corporate strategy department or to a special team represented by different business entities and divisions, as the mission requires significant business insights and technical knowledge and a significant level of organizational change (Devadoss & Pan, 2007). Instead, the CEO delegated the mission to CORP-IS because, as stated in his article, he believed the FIVC "*relies on information systems to win.*"

CORP-IS engaged top global consultants to formulate a strategy for its IT systems by analyzing key business activities and planning the allocation of IS resources. The delegation of this authority to CORP-IS and the engagement of global consultants implied that the vision showed continuing merit and induced an even more intense pursuit. However, some were cautious because they felt that the FIVC might put LEX's reputation and competitive advantage at risk by increasing the interdependencies among business entities or by standardizing business operations too deeply and rigidly for markets with different characteristics, as highlighted by a Vice President (VP):



*“The FIVC can be a double-edged sword because individual business entities are strengthened due to collaboration, but they may introduce risk to the entire chain if one of us causes a negative incident; furthermore, it has great implications for LEX’s reputation ... Therefore, will we be creating a ‘devil’ that we cannot control later? The FIVC is only an ideal concept theoretically” (VP, Corporate Strategy Planning)*

To analyze the dynamic of the FIVC over the period from March 2009 through December 2012, we delineated the FIVC into three phases based on the emerging characteristics of the business and IS strategies. *Phase 1* (March 2009 through December 2010) covered the period in which making sense of the FIVC was the key mechanism through which each business entity established an understanding of its current and future positions, roles, and impact on the overall value chain. *Phase 2* (January 2011 through December 2011) covered the period during which specific strategies were formulated for clusters of business entities based on similarities in their markets and growth stages of their business and IS development. *Phase 3* (January through December 2012) covered the period in which IS professionals were distributed to various business entities to collaborate in formulating their business strategies from an enterprise perspective.

### **3.4.2 Chartering Phase (Phase 1)**

#### **3.4.2.1 Discovery of Narrative Logic**

In phase 1, business entities attempted to discover the *interdependencies* of their business within their own business entities and relative to other business entities. Although business entities might be in the same trade, they represented different segments of the entire value chain. For example, a business entity that contracts rice farming is the starting point of a value chain; another business entity that builds and operates a rice-processing capacity is at the midpoint of that value chain, and yet another business entity that sells different brands of rice is the endpoint of that value chain. Each interdependency opened up opportunities to create new connections that could potentially lead to new value creation or capture, as a VP from CORP-IS said:

*“I feel we do not need to search for interdependencies, as they already exist in our ecosystem — it is a matter of how to make use of them.” (VP, CORP-IS)*

These new connections are not established by information flow alone but rather by other possibilities such as physical product flow, branding and shared services. For example, the e-commerce business entity can leverage the expertise of other business entities to design products or select high-quality consumer products and use e-commerce to brand and sell these products; in exchange, e-commerce provides customer insights to the producers. To explore a new narrative logic for a new business model, both IS and business strategists are required to reframe alternate perspectives to see plausible future scenarios (Covin & Slevin, 2002). For

example, the mindset required to operate business-to-customer and business-to-business operations can be different:

*“LEX as a whole wanted to change our mindset [to do retail], but it is actually difficult to do as traditionally our upstream is very strong...60-70% of LEX business entities and revenue are from upstream entities. Simply put, our organizational DNA is trading and value-added processing” (VP, Corporate Strategy Planning).*

Using the existing narrative logic as a base, CORP-IS led business entities to interact and exchange knowledge to search for new narrative logic to connect interdependencies. The organizational power (Dhillon, 2004) that resides in the FIVC became a platform through which business entities developed alternative perspectives and promoted an understanding of the opportunities and challenges at hand, as highlighted by the CTO of an entity:

*“The FIVC brings everyone together. The change is actually significant and difficult to achieve otherwise because it involves organizational structure, strategy... and a new mindset to see new ways of operating” (CTO, consumer food).*

Shared understandings of opportunity began to emerge, and opportunity development began to transform from being individual to organizational in nature (Dimov, 2007).

### **3.4.2.2 Discovery of Calculative Logic**

However, not all business entities had their quantitative information readily available in Phase 1. This lack of data prohibited business entities from providing quantitative evidence to support the formulation of a new narrative logic; thus, business entities could not determine an attainable narrative logic that was sufficiently compelling for the enterprise to pursue.

*“At that time, we couldn’t discuss any integration. At least, we should have good systems in place first so that everybody can see what is going on. Otherwise, we can’t even do well in retailing” (CFO, consumer food).*

Although either narrative or calculative logic may trigger a revision of the business model, without the support of calculative logic, an enterprise is less likely to alter a business model when a narrative logic assumes vital quantitative information. Aside from the availability of quantitative elements, their quality influences the strength of the calculative logic as well:

*“We could not discuss the FIVC until we had integrated IT systems that let us visualize how the divisions of our business entity operate. Otherwise, reports filled out and submitted manually were not reliable, and when I requested more details about certain information, I still wasn’t sure whether they were accurate” (CFO, Agricultural Product).*

A calculative logic utilizes quantitative elements beyond the financial or numerical calculations related to cost and revenue. For example, calculative logic can consider

the time needed to implement a new narrative logic, and it can model the underlying mechanisms of a market:

*“The value of creating a price model for a trade is not so much of the model itself, but the ideas behind the model. It makes us think hard on how things work...once these variables and their relationships are well understood, we practically sorted out the business model of a trade” (CEO, an article in issue 52 of LEX newsletter, 2011).*

### **3.4.2.3 Exploitation of IS Resources**

Before the global consultants could complete their analysis of the key business activities and planning of IS resource, CORP-IS went ahead to implement the *standardization* of IS resources. The decision to standardize IS resources was not driven by a specific new narrative logic; rather, it was a generic IS strategy unveiled when the CEO announced that the FIVC’s opportunity intention ‘relied on information systems.’

They revised and compiled a comprehensive set of documents on IS policies and guidelines to promote the standardization of IS resources. IS resources were not limited to IS infrastructure such as networks, hardware, and software but included IS services and IS project management. The standardization of IS infrastructure helped to reduce common IS challenges, such as IT asset incompatibility, ineffective IS system development, and the slow adoption of enterprise systems. The business entities also leveraged the standardization initiative to upgrade their IT infrastructure and integrate more divisions under their entities. The commitment

and actions associated with the upgrade helped business entities be more open to exploring new narrative and calculative logics, as they know IS resources will be ready for use later. At the end of Phase 1, the IT systems of various business entities had advanced to the next level, with at least some levels of integration at the division level.

### **3.4.3 Pioneering Phase(Phase 2)**

#### **3.4.3.1 Discovery of Narrative Logic**

In phase 2, CORP-IS shifted its attention from interdependency to the creation of a new *network structure*. It was more feasible to modify the existing network structure as IS resources were better standardized and the interoperability of business entities were improved from the previous phase. The new network structure was constructed by clustering business entities based on the level of similarity of their markets and the growth stage of their business and IS development. The new structure allowed the discovery of new narrative logics that were linked across multiple business entities. For example, raw food production, raw food processing, and consumer food processing business entities that cover different segments of the value chain explored how a joined network structure can create new value when some of the key operations merged:

*“If we sell and distribute wines and oils, we can bring other related products [from other upstream business units] and consolidate all of them under the same distribution channels. In addition, we can standardize and operate our logistics such as warehouses in different cities under a single system, for better food safety and efficiency” (CTO, consumer food).*

In this phase, the scope of the narrative logic under consideration was expanded from connecting interdependencies to reconfiguring business processes to create new value. The focus of the managers shifted to the value creation and capture within a network and related to how these values could eventually reach end consumers.

*“There is a clear contrast compared to a year ago when I attend meetings.... In the past, many discussions were on internal issues, and we did not concern ourselves much about consumers or things beyond our entity. Now, whenever we are in discussion, we first think of the market, think of consumers, and then derive our needs” (VP, consumer food).*

The choice of criteria used to determine the clustering resulted in a different network structure and in turn generated different sets of opportunities. For example, two closely related business entities with a wide gap in IS capabilities will limit ideas associated with IS-driven collaboration. A business manager did not view the FIVC as an enterprise system but rather as a “concept” of close collaboration:

*“Basically you can’t have a system to manage everything. My understanding of the FIVC is that it is just a concept, a direction to help unify all of us under a good foundation or share the [collaboration] mindset... [The FIVC] should be a network of distributed systems for different businesses” (VP of Operations, meat production).*

### 3.4.3.2 *Discovery of Calculative Logic*

In Phase 2, LEX began to request that business entities share their quantitative data with others. Following the terms commonly used in the education field, two types of quantitative data were observed: *summative data* and *formative data* (Harlen & James, 1997). In the context of key performance indicators (KPI), we referred to summative data as data associated with the KPI **of** business and formative data as data associated with the KPI **for** business. Thus, summative data were used to measure the state of a business to assist decision makers in adjusting their business direction for better performance; formative data, in contrast, were used to measure the differences between target and realized business goals to assist decision makers in changing or deploying strategic actions to close the gap.

In this phase, business entities worked with external consultants to select and define a set of summative data for that entity to establish an understanding among entities and to help in the discovery of a new calculative logic:

*“If [business units] build systems for their own needs there can only be advantages. ... It should strengthen common understanding, and many arguments can definitely be reduced” (CFO, consumer food).*

The CORP-IS planned to increase the amount of summative data that business entities have to report and share within the enterprise over time. It implies that the granularity of the data would be increased, giving everyone better business insights. The demand of these data forced each business entity to review its existing IS capabilities and IS gaps.



*“[Data-driven strategy] is already happening, the rate of IS change in each business entity will be different, depending on the nature of its operation. To us, we are definitely using data to drive our strategy because everything eventually stops [and is represented] as numbers...” (VP, e-commerce).*

The formulation of a calculative logic is not driven by data alone but, more importantly, by the understanding of the relationships between data elements. For example, the quantitative relationship between rice demand and population growth can be used to formulate the calculative logic of rice production in the enterprise’s value chain.

#### **3.4.3.3 Exploitation of IS Resources**

In Phase 2, to further increase the feasibility of exploiting opportunities, CORP-IS enhanced the configuration of IS resources. Enterprise systems in particular were targets of the enhancement. The standardization of enterprise systems in Phase 1 helped control the number of different software products (e.g., SAP, Oracle) used within LEX. CORP-IS went a step further to define the scope of the configuration of these products. However, it was not cost-effective to implement configurable modules for all existing enterprise systems. In addition, it was difficult to anticipate the level of configurability required by each module. To minimize the effort required to enhance the configuration of IS resources, CORP-IS identified and consolidated the most common operations into the Common Information Platform (CIP) shared by all business entities. The CIP was a major undertaking that consisted of 12 shared services, such as knowledge management, legal and governance systems, human resource management, and risk management. The configuration built into CIP eased

work process changes across all or selected business entities and the addition of new modules in the future. Simultaneously, a master roadmap of IS resources was drawn to guide the scope of configuration for the subsequent enhancement or implementation of other enterprise systems.

### **3.4.4 Adoption Phase (Phase 3)**

#### **3.4.4.1 Discovery of Narrative Logic**

In Phase 3, business entities attempted to discover new opportunities from making use of the new competitive advantages gained in Phase 2. These new competitive advantages allowed the enterprise to reconfigure IS resources more rapidly and cost effectively. Because CIP had been implemented to take care of a significant portion of common business operations, business entities could focus on operations that were unique to them. With CIP, business entities could capture opportunities that were otherwise not possible due to deficient work processes in the past:

*“In the past, we may have had to go through more than 50 people to approve something. By the time it was approved, the market opportunity was long gone... we need ‘value control’ so that we can continue to adjust the way that we work so to deliver [different types of value]” (President, consumer food).*

However, the knowledge required to configure the IS resources resided within the IS organization, and business entities may not have fully comprehended the possibilities of their new capabilities. To realize the potential of configuring IS resources, CORP-IS allocated experienced IS professionals who had gained specific business domain knowledge from the previous phases to the various business

entities in an effort to generate new possibilities. The high configurability of IS resources decreased the cost and thus increased the feasibility of using IS resources, providing more flexibility to allow business entities to imagine new possibilities. The user experience gained in the previous phases changed the view of business entities:

*“After we have enterprise systems, our ways of thinking changed – we think more holistically not only from an entity’s perspective but also from the enterprise’s perspective. Sometime I wonder, our view is getting higher and more holistic through information systems. We used to see only a small piece of land, and now I could see the entire land” (CFO, consumer foods).*

#### **3.4.4.2 Discovery of Narrative Logic**

In Phase 3, CORP-IS implemented an enterprise-wide business intelligence (BI) system and held business entities responsible for submitting accurate and timely summative data to share. It had indirect effects on the entities because they were required to consider whether they needed to enhance their existing enterprise systems or implement new enterprise systems to fulfill their responsibilities. CORP-IS explained this strategy as follows:

*“Let our business managers view these numbers first without too much concern for how these numbers are derived. Using the data analysis module, they can find new insights. The business managers are likely to have questions about these numbers, and then they will demand more details if not available” (President, CORP-IS).*

CORP-IS hoped that the new BI system would generate new calculative logic and eventually lead to new narrative logic. With both summative and formative data collected, LEX hoped to move beyond the incremental enhancement of operations because the new calculative logic was akin to changing the formulas themselves instead of just changing the variables.

