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A Systems Perspective on Business Model Evolution: The Case of an Agricultural Information Service Provider in India

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This paper explores how the organizational capabilities of a firm enable business model evolution by examining the development of a new firm that provides mobile-phone-based information services for farmers in India. We argue that these organizational capabilities are part of the dynamic capabilities of the firm. We use a longitudinal and in-depth single case study to extend our understanding of the mechanism for business model evolution in new firms. The study shows three themes emerging from the data analysis of the case study by drawing on the literatures on systems thinking, dynamic capabilities and business model evolution. The three themes are balanced redundancy, requisite variety and cognitive discretion, which enable a firm to achieve congruence between the components of the business model in order to deliver the customer value proposition. We explain how these three micro-foundations of dynamic capabilities enable a firm to evolve its business model. We contribute to the business model and dynamic capabilities literature by proposing a systems perspective on business models and their evolution.

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Introduction

A business model summarizes the architecture and logic of a business, and defines the organization's value proposition and its approach to value creation and capture (Baden-Fuller and Morgan, 2010). Business models can facilitate the creation of new customer value propositions (Aversa, Furnari and Haefliger, 2015; Velu, 2016). It is well known that new firms often have to change their business models from their initial plan to develop a profitable and viable model that has a compelling customer value proposition (Lubik and Garnsey, 2015; Mullins and Komisar, 2009). Established firms such as Apple and Google have changed their business models radically from their initial ideas, enabling them to build successful businesses. However, the extant literature has not explored the organizational capabilities that enable new firms to evolve from one model to another in order to build a viable business model.

New business models enable the creation of new customer value or enhanced delivery of an existing customer value proposition (Fligstein, 1996; Humphreys, 2010; Geroski, 1998). The business model needs to be configured to enable the delivery of the customer value proposition. Business models often need to change and evolve in order to deliver a proposition that customers will be willing to buy – the process of business model evolution¹ (Demil and Lecocq, 2010). This process is especially important for new firms, as their very survival depends on the ability to evolve the business model from the initial plan, the so-called Plan A, to a subsequent viable one, Plan B (Mullins and Komisar, 2009).

The challenges of business model evolution are both cognitive and economic. They are cognitive because the business model is a cognitive conception (Doz and Kosonen, 2010; McGrath, 2010; Teece, 2010), meaning that management has to understand the cause–effect relationship of changing components of the business model. However, they are also economic because the business model is an activity system consisting of interdependent organizational activities centred on the focal firm, its constituent partners and customers in order to create and capture value (Achtenhagen, Melin and Naldi, 2013; Casadesus-Masanell and Ricart, 2010; Zott and Amit, 2010). Management decisions based on the cognitive conceptualization of the business model will have economic implications for the firm. Therefore, understanding the content of the activities, how they relate to one another and who has responsibility for them is a key aspect of managing the evolution of the

¹ The concept of business model evolution emphasizes the transformational approach to address change and innovation in the business model (Demil and Lecocq, 2010). In doing so, business model evolution examines the dynamic created in interactions between the components of the business model as it evolves from its existing form to a new one.

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business model. Such articulation of the content of activities, and their relationship with one another, has similarities with the concept of systems. A system is composed of inter-related parts or elements. Every system has at least two elements, which are inter-related (Kast and Rosenzweig, 1972).²

A business model can be seen as a system that acts as a mechanism to enable the core value proposition to be transferred as benefits to the customer (Seelos and Mair, 2007). In this sense, general systems theory has several analogies with business models, as the theory can be applied to show how organizations continuously interact with their environment to obtain energy and transform it into output (Bertalanffy, 1950; Katz and Kahn, 1978). We posit that systems thinking is an appropriate method to understand how the mechanisms for value creation and capture function and evolve, as they display similar characteristics to business models.³ In particular, systems thinking tends to highlight the difference between the components with reference to the whole and its constituent parts, the relationship between components and the possible viewpoints of the agents who are part of the system (Cabrera, Cabrera and Powers, 2015; Midgley, 2003). Therefore, entrepreneurs and managers could benefit from taking a systems perspective of business models when they shape and design both the organizational activities and the links that connect them. The challenge for management is to ensure *dynamic consistency* by maintaining congruence between the components of an existing business model as they evolve (Demil and Lecocq, 2010). Such a process of business model evolution requires the firm to possess dynamic capabilities which is a form of organizational capabilities in order to adapt an organization's resource base.⁴ However, the articulation of the micro-foundations of such dynamic capabilities is at a nascent stage.