*“If we can predict prices downstream, that is sufficient for us to be successful already. Those prices will guide our production mid-stream and up-stream. It does give us an edge over others” (CFO, consumer food).*

In this phase, there was an increase in formative data because the new IT systems that had been developed in the early phases automated the collection of transactional data.

#### **3.4.4.3 Exploitation of IS Resources**

In Phase 3, the goal of opportunity exploitation advanced from the configuration to the *adaptation* of select IS resources. CORP-IS, as the designer of IS resources, found it more feasible to use a set of highly reconfigurable IS resources to implement alternative business processes for business entities. IS resources were relatively fluid in this phase. Doz & Kosonen (2010) refer to resource fluidity as an internal capability to reconfigure capabilities and rapidly redeploy resources. Aside from strategic actions, project-level actions helped to facilitate the development of flexibility (Pan et al., 2006). Although the vision of the FIVC was clear, its implementation was not; for example, there has been much debate about whether CORP-IS should deliver the FIVC as a single large-scale enterprise system or a network of multiple enterprise

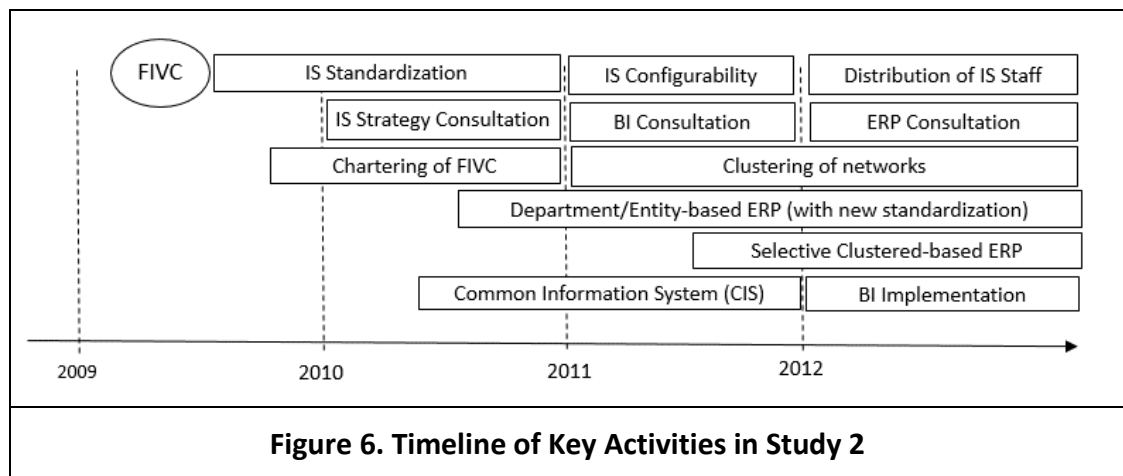
systems that allow different value chains to interoperate. The following quote summed up the challenges of the implementation of FIVC:

*“It is challenging to realize the FIVC because, first, the value-chain is too long, there is no existing solution you can purchase; second, the business operations keep changing and you can’t keep up with frequent system change; third, the IT cost will not be in the range of a few million [RMB] but the tens or hundreds of millions [RMB], which is costly to the enterprise”*  
*(VP of Operations, meat production).*

The new narrative logic discovered in Phase 2 led to LEX’s decision to reconfigure three large business entities. These business entities were closely related in an ecosystem, and thus, new value relied on sharing a single enterprise system that could be configured to support different ways of operating. CORP-IS hoped that a positive outcome from this project would inspire others to discover new narrative logic.

The allocation of IS professionals to various business entities helped to span the boundaries between the IS and business domains. Not only did it improve the earlier-explained development of narrative logic, but it also propelled the decisions and implementation related to IS resources. To create a shared understanding of the various businesses, CORP-IS structured face-to-face forums regularly for IS professionals to interact and exchange knowledge.

Figure 6 displays the timeline of key IS activities in study 2.



### 3.4.5 Case Analysis Summary

Table 9 summarizes the case analysis in this section. We did not focus on the specific details of the business model in each phase, as different business entities operated in different segments of the entire value chain, and they were at different stages of the development of the business model; instead, we focus on IS strategic actions and the key source of opportunity discovered or exploited in each phase to generalize the pattern of the opportunity processes. The delineation of the FIVC into the three phases helped us to extract the dominant pattern in each phase in contrast with the other two phases. As the data analysis was based on data collected from five business entities, the table does not apply to all business entities.

<b>Table 9. Business Model Development in Study 2</b>			
	<b>Chartering Phase (Phase 1)</b>	<b>Pioneering Phase (Phase 2)</b>	<b>Adoption Phase (Phase 3)</b>
Period	March 2009— December 2010	January—December 2011	January—December 2011
Source of Opportunity	<u>Interdependencies</u>  Interdependency already existed, and LEX aimed to discover it and make it visible to all stakeholders.	<u>Network Structure</u>  Sharing information residing in the network to increase the quality of decisions and level of collaboration among related business entities.	<u>IS Resources</u>  High configurability of IS resources eased resource reconfiguration at the enterprise level to increase value as a whole.
Opportunity Discovery of <i>Narrative Logic</i>	Discovered interdependency of processes that could streamline information to generate new value.	Discovered new configurations of network structure to generate new value.	Discovered ways to leverage the ease and speed of reconfiguration to generate new value.
Opportunity Discovery of <i>Calculative Logic</i>	<u>Non-Existent</u>  Lack essential information to form good calculative logic.  Data must be generated within the business entity first.	<u>Summative</u>  Use summative information to form good calculative logic.  Share summative data to build shared understanding.	<u>Formative</u>  Include formative information to form good calculative logic.  Share formative data to increase adaptability.
Opportunity Exploitation of <i>IS Resources</i>	<u>Standardization</u>  Integrate processes within the division level  Build IS infrastructure  Deploy IS governance	<u>Configuration</u>  Integrate processes within the business entity level  Build the IT platform for common services  Develop IS roadmaps	<u>Adaptability</u>  Integrate processes among a cluster of business entities  Build BI system for data collection  Deploy IS resources to business entities

### **3.5 Discussion**

In this section, we discuss the dynamic of business model development, the IS strategy actions associated with business model development, and the exploitation of IS resources associated with the choices of narrative and calculative logics.

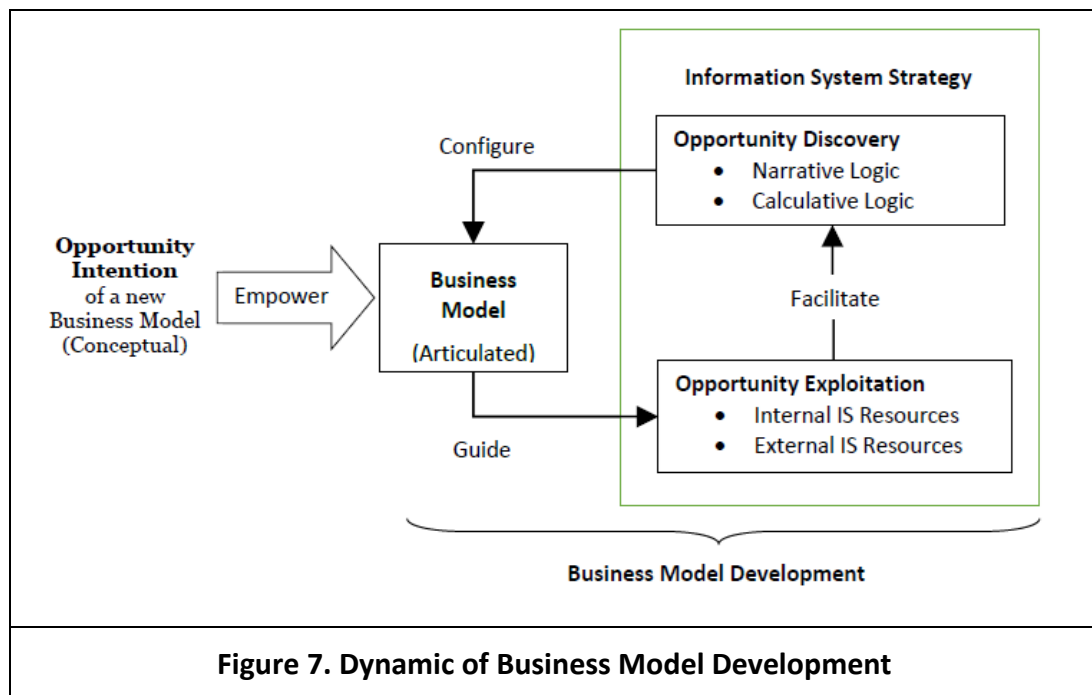
#### **3.5.1 *Dynamic of Business Model Development***

*Opportunity intention* is the starting point, when top managers express a desired business model that reflects their entrepreneurial vision (Ireland et al., 2009). The desired business model is a conceptual model that consists of the narrative component only, and it lacks the details for the enterprise to pursue the new goal immediately. The narrative logic indicates the source of opportunity and the use of IS to exploit the opportunity. In our case, the vision of the FIVC indicates that new value creation can stem from connecting multiple value chains to create a new level of collaboration, and the approach involves using IS to reconfigure multiple segmented value chains into a fully integrated value chain. Each business entity reviewed and revised both its supply and demand chains, contributing to the development of a new business model as the logic of value creation and capture changed. The details of the business model could not be determined all at once but underwent multiple rounds of revision involving different sets of stakeholders and different sources of opportunity in a relatively long period of time. Stakeholders made sense of the new direction and established mutual consensus with the details of the model. Thus, in essence, the case illustrated that the business model development process is a continual process of “in search of a viable business model.” The culminated rounds of revision eventually brings the enterprise closer to the desired model. We refer to the business model in development as an *articulated*



*business model*. The business model transitions from a conceptual to an articulated model, incorporating new narrative and calculative logics that the enterprise has decided to implement. Decision-makers must be convinced that both the new narrative and the calculative logics of the business model revision are desired and feasible.

The new logic is not driven by business strategy alone because the business strategy is far from fully formulated at the moment that the conceptual model is created. Instead, the logic is driven by an opportunity discovery process that involves strategists from both the business and IT domains. Hence, a business model is a strategic outcome of the co-evolution of business and IS strategies, and it embeds strategic considerations—a “reflection of the firm’s realized strategy” (Casadesus-Masanell & Ricart, 2010, p.204). Although strategic decisions were made to select a scope and investment amount for IS resources, the strategic actions of opportunity discovery do not necessarily lead to opportunity exploitation; rather, opportunity exploitation may be designed to facilitate opportunity discovery in the future. Figure 7 depicts the dynamic of business model development described above and links opportunity discovery and opportunity exploitation as a cycle of iteration that is guided by the articulated business model: the opportunity discovery during a phase guides the opportunity exploitation of the next phase; in turn, the opportunity exploitation during a phase facilitates the opportunity discovery of the next phase. In our framework, the business model plays the role of ‘facilitative intermediary’ (George & Bock, 2011, p.88) between the discovery and the exploitation processes.



### 3.5.2 *IS strategy actions to reconfigure an articulated business model*

When a large enterprise delegates the mission of a major IS-driven opportunity to the IS organization, its role shifted to a substantially strategic one. Knowing that the new opportunity may not be shared by business entities that are preoccupied with their existing operations, the IS organization designs concrete IS plans to enhance them first, such as integrating multiple divisions of a business entity and upgrading the IS infrastructure within a business entity. The sense-making process (Balogun, 2005) triggered by the new mission provided the IS organization with an effective means to acquire the business domains at the business entity level. After the implementation of these plans, IS resources are interoperable and configurable to a certain extent, leading to a higher change to increase exchanges among a cluster of related businesses. Although higher values may be generated when the existing structures and processes of business entities are significantly reconfigured (e.g.,

merging some parts of the production or distribution chains), the risk of rendering the previous model unrecoverable if the new articulated business model fails is high. To reduce such a risk, the IS organization differentiates between the common and unique operations of all business entities and unifies as many operations as possible through shared services. This strategy enables common operations to be reconfigured quickly and allows business entities to design unique operations. Although there may be corporate strategists in the enterprise, the IS organization can be more effective in formulating and implementing IS-driven business model change because it has the control of internal IS resources as well as the technical knowledge to select and induce external IS resources to the enterprise. Thus, the IS organization is in a unique position that can bring different business entities to compete in the market as a whole.

Due to concerns about flawed assumptions, business entities might challenge the narrative logic of a new possibility proposed by other entities. The accuracy of these assumptions requires significant insight into related domains. For example, the decision to integrate two business operations may be based on a flawed assumption that the integrated rules and routines will not compromise the current values of stakeholders. To reduce such flawed assumptions, the IS organization strategically deploys IS professionals to different business entities to establish close relationships with staff in the business domain with the goal of exchanging knowledge. Not only do the IS professionals connect with the headquarters and business entities, but they also connect with IS professionals deployed in other business entities and help

establish a shared view of the entire value chain as a whole and of the use of IS resources to gain competitive advantages.

### **3.5.3 *Exploit IS resources to increase choices of business model logics***

When the desired business model has not been fully formulated, an enterprise can provide an IS-driven platform to facilitate the business model development. As seen in our case, the platform can be a major enterprise-wide initiative empowered by top management. Considering a business model to be a boundary object constructed of narratives and calculations, Doganova & Eyquem-Renault (2009) found that business models are devices of 'collective exploration' that become a common platform through which stakeholders from different domains can contribute new opportunities for value creation. However, the exploitation of IS resources does not necessarily require a particular business model. For example, in Phase 1 of our case, when the stakeholders were still in the midst of the opportunity discovery process to complete the details in the first version of the articulated business model, the IS organization started to exploit IS resources in preparation for the opportunity exploitation in Phase 2. Similarly, in other phases, not all opportunity exploitation of IS resources are directly linked to the latest version of the articulated business model, but they are designed deliberately to increase the narrative and calculative logics in the future. A strategic decision to exploit IS resources must consider the effect of that decision on the enterprise's long-term, sustainable competitive advantage. For example, IS strategy should consider building strong barriers to erosion so that IS resources will not become commoditized over time (Wade et al., 2011). The exploitation of an opportunity such as implementing an enterprise system should not

be viewed as a one-time process but rather as “cycles of configuration/customization and use” (Wagner & Newell, 2011, p.407).

The facilitation of subsequent discovery processes is more important today as data process technology continues to advance, and the rich data that reside in IS resources help discover new calculative logic. The dynamic nature of the IS strategy, the business models and their interaction creates path dependence, in which IS strategy advances from standardizing to configuring and then to adapting a set of IS resources to develop the business model. Each advancement increases the potential to discover new opportunities that are otherwise unlikely to be discovered. The desirability and feasibility of an opportunity are two important factors that influence the decision to exploit that opportunity (McMullen & Shepherd, 2006). In the context of IS in opportunity exploitation, feasibility is a function of the flexibility to redeploy IS resources to exploit an opportunity. All these actions indirectly increase the feasibility of discovering new opportunities because the ‘cost’ of exploiting them is likely to be lower.

### **3.6 Conclusion and Limitations**

By addressing the research question posed at the beginning of this study, this study makes a theoretical contribution by filling the research gap on the mechanisms by which the underlying opportunity and the business model are interconnected. Our findings show that opportunity discovery can be used to formulate the narrative and calculative logics of the business model and that the opportunity exploitation of IS resources enhances the subsequent choices of logics. As the two opportunity

processes interact, new choices of logics are generated and they become new opportunities for the enterprise to select.

The second theoretical contribution is to offer a fresh perspective on the role of IS strategy in business model development. Our study posits that IS strategy facilitates opportunity processes to develop a business model. In particular, how the IS strategy can be implemented before the formulation of an articulated business model. Although strategic decisions were made to select a scope and investment amount for IS resources, the strategic actions of opportunity discovery do not necessarily lead to opportunity exploitation; rather, opportunity exploitation may be designed to facilitate opportunity discovery in the future. The IS strategy actions associated with business model are described in the *findings* section of this study.

The third theoretical contribution is to propose a paradigm shift that the IS organization can play an opportunity-facilitator role, taking the lead to bring actors from different domains to co-formulate the business model for a large enterprise. Although there may be corporate strategists in the enterprise, the IS organization can be more effective in formulating and implementing IS-driven business model change because it has the control of internal IS resources as well as the technical knowledge to select and induce external IS resources to the enterprise. Thus, the IS organization is in a unique position that can bring different business entities to compete in the market as a whole.

The theoretical insights on the linkage between underlying opportunity processes and business models have practical implications for practitioners. For IS practitioners, our study suggests that an IS organization can leverage IS-driven

enterprise projects to exploit IS resources even without an articulated business model in mind. The dynamic nature of the IS strategy, the business models and their interaction create path dependence, in which IS strategy can advance from standardizing to configuring and then to adapting a set of IS resources to develop the business model.

For entrepreneurs, our study implies that entrepreneurial vision can start with a conceptual business model and can then use IS strategy to increase the feasibility of exploiting subsequent opportunities and provide flexibility when formulating a desired business model. The narrative and calculative logics can be developed via IS strategy as market devices (Callon & Muniesa, 2005) to analyze business models when exploring a market.

This study has at least three limitations that suggest the need for future research. First, changes in a business model, IS strategies, and business strategies as strategic actions of a co-evolution process are best observed through longitudinal field research. However, as an explorative study of a complex topic, our aim in this work is to identify the key constructs informed by multiple research fields and to gain an understanding of their relationships. Second, although we posit that a large enterprise is a complex adaptive system and although we adopt this perspective as the premise of our work, the notion of an enterprise's diversity, adaptiveness, interconnectedness, and interdependency has not been fully explored. Third, we posit that IS strategic actions are generic strategies to facilitate business model development. Further empirical studies may be conducted to differentiate the IS

strategic actions designed for opportunity and non-opportunity processes to examine the boundary conditions of the effectiveness of these strategies.

#### **4. Study 3: Creation-Discovery Interaction<sup>3</sup>**

##### **4.1 Motivation**

A social enterprise or social business is an organization that uses market-based approaches to fulfill its social purpose. Thus, it combines principles from both traditional and social entrepreneurship in the design of its business model. Although it is easy to identify social needs or market failures, they “often far outstrip the resources available to address them, particularly because the ultimate consumers are often unable to pay enough to cover the costs of the goods or services” (Austin et al., 2006, p7). Thus, it is a challenge to design a viable *social business model*, i.e., the resultant business model for social enterprise. Yunus et al. (2010) offered the following three reasons to research social business models: (a) humans have a natural, instinctive desire to make life better for others via social objectives, (b) a social business model can be easily learned and adapted without fear of competition, and (c) a social business model can serve as a “learning hub” for multinational corporation managers to develop dynamic capabilities (Teece, 2007).

The social business model differs from the traditional business model in that the former maximizes stakeholders’ value as opposed to shareholders’ value (Yunus et al., 2010). Because the business model embodies a consistent and holistic logic for decision makers to select from among “the myriad choices and actions involved in execution” (Richardson, 2008, p.135) and to focus “on how all the elements of the

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<sup>3</sup> This study is accepted for 2014 International Conference on Information Systems (ICIS) as *research-in-progress*.



system fit into a working whole” (Magretta, 2002, p. 90), the study of the social business model enables us to gain insights into the strategic logic of social enterprises. Additionally, the development of a business model is an enactment of entrepreneurial opportunity (George & Bock, 2011), in which “an idea or dream...is discovered or created by an entrepreneurial entity and is revealed through analysis over time to be potentially lucrative” (Short et al., 2009, p.55). Thus, we posit that social business models can achieve social objectives via innovative designs that are impossible to achieve for traditional for-profit ventures.

Opportunity processes, such as opportunity recognition, creation, discovery, and exploitation, are core concepts in the field of entrepreneurship. Sarasvathy et al. (2003) suggest that selecting processes depends on their use, e.g., *opportunity recognition* is used to match existing supply and demand, *opportunity discovery* is used to determine new supply to exploit known demand or vice versa, and *opportunity creation* is used to determine both new supply and new demand. It has been suggested that opportunity processes within a social enterprise enable economic, social, and environmental resources to reinforce one another in novel ways (Murphy & Coombes, 2008). However, extant research linking opportunity processes and business models is rare; as a recent review of the literature stressed, “the mechanisms by which the underlying opportunity and the business model are interconnected have not been explored” (George & Bock, 2011, p.88).

To address this gap, we use entrepreneurial opportunity as our theoretical lens to conduct an in-depth case study of a social enterprise in China. The social enterprise is from a rural county with limited resources; nonetheless, within 3 years, it managed

to create a business model that successfully assisted e-commerce entrepreneurs, i.e., micro-entrepreneurs or *netpreneurs* (Avgerou & Li, 2013), to exploit the e-commerce platform. Specifically, our research question is posed as follows: *How does a social enterprise create a social business model in the context of e-commerce?* Our study aims to make the following two research contributions upon its completion: (a) to theorize the role of opportunity processes in the creation of a social business model and (b) to illustrate a novel social business model in today's e-commerce landscape.

To address this question, an in-depth case study of an e-commerce village was conducted. This study is organized as follows. We first review the past research on social business models and opportunity processes. Next, we explain our research methods; following this, we present the case description. We use case analysis and discussion to theorize the role of opportunity processes in the creation of a social business model. We conclude our study by acknowledging a few limitations.

## **4.2 Literature Review**

### **4.2.1 Social Business Model**

Luke & Chu (2013) defined a *social enterprise* as “an organization that exists for a social purpose and engages in trading to fulfill its mission, using market-based techniques to achieve social ends” (p.765). Because social enterprises use a commercial approach, they operate in a manner that is similar to that of traditional enterprises; however, social enterprises recruit social profit-oriented shareholders and reveal their social profit objectives clearly and early in the process (Yunus et al., 2010). As with traditional business model innovation, social business model

innovation challenges conventional thinking and considers both social and economic values:

*“...Social enterprises should be self-sustaining and, therefore, entrepreneurial in their endeavors. From these premises, we suggest that the definition of entrepreneurship might be modified to include the creation of ‘social and economic value’ and may thus be applied to both private, entrepreneurial ventures as well as social enterprises” (Chell, 2007, p.5).*

From this perspective, a business model depicts the transactive elements of a firm through opportunity exploitation (Amit & Zott, 2001); in addition, the creation of a new business model is an enactment of entrepreneurial opportunity (George & Bock, 2011). Social business models can create new markets and simultaneously improve societal wealth; however, they typically operate under conditions of high uncertainty, such as highly imperfect markets, lack of governance, poor infrastructure, lack of familiarity with technology, or ambiguous desired outcomes (Thompson & MacMillan, 2010). Thus, new strategic approaches are required to integrate and balance the social and economic values, or to address the “strategic paradox of how to create shared value” (Florin & Schmidt, 2011, p.166). One approach is collaboration between commercial and social enterprises wherein the entities employ their complementary capabilities to create and capture value in novel ways (Dahan et al., 2010). Another approach is establishment of cross-business incubators to bring together very different interests and perceptions (Zimmermann et al., 2014). The dominant logic of action for social enterprises is empowerment; and this is different from political action, goodwill and control for social activists,

charity organizations and commercial enterprises respectively (Santos, 2012). Drawing on research on compassion, there are three mechanisms suggested (i.e. integrative thinking, pro-social cost-benefit analysis and commitment to alleviating others' suffering) to explain the drivers of social enterprises (Miller et al., 2012).