Dynamic capabilities are higher-level capabilities that enable firms to strategize and orchestrate the firm's resources to create superior performance (Teece, 2007; 2014). Dynamic capabilities consist of three clusters of processes, namely *sensing* opportunities, *seizing* the opportunities by mobilizing resources and *transforming* by continuously renewing the organization and its associated business model. Firms that operate in markets with changing environmental conditions such as new technologies face the challenge of developing an appropriate business model to connect the technology with the needs of the market (O'Reilly and Tushman, 2013; Velu and Stiles, 2013). Such intertemporal management of the evolution of the business model, to configure an appropriate means to create and capture value, requires firms to possess dynamic capabilities (Teece, 2007; 2014). However, the nature of the constituent elements of dynamic capabilities that enable business model evolution is not well understood. In this study, we explore the following question: 'What are the organizational capabilities in new firms that enable business model evolution?'

We present a longitudinal and in-depth single case study (based on interviews with senior management) of I-AGRI, a unique, mobile-phone-based information service for farmers in India. I-AGRI was formed by the ALPHA Corporation, a major global blue-chip company (the names of the firms have been changed). In particular, the case study examines how I-AGRI evolved its initial business model from a mobile-phone-based information service for farmers to a transactions platform for agricultural crops between buyers and sellers, and subsequently incorporating an engagement-based solutions provider business model for banks and other agricultural-related businesses. The study shows three themes emerging from the data analysis of the case study by drawing on the literatures on systems thinking, dynamic capabilities and business model evolution. These themes highlight the organizational capabilities that enable business model evolution. The three themes are balanced redundancy, requisite variety and cognitive discretion. Balanced redundancy refers to the ability of the firm to stretch and create additional overlapping resources in order to perform experiments while running the existing business model.⁵ Requisite variety refers to the extent to which components of the system obtain a variety of information to understand the environment better. Cognitive discretion refers to the freedom to perceive and construct an idiosyncratic meaning. We explain how these three constituents of dynamic capabilities have enabled I-AGRI to evolve its business model in order to explore and develop an appropriate customer value proposition to create and capture value.

The study makes two contributions to the literature. First, we shed light on the business model as a system and how its evolution might unfold. Our analysis points to the systems thinking lens as a theoretical frame in order to articulate how business model evolution takes place. The study contributes to the literature on business models, in particular how a firm needs to develop capabilities to enable a business model to evolve in order to achieve dynamic consistency. Second, we contribute to the organizational capability literature to show what type of firm-level capabilities might be required for firms to enable business model evolution. In particular, we explicate the micro-foundations of dynamic capabilities that enables business model evolution.

The next section reviews the relevant literature, while Method and empirical context section describes the data and method adopted for the case study; the Findings section uses the empirical evidence to extend the business model evolution literature by linking it to systems theory. Finally, the Discussion section discusses the theoretical and managerial implications, and the Conclusion section concludes.

² A complex system comprises a large number of parts that interact in a non-simple way (Simon, 1962).

³ Systems theories traverse a diverse set of fields, from the physical and life sciences to the social sciences. We use the term 'systems thinking' to encapsulate the universal principles of these theories.

⁴ The literature distinguishes between two types of capabilities, namely ordinary and dynamic capabilities. Ordinary capabilities enable the production and sale of a defined set of products and services and focusses on the efficiency of a set of activities. In contrast, dynamic capabilities encompasses the entrepreneurial activities, processes and leadership skills to recognize the need to change the business model and hence, how the necessary resources are accessed and orchestrated in order to pursue the new value creation and capture opportunities (Leih, Linden and Teece, 2015).

⁵ Although our paper examines the case of a single business model of a firm, we acknowledge that a new firm could have multiple business models.

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