Despite the importance of addressing social business models differently from traditional models, only a limited number of social business model frameworks have been proposed (e.g. Florin & Schmidt, 2011; Sinkovics et al., 2014; Yunus et al., 2010). In the business model developed in Yunus et al. (2010), the following changes are made from a commercial business model: stakeholder (as opposed customer) value proposition is used, both social and economic profit equations are included, and the aim is to achieve no economic loss instead of maximizing economic profit. In the new social contexts of value creation, business model design has emerged as a new domain in design (Simonse, 2014).

#### **4.2.2 Opportunity Processes**

In the entrepreneurship field, opportunities have been defined as "situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships" (Eckhardt & Shane, 2003, p.336). In contrast to earlier definitions (Shane & Venkatraman, 2000), this definition, which reflects the dominant view today (Short et al., 2009), explicitly states that opportunities are only based on new means or new ends. The nature of opportunity has also been the subject of numerous studies (Companys & McMullen, 2007; Eckhardt & Shane, 2003; Murphy, 2011). Based on the notion of temporal distance, Tumasjan et al. (2013) studied the effects of

opportunities' desirability and feasibility, with desirability referring to an opportunity's perceived attractiveness and feasibility referring to an opportunity's perceived difficulty with respect to exploitation.

Opportunity recognition, identification, creation, discovery and exploitation are processes suggested in the field of entrepreneurship and opportunity recognition had been examined in the context of social entrepreneurship (Lehner & Kansikas, 2012). However, researchers frequently select only a few processes to study without addressing the other processes because there is no consensus regarding their existence or even their definitions. For example, there is much debate regarding whether opportunities are found through a process of "discovery" or through a process of "creation" (Alvarez & Barney, 2007). Alvarez et al. (2012) suggested that the information and decision-making setting used in the processes of discovery and creation are different; the former is a knowledge-driven process that allows for risk-based decision making, and the latter is a socially driven process that enables incremental, inductive, and intuitive decision making. Short et al. (2009) believed that scholars will progress toward a middle ground in which certain opportunities are perceived to have been discovered whereas others are created, depending on the context.

Opportunity discovery and opportunity exploitation are two core processes of entrepreneurship (Shane & Venkatraman, 2000). *Opportunity discovery* is a process used to "perceive a previously unseen or unknown way to create a new means-ends framework" (Eckhardt & Shane, 2003, p.339), whereas *opportunity exploitation* is a process used to acquire resources or to engage in activities that exploit an

opportunity. Shane (2012) emphasized that these processes do not necessarily follow a planned sequence. These processes are suggested to hold the greatest potential for significant economic impact to alleviate poverty (Alvarez & Barney, 2014).

### **4.3 Research Methodology**

We adopted an in-depth case study as our research methodology because the study of opportunity processes in the context of social business models has had little empirical substantiation (Eisenhardt, 1989) and because an inductive method is more suited to answering a 'how' question (Walsham, 1995). Furthermore, our phenomena are complex and cannot be easily separated from their organizational context (Langley, 1999). There are rich prescriptions (Klein & Myers, 1999; Pan & Tan, 2011; Walsham, 2006) for the conduct of case studies in a manner that facilitates the exploration of conceptual arguments and the generalization of theoretical statements. In accordance with the instrumental case research strategy (Stake, 1995), our primary focus is to acquire a deeper understanding of the issues related to social business models and opportunity processes, whereas the case itself is of secondary interest. Furthermore, we deployed a pragmatic approach (Pan & Tan, 2011) that was infused with techniques used to simplify and ensure viability without sacrificing rigor.

#### **4.3.1 Case Study**

Our case study is the *Suichang E-commerce Association (SECA)*, a social enterprise dedicated to promoting e-commerce in Suichang, which is a county located in Lishui City of China. Suichang has a population of 231,000 that is organized into seven towns and 11 villages. Within three years after SECA was founded in March of 2010, it had received significant attention from the e-commerce industry and government agencies across China. In 2013 alone, there were more than 120 official visits from government agencies and the news media, which represented a surge from 38 in 2012. As of August 2013, SECA had approximately 1,300 members. Specifically, 90% of these members were netrepreneurs who generated 25 million US dollars in sales in 2012. As of August 2013, SECA employed a staff of 120 employees that was organized into three functional departments: production (to assist suppliers in designing products suitable for e-commerce), marketing (to collaborate with government agencies to promote local products), and a special department that assisted villagers in adopting e-commerce. The success of SECA is unique because this small nonprofit organization is able to mobilize and shape government agencies, entrepreneurs, suppliers, the Alibaba Group (the largest e-commerce platform operator in China), and villagers to successfully promote e-commerce in Suichang. We found SECA suitable for our study because it demonstrated its ability to construct a social business model within a short period of time, from March 2010 to Aug 2013. In addition, the government of Suichang provided us with adequate access to villages and various stakeholders of SECA, including key decision makers who had strategized the social business model. Based on the rich data available to us in this single-case

study, it is feasible to generalize certain theoretical statements from our empirical research (Lee & Baskerville, 2003; Walsham, 1995).

#### **4.3.2 Data Gathering and Data Analysis**

We gathered background information on SECA, Lishui City, Suichang, and the ecosystem of the e-commerce industry in April and June of 2013. In July and August of that same year, we interviewed SECA's founders, and we visited SECA and its logistic and supermarket sites, two villages in Suichang and nine e-commerce enterprises. In addition, with the help of the local government, we conducted two official forums that facilitated our interaction with government officers. We transcribed more than 120,000 words from our interviews with 12 Government officers, nine netpreneurs (of which three were suppliers as well), five suppliers, four SECA officers and six villagers. The list of our informants can be found in table 10. In the initial stage, we conceptualized the phenomenon from the perspective of opportunity creation to understand how the social business model was constructed. We also scanned secondary data from SECA's official website ([www.wdxh.org](http://www.wdxh.org)), from 34 articles in the news media, and from official reports published by Lishui City and Suichang. The scanning process was undertaken from September 2013 through November 2013 to achieve data triangulation, reduce self-reporting bias, and resolve any incongruence that might have arisen from collecting these additional data. During the period of our data analysis from December 2013 to February 2014, the notions of *endogenous opportunity* and *opportunity repertoire* emerged. We will explain these notions in the *Discussion* section below. The emergent model was then validated to ensure it was congruent with both the empirical data and the previous



literature (Klein & Myers, 1999). Table 11 shows the approaches used to apply Klein and Myers' (1999) principles to conduct this interpretive research.

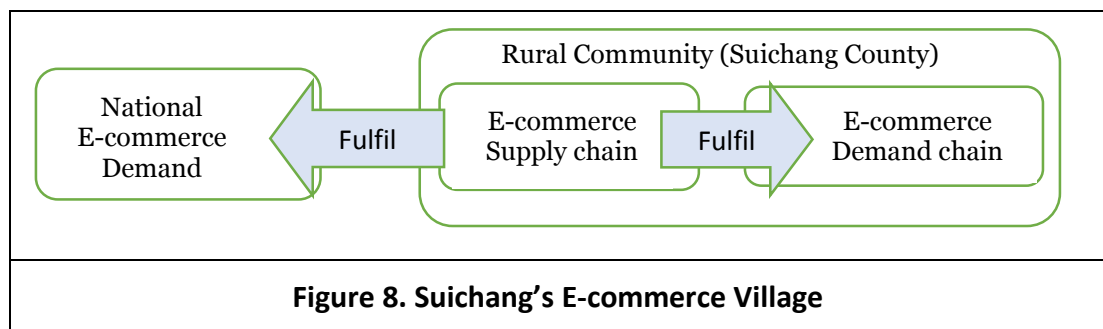
<b>Table 10. List of Informants in Study 3</b>		
<b>Stakeholder Type</b>	<b>Organization or Product</b>	<b>Designation or Role</b>
Government (City)	Lishui Municipal Communist Youth League	Secretary
	Lishui Municipal Communist Youth League	Deputy Secretary
	Lishui Municipal Administration for Industry and Commerce	Director
	Lishui Municipal Human Resources and Social Security Bureau	Employment Secretary
	Lishui Municipal Commission of Economy and In formalization	Assistant Director
	Lishui Municipal Commission of Commerce	Representative
	Lishui Municipal Bureau of Agriculture	Deputy Director
	Lishui Municipal Office of Agriculture and Rural Work	Deputy Director
	Lishui Municipal Finance Bureau	Executive (Enterprise)
Government (County)	Suichang County	County Head
	Suichang County Quality Bureau	Director
	Suichang County Agriculture Bureau	Deputy Head
Social Enterprise	Suichang E-commerce Association	Chairman
	Suichang E-commerce Association	Deputy Chairman
	Suichang E-commerce Association	GANJIE Project Director
	Sowin Internet (Services to netpreneurs)	Director
Netpreneur	Bamboo Charcoal	Founder 1
	Bamboo Charcoal	Founder 2
	Agricultural Products	Founder
	Wang Yi Electronics (Agricultural Products)	Founder

	Lian Rui Internet Technology (12 Taobao Portals)	Founder
	Bai Tang Internet Technology	Founder
Netrepreneur / Supplier	Kids Clothes	Founder
	Kids Clothes	Head of Operations
	Baby Products	Executive
Supplier	Service Provider	Founder
	Yunda Logistics	Executive
	People's Bank of China Lishui	Deputy Head
	China Unicom Lishui (Telecommunication Company)	Deputy Secretary (Communist Youth League)
	China Mobile (Telecommunication Company)	Executive (Operations)
Villager	Village 1 in Wang Cunkou Town	GANJIE Operator 1
	Village 1 in Wang Cunkou Town	GANJIE Operator 2
	Village 1 in Wang Cunkou Town	GANJIE Operator 3
	Village 2 in Wang Cunkou Town	GANJIE Operator 1
	Village 2 in Wang Cunkou Town	GANJIE Operator 2
	Village 2 in Wang Cunkou Town	E-commerce User

Table 11. Approaches used to apply Klein and Myers' (1999) principles to conduct interpretive research in Study 3	
Principle	Approaches used in our study
Fundamental principle of the hermeneutic circle	Iterative interviews between different stakeholder types, and also among each stakeholder type.
Principle of contextualization	The gatekeepers provided the social and historical background of the e-commerce villages and the social enterprise throughout our site visit; informal interactions with different stakeholders during lunch/dinner/breaks to gain further contextual understanding.
Principle of interaction b/w researchers and participants	Questions were semi-structured, which left room to check assumptions and facts and to prompt for unexpected information or surprises during interviews.
Principle of abstraction and generalization	The research framework in figure 8 (will be explained in the <i>Case Description</i> section below) guided the level of abstraction required in our data interpretation; the idiographic details were abstracted to the construct level; and we then generalized the social business model with links to essential contextual concepts.
Principle of dialogic reasoning	The subthemes in each construct in the research framework were derived from actual data to avoid theoretical preconceptions and the research framework is designed with minimal constraints or structures to link the core constructs to allow new insights to emerge from the data.
Principle of multiple interpretations	We identified key events described by SECA, and used these events to guide interviews with different stakeholders to interpret them.
Principle of suspicion	The principle of multiple interpretations and secondary data scanning helped to reduce biases and systematic distortions; we paid special attention to the potential biases from data collected from the government and SECA officers.

#### 4.4 Case Description

The social business model constructed by the social enterprise consists of two interconnected initiatives: the e-commerce supply chain and the e-commerce demand chain. Figure 8 depicts the relationships among the two initiatives, the rural community, and the e-commerce opportunity offered in China.



##### 4.4.1 Social Enterprise

As opposed to a typical industry trade association, the president of SECA did not hail from a traditional organization in the e-commerce industry. Instead, he was a top manager in another industry in Shanghai, a nearby city. His extensive management experience and his view on China's e-commerce impressed the Suichang's e-commerce community during a local meeting in March 2010 that was focused on beginning an e-commerce trade association in Suichang. Although most attendees met him for the first time during the meeting, he was elected the president of the new organization. He had accepted the role as a volunteer because he believed that the e-commerce community was sincere in wanting to help the local community.

*"I find [the establishment of SECA] is at least a positive move – a group of people coming together not for self-interests but to make Suichang a better*

*place for netpreneurs.... I felt we were lucky to have a group of people in rural areas to think about how the information age can give us a chance to level the playing field.” (President of SECA)*

A council was immediately formed to manage and operate the association. With a limited fund of RMB\$30,000 (approximately USD\$5,000) at its outset, council members were volunteers with no financial compensation. The core activities of SECA in the first year were focused on encouraging individuals to enter the e-commerce market as entrepreneurs. SECA continued to position itself as a group of passionate social activists promoting the use of e-commerce to enhance the community.

*“Perhaps I am a sentimental person because someone in my situation would normally be unlikely to return to Suichang...I had given up many things that were considered precious by others...but I can’t be too calculating on a daily basis. This may be just my belief or something related to the fact that this is my hometown...which I think is more important.”*  
*(President of SECA)*

The Communist Youth League (CYL), the youth movement under the Communist Party of China, was one of the key sponsors of SECA. The CYL has some degree of political power to influence government agencies. It was in the CYL’s interests to support SECA programs because the CYL has a political agenda to develop rural areas via the youth movement. Specifically, the CYL wanted to collaborate with SECA to create career opportunities and cultivate entrepreneurship among youths.

In contrast to courses offered by others in the city, SECA had no difficulty attracting participants to attend its courses. In addition to the higher demand resulting from the lack of learning opportunities in rural areas, SECA had been – more importantly – perceived by others as a social-driven organization, as an organization supported by the CYL, and as an organization with leaders who were not motivated solely by profit. During its first year of operation, the news media ran an increasing number of stories and, in turn, fostered the support of higher government authorities.

*“There are great challenges for SECA to operate with limited resources. The local governments of Lishui City and Suichang also see that the trend of e-commerce development in China will have a great impact on our farmers, on small and medium-sized enterprises, on e-commerce operators and on young entrepreneurs. It is imperative for the county to commit resources in this area.” (County Head of Suichang)*

SECA and key stakeholders believe that e-commerce is both an economic opportunity for businesses and an opportunity to transform the lives of the people in rural areas because e-commerce equalizes the playing field for businesses and consumers and provides villagers hope that their children working in the city may return to their hometown.

*“Originally, villagers earned money so that their children could study and work in large cities... now they have started to ask the children to come back...At this stage, it is not our focus to generate many online sales, but to transform a small county.... Although we had trained 3,000 individuals, only a few hundred of them eventually started their e-commerce sites. Although*

*the others did not start companies, they learned how e-commerce works, which is very important.” (Deputy General Manager of SECA)*

#### **4.4.2 E-commerce Supply-Chain**

Members who had trained and decided to enter the e-commerce market realized that one challenge was sourcing good competitive products to sell. Suppliers approached SECA to sell their products in the belief that SECA had already established a network of resellers, and netrepreneurs asked SECA to negotiate with suppliers on their behalf as suppliers. However, SECA initially hesitated to help because such assistance implied that SECA might have to create a complex supply chain connecting suppliers and members.

*“There were many e-commerce trade associations in China then, but none involved building a supply chain. We decided to go for it partially due to emotion; otherwise, all past effort would go to waste...at that time, we had not figured out how to make a profit yet.” (President of SECA)*

After its first year, SECA obtained financial support from CYL to build and operate two new facilities: a supermarket to display the products of suppliers and a warehouse to store, package, and deliver products directly to consumers on behalf of netrepreneurs. To operate these facilities well, many new capabilities had to be implemented. For example, from the aspect of supplier management, SECA now had to be involved in selecting, negotiating, packaging, and standardizing products as well as conducting market research and clearing regulatory requirements; in delivery management, SECA had to be involved in controlling product quality, managing warehouses, and building a delivery network. Many new staff were hired to handle

the significant increase in activities. Netpreneurs were pleased with these activities because they could leverage these services to overcome their shortfalls. The response to these services was so positive that these facilities were self-sustainable financially within two months – ten months earlier than initially estimated.

As agriculture is the main economic driver of Suichang, SECA and the local government collaborated to resolve the many issues related to quality control regarding food safety, packaging and delivery of agricultural products. Because the story of the new supply-chain was again in the news media, Alibaba Group, the largest e-commerce platform operator in China, was keen to find out more regarding e-commerce in Suichang. On May 17, 2012, the Alibaba Group became a strategic partner of Suichang County because it envisions agricultural products as the next wave of e-commerce to hit China. This development has led to a surge in the number of visits from academics, corporations, the news media, and government agencies from other cities and provinces.

*“The associate played a huge role in drawing attention and resources to Suichang, and this benefits the entirety of e-commerce in Suichang and facilitates implementation of controls for agricultural products in Suichang. Otherwise, the government might not take this segment seriously.”*  
*(Netpreneur)*

Despite more members’ dependence on SECAs’ supply-chain to sell their products, the chain was merely provided for netpreneurs to jump start their ventures because SECA understood that there would not be sufficient resources to handle sales volumes if many of these ventures became highly successful. To further assist



promising entrepreneurs, SECA offered incubation programs for them to operate on SECA's premises and provided them with easy access to the two facilities and services.

#### **4.4.3 E-commerce Demand-Chain**

The target customers of entrepreneurs were mainly Chinese consumers living outside Suichang; and the target suppliers were mainly farmers in Suichang who were producing agricultural goods. The living conditions of villagers were primitive because infrastructure, transportation, and logistics in rural areas remained underdeveloped. This situation created a gap between farmers and entrepreneurs in understanding e-commerce. Thus, SECA needed to expend more efforts to educate and collaborate with farmers to increase their participation in e-commerce. Initially, farmers were not ready to make purchases online, as illustrated by the following quotation:

*"[Farmers] are still doubtful about e-commerce purchases. The money is immediately deducted from their bank accounts, but the goods are not in their hands yet. They were not comfortable making purchase decisions solely based on photographs displayed online and couldn't judge the quality of the goods." (A SECA manager)*

SECA and Alibaba Group wanted to explore the feasibility of creating an e-commerce demand-chain in Suichang villages. In a survey of 3,200 samples conducted by SECA on 15 April 2013, 70% of the villagers fell between 31 and 50 years old and 74% of the villagers have an annual income between RM\$10,000 and RM\$35,000 (between US\$1,640 and US\$5,750). Although many villagers are young with relatively high

incomes, they were unable to purchase goods easily due to the poor infrastructure in these rural areas. For example, they had to travel to the nearest towns several times each month to purchase everyday goods and to perform other tasks, such as banking and paying utility bills.

In May 2013, SECA launched GANJIE, an online platform ([www.51ganjie.com](http://www.51ganjie.com)) that was built primarily to provide online services to villagers. This ambitious plan's objective was to establish 150 *e-commerce stations* in villages, covering all of Suichang county within 12 months. Stations were managed by staff hired directly from the villages. Staff could perform both online selling and buying on behalf of villagers. The station also served as the courier's collection point for households living nearby. Significant effort was expended regarding the ergonomic and visual design of the station to ensure that it could serve as a general meeting place for villagers to socialize and observe e-commerce activities performed by others. The local government was supportive of GANJIE because it aligned well with the government's policies to enhance the living conditions of the villagers.

*"[GANJIE aims to] provide villagers with convenient online services and efficient movement of goods, to assist young villagers to start businesses and increase jobs opportunities, to enhance the overall branding of Suichang's enterprises, to promote niche local products, and to assist the government in implementing policy." (GANJIE's Value proposal presented by SECA).*

Stations were managed by staff hired directly from the villages. Staff could perform both online selling and buying on behalf of the villagers. The station also served as

the courier's collection point for households living nearby. Significant effort was put into the ergonomic and visual design of the station to ensure it could be a general meeting place for villagers to socialize and observe e-commerce activities performed by others. The outcome was encouraging as of September 2013. For example, a small village with fewer than 20 households generated approximately 80 transactions within 20 days after the *e-commerce station* was established. SECA was again able to access another round of news media attention to report on GANJIE, further enhancing the reputation of the government, SECA and enterprises in Suichang.

SECA created new stakeholders with the GANJIE initiative. For instance, when the 150 *e-commerce stations* were deployed, it would establish a new logistic network connecting local courier firms to China's mail service operator EMS ([www.ems.com.cn](http://www.ems.com.cn)) to cover many of the underserved rural areas. With economies of scale, SECA managed to entice local courier services to deliver goods between e-commerce stations and EMS collection points. SECA also allowed EMS to manage the logistics outside of Suichang, permitting villagers to purchase goods from GANJIE or other e-commerce sites. Because many of the villagers were farmers, GANJIE attracted agriculture suppliers of products, such as sprayers, hoes, fertilizers, and pesticides, which reduced the marketing cost for these suppliers and encouraged them to offer lower prices to farmers.

#### **4.4.4 Social Value**

The scope of work to create two value chains is beyond a typical supply chain project for a commercial organization. Building the two chains is about inviting as many entrepreneurs, suppliers and consumers in Suichang as possible to participate. SECA's motivation to create these chains was more than just seeking profits for its members; its objective was to develop and grow the rural hometown.

*"It is difficult for other counties to assemble a similar team to SECA... Not only do you need an outstanding team, but it must also have a public service mindset...Of course, to sustain the operation, it is necessary to make profits. However, it still needs a public service mindset; otherwise, it is difficult to build a successful association" (Netrepreneur)*

The development of the rural community was in effect solving portions of the *three rural issues* (“三农问题”), a term commonly used in China to refer to three economic and social issues in China's rural areas: weak industrialization of agriculture, underemployed villagers and undereducated farmers. SECA understood its value proposal to the government was effective because the social objectives of SECA and government were well aligned.

*"We help [the government] sell and distribute agricultural products, solving at least this aspect of the 'three rural issues'. We help them resolve e-commerce. In Suichang, at least three to five thousand people are directly or indirectly related to the e-commerce industry – solving entrepreneurship and unemployment issues... Thus, the government wants to help our*

*programs because we are solving some of their problems.” (President of SECA)*

In April 2013, SECA undertook a successful sales promotion to sell fresh pork online for the first time. Within three days, 20,000 kg of pork were ordered online because pigs were raised on Suichang’s mountains at least 500 meters above sea level, fed with wild grass and grains, and consumers believed the meat was safer and better tasting. To fulfill the orders, SECA sent fifteen staff to pick 60 pigs from the villagers during the day, and then transported the pigs to a slaughterhouse to be processed the next morning at 6 am. Using cold storage transportation, the meat was sent to a packaging company located 200 miles away. However, the packaging company only began working at 8 pm – after office hours – so they could complete their usual work. After a few hours of tedious packaging until midnight, SECA transported the products to another state and then distributed it to individual customers in the morning.

*“The whole process seems simple when I described it. I went to the site a few times, and I cried when I saw the [impassive] state of the staff. No one can really help them, the entire process is just that long and exhausting – a 12-hr cycle in each stage” (A manager of SECA)*

Although SECA was not making a profit from the sales promotion, it demonstrated it was feasible to deliver fresh meat within 24 hours. More importantly, SECA and its members learned about the challenges and opportunities involved in e-commerce with fresh meat products. The local government leveraged this success story to promote Suichang’s brand of pork at trade events, further assisting households living on the mountain to sell an average of four pigs per household annually.

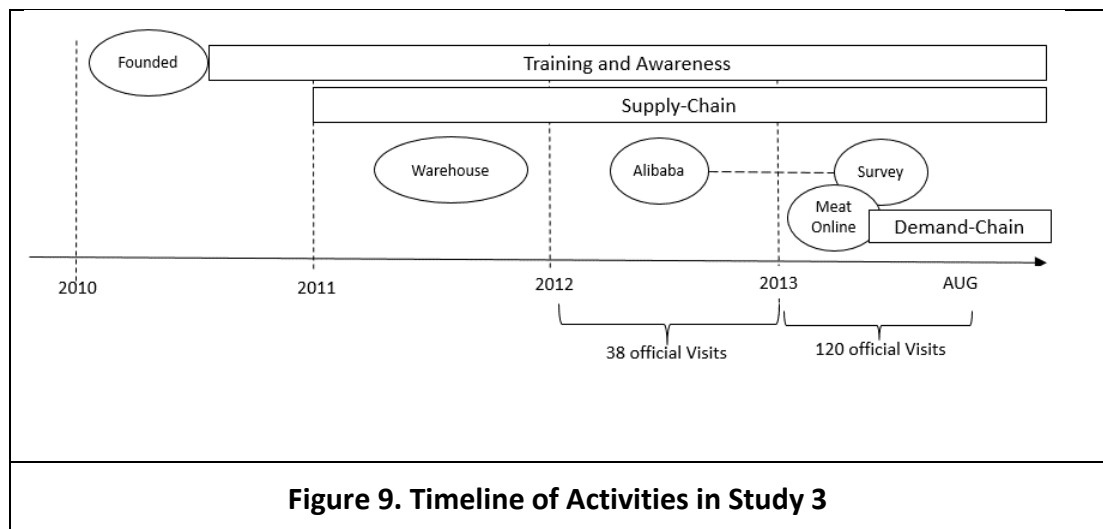
Different government agencies positioned their roles in promoting e-commerce from a social value perspective. CYL articulated its vision as the use of information systems to develop industries, drive youths and fresh graduates to innovate and establish new businesses, improve Suichang's tourism and agricultural product sales. Creating a business environment that encourages entrepreneurs and/or enhances rural infrastructure by facilitating economic exchanges generates social value for the masses. The shared social goals among agencies drove collective actions to support the e-commerce industry.

*“The members in the e-commerce community are very young. E-commerce is very fashionable and full of vibrancy. Thus among younger people, a shared notion that all must work and grow together developed. We collaborate harmoniously to develop our e-commerce industry”. (A representative from Suichang’s Trade and Economic Bureau)*

As a social enterprise, SECA had the mindset that fulfilling social needs is a higher priority than fulfilling economic needs and that conducting economic activities is an effective means to fulfill social needs. While SECA was actively implementing both the supply and demand chains, charity campaigns for various social purposes were regularly conducted. In addition, whenever SECA encountered needy families, particularly while seeking products in remote villages, help would be offered [5]. From the government's perspective, economic activities within Suichang were important to social development.

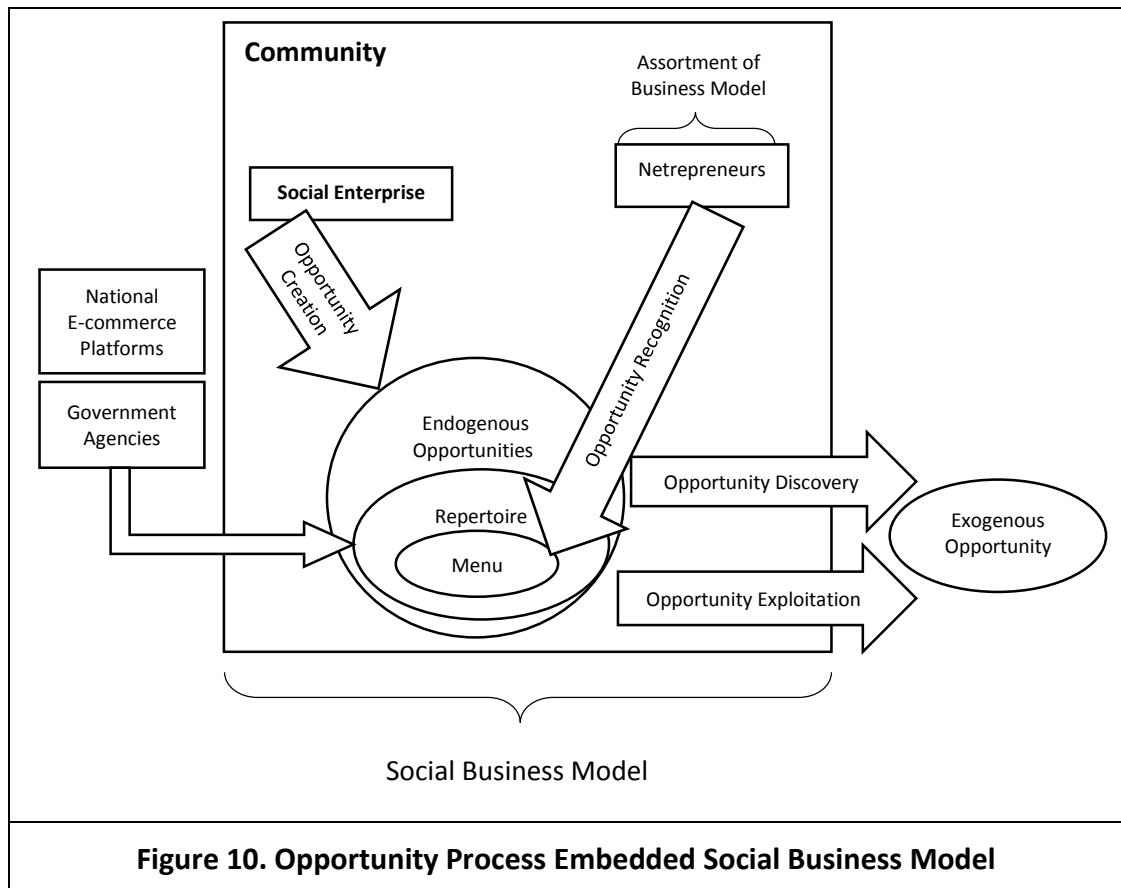
*“[E-commerce] solves the remote villagers’ problem of difficulty in buying everyday goods. This alone is very meaningful.” (County Head of Suichang)*

Figure 9 displays the timeline of key IS activities in study 3.



#### 4.5 Analysis and Discussion

Figure 10 depicts our conceptualization of an opportunity process embedded social business model. The next few sections will explain different components of this figure. Section 4.5.1 explains how the social enterprise mobilized resources from government agencies, national e-commerce platforms and grow the number of netrepreneurs. Section 4.5.2 explains how the social enterprise increased the opportunity discovery of the exogenous opportunity. Section 4.5.3 explains how the social enterprise created endogenous opportunities; and section 4.5.4 explains how some of the endogenous opportunities can be enhanced to opportunity menu so to increase opportunity recognition.



**Figure 10. Opportunity Process Embedded Social Business Model**

#### 4.5.1 Social Enterprise as Business Model Designers

In a commercial enterprise, the focus is on maximizing economic value for shareholders, whereas in social enterprises, the focus is on maximizing social value for stakeholders. However, the notion of the *stakeholders* of a social enterprise is not as clear as the concept of *shareholders* in a commercial enterprise because a social enterprise has much greater freedom in selecting its stakeholders. Although a social enterprise conducts economic activities designed to generate different values for different stakeholders, the main objective is to reach an outcome that can allow the 'target' stakeholders to receive maximum social value. However, the social enterprise must also simultaneously generate sufficient economic value to survive and grow. Yunus (2009) referred to this organizational form as a *social business*.



*“...a social business is designed and operated just like a ‘regular’ business enterprise, with products, services, customers, markets, expenses and revenues. It is a no-loss, no-dividend, self-sustaining company that sells goods or services and repays investments to its owners, but whose primary purpose is to serve society and improve the lot of the poor.” (Yunus et al., 2010, p.311)*

Although most activities conducted by a social enterprise fall under ‘regular’ business operations, the strategic questions associated with the design of its business model are fundamentally different than the questions associated with commercial enterprises. For example, rather than “what can we do to earn more profit”, a social enterprise asks “what can we do to ensure that our community earns more profit”. The designer of a social business model has more choices in the selection of stakeholders, in which each has different desires for economic value, social value or a mix of the two. Thus, the task to determine a set of activities that can fulfill all these desires in tandem is complex.

When an activity can generate both social and economic values, the primary intention of an enterprise to conduct the activity is ambiguous to outsiders. To illustrate this point, we consider two common business activities: ‘enhancing services to increase revenue’, and ‘cutting cost to increase profit’. When an enterprise relentlessly finds ways to enhance its existing services, the primary intention might be viewed as to increase social value for customers or increase economic value for stakeholders. When an enterprise relentlessly finds ways to reduce its costs, the primary intention might be viewed as to increase profit for shareholders or to use

the savings for the pursuit of a social goal. The answers do not really matter to the enterprise as long as it believes that business activities can lead to more resources (e.g., revenue, savings and government support) for the enterprise; the enterprise will continue to conduct these activities relentlessly.

Because an activity can concurrently produce social and economic value for the same or (more often) different stakeholders, a social enterprise must communicate its intentions clearly – both internally and externally. Internally, these intentions guide decision makers whenever there is a tradeoff between social and economic goals. Externally, it avoids the perception that the activity of the business is largely intended to financially benefit a particular group of stakeholders. Thus, the “tight coupling of mission, method and operationalization allows for the multi-stakeholder promise of the business model to be fulfilled” (Wilson & Post, 2011, p. 715). For instance, although SECA was registered as a trade association primarily serving netrepreneurs in Suichang, it consistently positioned itself as a social enterprise that was established to serve the wider public in Suichang. This position was reinforced by the founder of SECA not being linked to an e-commerce firm or to a supplier. The public image of SECA helped obtain a significant and unusual level of resource support from the government, news media and other associations, including by attracting government representatives – such as the CYL and a local Trade Department – as sponsors of events. In addition, SECA worked on the beliefs of its staff and that the most valuable goals are those that support collaborative work or *pro-social goals* (Birkinshaw et al., 2014).

#### **4.5.2 Opportunity Discovery of an Exogenous Opportunity**

The rapid growth in e-commerce sales represents the exploitation of an obvious entrepreneurial opportunity in the e-commerce ecosystem, which can be viewed as an **exogenous opportunity** by entities external to the system. Growing this ecosystem to increase the overall market size of e-commerce is in the interest of large e-commerce platform operators. Although there is competition among platform operators to attract netrepreneurs, they jointly promote the belief that e-commerce can potentially create lucrative economic value for individuals. McMullen & Shepherd (2006) modeled the desirability and feasibility of an opportunity as two important factors influencing the decision to exploit the opportunity. In rural areas such as Suichang, desirability as a motivating factor to begin e-commerce is strong because of a significant lack of economic opportunity compared with cities. Although many challenges related to supply chains in rural areas remain, selling products via the existing e-commerce ecosystem is now feasible.

Villagers gained awareness of the exogenous opportunity when news media frequently reported the success stories of netrepreneurs in China. Despite lacking much basic knowledge regarding the operation of an e-commerce business, villagers believed that they could gain economic value once they learned how to operate the seller functions provided by the platform. Thus, high desirability and perceived feasibility led to high demand to gain know-how in rural areas.

*“Many [e-commerce] courses have trouble filling up their seats, but we have no problems getting people here to sign up. When the class is full,*

*people will bring their stools and sit around the classroom to listen. The social need for this is simply too great.” (President of SECA)*

This social enterprise has tirelessly trained as many people as possible because the enterprise believes that the community as a whole will benefit when more villagers know about e-commerce. These free courses further increase the awareness of the exogenous opportunity when trainees spread what they have learned to other households in their villages. Although only a minority of the trainees eventually decided to exploit the exogenous opportunity, the increased knowledge has helped increase the adoption of e-commerce in the community.

The exogenous opportunity is open to anyone in China to exploit. The opportunity is less about competition among netrepreneurs living in the same rural area and more about competition between netrepreneurs in rural areas and those in other parts of China. The activities organized by social enterprises help promote a sense of community striving for a common goal to exploit the exogenous opportunity. These activities were, in effect, social interaction, leading to production and reproduction of the identity of various stakeholders and, in turn, helping to establish consensus regarding the roles of different stakeholders in pursuing the common exogenous opportunity. This social enterprise reinforces the notion that, for netrepreneurs in a rural area to compete with ‘outsiders’, collaboration among the social enterprise, the community, and the local government is essential. Because there are significantly more direct competitors outside the rural area than within, netrepreneurs within a rural area view one another more as partners than competitors. Thus, it is common among stakeholders to share knowledge and operational resources, such as

warehouses and logistic facilities. Knowledge sharing and collaboration lead to interaction between identity resources and knowledge resources and, in turn, accumulates valuable social capital (Falk & Kilpatrick, 2000).

The demand-side of the ecosystem is already established in the Taobao platform that has more than 500 million registered users who can potentially make purchases. The initial strategy of the social enterprise is to transfer knowledge to villagers regarding how to operate an e-commerce business on Taobao, creating a supply-side market in the rural region. Although such creation is an opportunity discovery to complete a match-up between demand and supply (Sarasvathy et al., 2003), knowledge of operations is merely a prerequisite to participate as a seller; it is not sufficient for entrepreneurs to compete nationally with other parts of China. The social enterprise must find new ways to compete beyond the sharing of knowledge and facilities among its members. The new opportunity discovery focused on building a cluster to produce high quality local agricultural products. E-commerce appealingly diminishes the traditional roles of location; it actually opens new opportunities to create clusters, “geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions” to compete in a particular area (Porter, 2000, p.15). The search for new ways that rural areas can compete as a whole was a significant undertaking by the social enterprise.

### **4.5.3 Opportunity Creation of Endogenous Opportunities**

Sarasvathy et al. (2003) conceptualized *opportunity discovery* as entrepreneurial processes aiming to determine new means to exploit known goals and defined *opportunity creation* as entrepreneurial processes used to determine both new ends and new means. From this perspective, an exogenous opportunity is a known end, and the social enterprise is operating in the mode of opportunity discovery by inducing new means for the community to exploit the opportunity. The formulation and implementation of the two chains in our case study are in the mode of opportunity creation because key elements – including the content, structure, and process of the chains – were nonexistent. These chains have revealed new opportunities for the masses to participate in certain parts of the chains, indirectly linking to the exogenous opportunity. We refer to newly created opportunities for the masses as *endogenous opportunities*.

Because endogenous opportunities are designed for the heterogeneous masses, there will be a combination of social and economic value propositions for different groups of stakeholders. Those who are involved in the design and implementation of endogenous opportunities should have an exogenous opportunity in mind as a target because the outcomes from mass exploitation of the endogenous opportunities should lead to successful exploitation of the exogenous opportunity. The opportunity creation process involves powerful stakeholders such as the local government and national platform operators to ensure that endogenous opportunities are able to obtain sufficient legitimacy and valuable resources to later promote those opportunities to the masses. These endogenous opportunities are ‘sitting

somewhere' until someone in the community decides to take action to exploit them. We refer to the platform in which well-designed entrepreneurial opportunities reside as an ***opportunity repertoire***. The opportunity repertoire allows an entity (whether entrepreneur or non-entrepreneur) to configure and use some of the elements in the repertoire to create and exploit an entrepreneurial opportunity for himself or herself. Unlike a preexisting exogenous opportunity for entrepreneurs to discover and exploit, endogenous opportunities were nonexistent but are created to encourage entrepreneurial activities from within. The opportunity repertoire in which endogenous opportunities reside offers a set of rich possibilities for entrepreneurs to explore from within. The opportunity repertoire can serve as both an enabling tool for opportunity exploitation and as a source of opportunity discovery because it increases the available opportunities that potentially increase entrepreneurial *alertness*, a key opportunity discovery feature referred to as "an attitude of receptiveness to available (but hitherto overlooked) opportunities" (Kirzner, 1997, p.72).

During the creation of the opportunity repertoire, stakeholders identify issues that prohibit the exploitation of an exogenous opportunity and then collaborate to construct solutions to rectify these issues. These solutions are, in essence, new entrepreneurial opportunities designed for entrepreneurs to exploit from within. In our case study, an entrepreneur can select to be a service provider or a consumer of any part in the supply or demand chain. For example, in the supply chain, a local logistic company can provide services to deliver goods from factories and consumers, and an e-commerce enterprise can rely on delivery services to fulfill online sales. In

the demand chain, a netrepreneur can sell agricultural supplies to villagers. Some issues must be resolved by government agencies. For example, the local government assists in the standardization of agricultural products to ensure that these products can achieve a better reputation and sell more. The social enterprise relies on effectuation to create these opportunities because both the supply and demand are unknown initially (Sarasvathy et al., 2003). The overall outcome of these exogenous opportunities is to increase the feasibility of exogenous opportunity.

#### **4.5.4 *Opportunity Recognition of Endogenous Opportunities***

Because the opportunity repertoire consists of opportunities associated with both supply and demand chains, the scope of the social enterprise is significantly beyond those common business activities of a typical commercial enterprise. A social enterprise does not construct the opportunity repertoire solely to maximize the benefit to the enterprise itself but aims to benefit as many stakeholders in the community as possible. In addition, the supply chain can collectively compete with other communities in fulfilling exogenous demands. The interdependencies within and across the two chains create many opportunities to strategize business activities and invite participation from local and national government agencies. These opportunity-driven activities are then promoted to the community by articulating how each can benefit specific stakeholders. This promotion results in mass awareness of a well-structured *opportunity menu* from which diverse stakeholders can select. Due to the social-seeking nature of a social enterprise, the promotion is supported by significant rare resources such as institutional legitimacy, viral news



from media, and community acceptance. These resources are typically not accessible by a commercial enterprise.

The presentation of the opportunity repertoire in the form of an ***opportunity menu*** allows the masses to recognize the endogenous opportunity better because it emphasizes how various activities are linked and thus supported by other activities in the ecosystem. Although it may be feasible for an individual to participate in a limited set of activities, the individual can gain an overview of the ecosystem as the full *opportunity menu* is available for selection. The ability to view the entire opportunity menu increases the desirability of the overall endogenous opportunities in the opportunity repertoire because opportunities are frequently interconnected. The *opportunity repertoire* is highly dynamic because a new opportunity added to the repertoire can both enhance related endogenous opportunities and dramatically generate many new opportunities. For example, when the opportunity in which "government agreed to endorse a certain product if it can meet a set of standards" was added to the repertoire, it gave rise to many new opportunities. These opportunities include promoting new entries to sell and supply the product, seeking government endorsement of other products, providing consulting services regarding the new guideline, and implementing technologies to meet the applicable standards.

Although the supply and demand chains in the *opportunity menu* are deliberately created as endogenous opportunities for entrepreneurs to exploit immediately, there are other endogenous opportunities associated with the chains, giving rise to different stakeholders in the community to participate. The social enterprise can strategically select endogenous opportunities to be presented in different

opportunity menus for different stakeholders to recognize. Some of these endogenous opportunities cannot be exploited immediately because they are designed to facilitate new opportunity discovery and creation. For example, “government’s support of e-commerce in rural” areas is an endogenous opportunity initiated by the social enterprise, and discovering strategic partnerships to sell agricultural products online represents an opportunity for national e-commerce platform operators. Subsequently, the new partnership becomes an endogenous opportunity residing in the opportunity repertoire for the local community to activate new instances of opportunity processes. The iterative nature of opportunity creation and discovery contributes to a mass mobilization of stakeholders and their resources, which leads to a mass exploitation of nested levels of endogenous opportunities.

According to Murphy & Coombes (2008)’s model of social entrepreneurial discovery, entrepreneurial discoveries are epiphenomenal events that emerged via the mobilization of large-scale social, economic, and environmental resources into convergence. Diverse and rare resources are converged massively to facilitate both the creation and exploitation of the opportunity repertoire. We posit that the opportunity repertoire becomes the focus or ‘collection’ point of resources during the converging process. These resources are deployed to create endogenous opportunities for target stakeholders. Subsequently, more resources are mobilized when more stakeholders decide to exploit these opportunities. Because the opportunities are designed for mass participation, it implies that higher participation leads to higher social and economic values. However, when there is competition

among stakeholders, the social enterprise establishes policies to encourage fair market competition; however, more often the social enterprise divides the market or services to maximize participation. Table 12 summarizes the proposed terms in entrepreneurial opportunity from this study.

<b>Table 12. Summary of Proposed Concepts from Study 3</b>			
<b>Concept</b>	<b>Definition</b>	<b>Example in Study 3</b>	<b>The role of IS</b>
Opportunity Embedded Social Business Model	A social business model that has opportunity processes as key components to create and capture both social and economic values.	The business model of SECA.	IS as the opportunity context.
Exogenous Opportunity	An opportunity originated and developed outside the local community, and the local community has no influence to the ecosystem system associated with the opportunity.	Online trading via national-wide e-commerce platform providers such as Taobao.	IS as the opportunity source.
Endogenous Opportunity	An opportunity created and developed within the local community with the intention to exploit a target exogenous opportunity.	Opportunities created by the SECA, government of Suichang, and local businesses.	IS as an opportunity facilitator.
Opportunity Repertoire	A set of rich endogenous opportunities designed for different groups of stakeholders to participate.	Social and business concepts created and discovered from stakeholders.	IS as a key opportunity repertoire.
Opportunity Menu	The presentation of selected and well-developed opportunity repertoire so that target stakeholders increase the feasibility and desirability to exploit them.	Establishment of e-commerce training, incubation programs, GANIE platform and super market for online products and warehouse.	IS as an opportunity implementer.

#### 4.6 Conclusion and Limitations

Our study makes three contributions in research. First, it contributes to our knowledge of the role of various opportunity processes (i.e., opportunity creation, discovery, recognition, and exploitation) in the creation of a social business model. Specifically, it helps address the research gap highlighted in the introduction, “the mechanisms by which the underlying opportunity and the business model are interconnected have not been explored” (George & Bock, 2011, p.88). When we differentiate between exogenous and endogenous opportunities, we find that these processes coexist and are interconnected. Endogenous opportunities are constructed from within a community as a set of various means to exploit a known exogenous opportunity. Endogenous opportunities reside or present in a well-structured form, primarily strategized and controlled by the social enterprise.

Second, this study introduces two additional terms that would further improve the clarity of entrepreneurial opportunity concepts. We refer to the well-structured form of endogenous opportunities as an *opportunity repertoire*. The primary function of this new form is to facilitate the mass mobilization of participants in the creation, discovery, and exploitation of opportunities. To obtain mass awareness of the opportunity repertoire, traditional marketing principles were applied to package opportunities in the opportunity repertoire as “products” and to present them in different *opportunity menus* for different stakeholders. The presentation of selected and well-developed opportunity repertoire increases the feasibility and desirability of target stakeholders to exploit an opportunity.

Third, this study offers a fresh perspective that a business model can be embedded with dynamic elements; and they depict how new opportunities can be discovered or created on a continual basis. Traditionally we view processes as ways to formulate and develop a desired business model; and once the resources are orchestrated for a business model, it is difficult to change. However, the opportunity-embedded business model assumes the desired business model is not fixed, and resources are not orchestrated for a particular desired business model but for the creation of an ecosystem that can generate an assortment of business models for its stakeholders.

There are practical implications of this case study as the social business model can be a useful reference for villages seeking to adopt e-commerce, as suppliers or consumers. First, the structure and governance of the social enterprise are important determinants of obtaining rare resources from media, government support and public. To gain wide support from key stakeholders, the community must perceive that the social enterprise is driven by a social purpose, although the primary intentions of many of the activities are ambiguous. Second, a community should leverage the inherent relationships of its members (e.g. government, public, businesses and entrepreneurs) to foster cooperation instead of competition; and often without collaboration, exogenous opportunities far outstrip the resources available.

This study has at least two limitations that suggest the need for future research. First, we introduce the terms *opportunity repertoire* and *opportunity menu* to explain the important linkages between opportunity creation and discovery in a relatively abstract manner. As an explorative study of a complex topic, these concepts remain

in their early stage, and we did not delve further into the sub processes such as objectification or classification of opportunities, which potentially might contribute to the prescription perspective of opportunity creation. Second, our social business model assumes that e-commerce activities occurring in the rural community have no impact on the target endogenous opportunity. This assumption implies that the nature of the endogenous opportunity remains unchanged after the creation of the endogenous opportunities. However, due to the recent success of several e-commerce villages, e-commerce platform operators such as Taobao are keen to create more opportunities for rural villages to adopt e-commerce. The nature of interaction between endogenous and exogenous opportunities is not investigated in our study.

## **5. Conclusion**

The creation of a business model is fundamentally the creation of a business idea to pursue entrepreneurial opportunities. Using the theoretical lens of effectuation and opportunity constructs, our studies provide insights into the mechanisms linking business models and entrepreneurial processes. The strategic actions in all three studies are associated closely with IS ecosystems, IS strategies and IS resources. The first study examined how a software firm revised its business models multiple times during a long product creation cycle to position itself advantageously in an established IS ecosystem. The second study examined how a large organization uses IS strategies and IS resources to increase its options to configure its business model. The third study examined how a social enterprise established a new IS-driven ecosystem within a rural community to exploit opportunities of a much larger IS

ecosystem. Studying business model development, from formulation to implementation, is beneficial to advance our knowledge of business model dynamics. Table 13 summarizes the key findings and contributions of the three studies.

<b>Table 13. Summary of Key Findings and Contributions</b>	
<b>Study 1: Effectuation-Causation Interaction</b>	
Key Findings	Contributions
<ol style="list-style-type: none"> <li>1. Effectuation and causation are both required processes to determine the business models in different phases of a new product creation.</li> <li>2. Identified four configurations of decision mechanisms that a firm can use to determine its business model and tactics.</li> <li>3. Identified four types of business model from a decision-making perspective: aspiration-, novelty-, efficiency- and strategic-driven.</li> <li>4. A firm’s perception and interpretation of opportunities of the IS ecosystem and IS resources of the marketplace are key factors in the formulation of its business model.</li> <li>5. Tactical actions influence upward to trigger a revision of the business model when actors detect flawed assumptions or discover new opportunities in the business model.</li> </ol>	<ol style="list-style-type: none"> <li>1. Introduce an entrepreneurial approach to discover the linkage between decision-making mechanisms and business model dynamics.</li> <li>2. Provide insights on how actors of IS firms explore and exploit the IS ecosystem and IS resources during a new product creation.</li> <li>3. The findings have practical implications for new product creation. Specifically, managers and professionals should apply both effectual and causal processes when formulating a business model and implementing tactics.</li> </ol>
<b>Study 2: Discovery-Exploitation Interaction</b>	
Key Findings	Contributions
<ol style="list-style-type: none"> <li>1. IS strategy can facilitate opportunity discovery when formulating the narrative and calculative logics of the business model and that the opportunity exploitation of IS resources enhances the subsequent choices of logics.</li> </ol>	<ol style="list-style-type: none"> <li>1. The findings fill the research gap on the mechanisms by which the underlying opportunity and the business model are interconnected.</li> <li>2. Offer a fresh perspective on the role of IS strategy in opportunity</li> </ol>

<ol style="list-style-type: none"> <li>2. Entrepreneurial vision can start with a conceptual business model and can then use IS strategy to increase the feasibility of exploiting subsequent opportunities and provide flexibility when formulating a desired business model.</li> <li>3. IS organization can leverage IS-driven enterprise projects to exploit IS resources without a clear desired business model in mind.</li> <li>4. The dynamic nature of the IS strategy, the business models and their interaction create path dependence, in which IS strategy can advance from standardizing to configuring and then to adapting a set of IS resources to develop the business model.</li> </ol>	<p>processes and business model development. Specifically, how the IS strategy can be implemented before the business strategy is fully formulated.</p> <ol style="list-style-type: none"> <li>3. The theoretical insights potentially can lead to a paradigm shift that the IS organization can play an opportunity-facilitator role, leading actors from different domains to co-formulate the business model for a large enterprise.</li> </ol>
<b>Study 3: Discovery-Creation Interaction</b>	
<b>Key Findings</b>	<b>Contributions</b>
<ol style="list-style-type: none"> <li>1. Opportunity processes (opportunity discovery, recognition, creation, exploitation) can be embedded in a social business model to enable mass mobilization of social and economic stakeholders.</li> <li>2. To exploit an exogenous opportunity for a social purpose, social entrepreneurs design a rich set of endogenous opportunities for mass stakeholders to exploit the exogenous opportunity directly or indirectly.</li> <li>3. The creation of opportunity repertoire offers an assortment of commercial business models for netrepreneurs to configure and use immediately.</li> <li>4. The creation of opportunity menu presents stakeholders with selected and well-developed opportunity repertoire so to increase the feasibility and desirability for them to exploit.</li> </ol>	<ol style="list-style-type: none"> <li>1. The findings fill the research gap further on the mechanisms by which the underlying opportunity and the business model are interconnected.</li> <li>2. Propose new terms that can help to improve clarity of the entrepreneurial opportunity concepts: opportunity embedded social business model, exogenous opportunity and endogenous opportunity, opportunity repertoire and opportunity menu.</li> <li>3. Offer a fresh perspective that a business model can be embedded with dynamic elements to explain how new opportunities can be developed on a continual basis.</li> </ol>



## 5.1 Effectuation-Causation Interaction

Study 1 adds several insights into the linkage between effectuation, causation processes and business models in the context of new product creation. We argue that effectuation and causation processes can co-exist and that they are configured in specific ways at different phases of new product creation. Knowing how these processes are configured helps us understand the characteristics of a business model and, more importantly, how a business model evolves over time. Our finding implies that – in addition to expert entrepreneurs – managers and professionals also deploy effectual processes in certain configurations. Tactical actions may influence upward to trigger a revision of the business model when actors detect flawed assumptions or discover new opportunities in the business model. For each business model identified, we dive further to analyze how each evolves. Our analysis regarding the interaction between the business model and tactics and suggest four configurations (*effectuation-centric, discovery-centric, causation-centric, and tactics-centric*) of decision-making mechanisms – each reflecting a specific type of business model dynamic.

During new product creation, both top managers and professionals should apply both effectual and causal processes when formulating a business model and implementing its tactics. In certain stages of the project cycle, one of these processes is emphasized more than the other; in other stages, both processes are used complementarily. At each stage, a new business model will emerge with a revised logic of the firm. Business model evolution is driven by dynamic processes in which a firm's goals and means are constantly revised as the nature of the project activities

change. It is critical for managers to understand the characteristics of the contrasting decision-making mechanisms and to be able to revise the business model effectively by using the examples illustrated in study 1.

## **5.2 Discovery-Exploitation Interaction**

In study 2, we posit that IS strategy facilitates opportunity processes to develop a business model. This study explores the role of IS strategy for two reasons: (a) IS strategy can be a sense-making device that explores technological capabilities and new opportunities (Galliers, 2011), and (b) IS strategy requires new approaches because we cannot assume that the positioning decisions of business managers are correct and do not change. Opportunity discovery and opportunity exploitation are two core processes in opportunity development (Shane & Venkatraman, 2000), and our finding is consistent with the important notion that these processes do not follow “a rational, planned, strategic, or even temporally ordered sequence” (Shane, 2012, p.14).

Our findings show that IS strategy can facilitate opportunity discovery when formulating the narrative and calculative logics of the business model and that the opportunity exploitation of IS resources enhances the subsequent choices of logics. As the two opportunity processes interact, new logic choices emerge, and these become new opportunities for the enterprise to select. In response to calls for research regarding IS strategies that enable the dynamic repositioning of an enterprise (Tanriverdi et al., 2010) and regarding business models that can potentially deepen our understanding both of IT-driven entrepreneurship and of the IS discipline (Clemons et al., 2013), study 2 helps us theorize the mechanisms by

which the underlying opportunity and the business model are interconnected. These mechanisms are associated with dynamics of business model development, IS strategy actions and the exploitation of IS resources associated with choices of narrative and calculative logics.

### **5.3 Creation-Discovery Interaction**

In study 3, we continued to focus on the research gap in which “the mechanisms by which the underlying opportunity and the business model are interconnected have not been explored” (George & Bock, 2011, p.88). Our case was a highly successful social enterprise, which provided us with fresh insights regarding value creation for social means; in addition and more importantly, as highlighted by Yunus et al. (2010), researching social business models helps make life better for others, a social business model can be easily learned and adapted without fear of competition, and a social business model can serve as a learning hub for multinational corporation managers to develop dynamic capabilities (Teece, 2007). Social business models can achieve social objectives via innovative designs that are impossible for traditional for-profit ventures to achieve.

When we differentiate between exogenous and endogenous opportunities, we find that different opportunity processes (discovery, creation and exploitation) coexist and are interconnected. Endogenous opportunities are constructed from within a community as a set of means to exploit a known exogenous opportunity. Endogenous opportunities reside or present in a well-structured form and are primarily strategized and controlled by the social enterprise. This new form facilitates the mass mobilization of participants in the creation, discovery, and exploitation of

opportunities. To obtain mass awareness of the opportunity repertoire, traditional marketing principles were applied to package opportunities in the opportunity repertoire as “products” and to present them to different stakeholders. Because an activity can concurrently produce social and economic value for the same or – more often – different stakeholders, a social enterprise must communicate its intentions clearly both internally and externally. Internally, these intentions guide decision makers whenever there is a tradeoff between social and economic goals. Externally, it avoids the perception that the activity of the business is largely intended to financially benefit a particular group of stakeholders.

## **5.4 Future Research**

### **5.4.1 *Business Model***

There are consensuses among academics and practitioners that the business model is fundamental and vital to the success of organizations. However, the majority of the extant studies are based on a static view of a business model. Whereas the static view is useful to describe the configuration of components, the dynamic view is useful to address change (Demil & Lecocq, 2010). Thus, all three studies focused on the mechanisms underpinning change in the business model. For business model researchers, we have illustrated how narrative and calculative logics influence the development of new business models, and we have identified the source of these logics. In addition, we have illustrated and identified how different stakeholders can be selected to balance economic and social value when designing a social business model.

Although we find substantial support for the different business model configurations and the mechanisms through which they were formulated, we are unable to determine how much control a firm can have in designing its business model and tactics. Such an analysis involves a deeper understanding of a firm's subjectivity in interpreting firm-internal and market-external factors under the conditions of bounded rationality, which can be particularly complex when the firm is a large enterprise whose diversity, adaptiveness, interconnectedness, and interdependency has not been fully explored. Perhaps sub-processes will be developed in the future to provide more insights into the dynamics of decision making.

Additionally, we classified decision-making mechanisms into effectuation and causation approaches based on the extent to which the mechanism utilizes the principles suggested in effectuation theory. The precision of the classification can be improved only when validated measures of causation or effectuation processes are developed further (Brettel et al., 2012; Chandler et al., 2011). Although our studies identify the key constructs informed by multiple research fields, changes in a business model and the associated strategic actions are best observed through longitudinal field research.

The motivation to study the mechanisms linking the business model with entrepreneurial processes is based on the premise that a firm can perform better if the firm has more choices to configure its business model. However, the link between choices available for business model and performance of firms is not fully explored in this thesis – a potential topic for quantitative researchers.

#### **5.4.2 Entrepreneurial Opportunities**

Our studies illustrated that entrepreneurial vision can begin with a conceptual business model and then use IS strategy to increase the feasibility of exploiting subsequent opportunities and to provide flexibility when formulating a desired business model. Although strategic decisions were made to select a scope and investment amount for IS resources, the strategic actions of opportunity discovery do not necessarily lead to opportunity exploitation; instead, opportunity exploitation may be designed to facilitate opportunity discovery in the future.

We introduce the terms *opportunity repertoire* and *opportunity menu* to explain the important linkages between opportunity creation and discovery in a relatively abstract manner. As an exploratory study of a complex topic, these concepts remain in their early stage, and we did not delve further into the sub processes, such as objectification or classification of opportunities, which potentially might contribute to the prescription perspective of opportunity creation.

Although we have examined the interaction between opportunity discovery and creation processes, we assume that there is no interaction between endogenous and exogenous opportunities. However, due to the success of several e-commerce villages recently, e-commerce platform operators such as Taobao are keen to create more opportunities for rural villages to adopt e-commerce. This development implies that the nature of the endogenous opportunity may be different after the endogenous opportunities have been created. The study of the impact and nature of different types of opportunity may add a new layer of understanding beyond traditional opportunity processes.

### **5.4.3 IS strategy**

We offer a fresh perspective on the role of IS strategy in opportunity processes and business model development. Our findings suggest that an IS organization can leverage IS-driven enterprise projects to exploit IS resources even without an articulated business model in mind. Although there may be corporate strategists in the enterprise, the IS organization can be more effective in formulating and implementing IS-driven business model change because it controls internal IS resources and the technical knowledge to select and attract external IS resources to the enterprise. Thus, the IS organization is in a unique position that can bring different business entities to compete in the market as a whole. We posit that IS strategic actions are generic strategies to facilitate business model development. It will be valuable if future empirical studies can be conducted to differentiate the IS strategic actions designed for opportunity and non-opportunity processes to examine the boundary conditions of the effectiveness of these strategies.

Considering a business model to be a boundary object constructed of narratives and calculations, Doganova & Eyquem-Renault (2009) found that business models are devices of 'collective exploration' that can become a common platform through which stakeholders from different domains can contribute new opportunities for value creation. The strategic role of IS in establishing this 'collective exploration' can be viewed from an entrepreneurial opportunity lens – setting a different research direction from the traditional alignment perspective of IS strategy.

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