

A Conceptual Model for Business Ecosystem and Implications for Future Research

Milad Fathi Baghbadorani¹⁺ and Amirpouyan Harandi²

¹ Paris Graduate School of Management

² Multimedia University

Abstract. Business ecosystem is a new and important stream of theory in the field of strategic management. It uses metaphors and concepts from ecology and develops a new way of looking at relations between firms, in which they are seen as interconnected and interdependent members of 'ecosystems' that co-evolve and share a common fate. Business ecosystem also emphasizes on platforms and user interaction. This paper aims to uncover the dynamics of business ecosystems and proposes a conceptual model that can lead to better understanding of the concept, as well as paving the way for future study of its various components.

Keywords: Business Ecosystem, Multi Sided Market, Platform, Conceptual Model, Multi Layered

1. Introduction

Business ecosystem is regarded as an stream of theory in strategic management (Lengnick-Hall & Wolff, 1999). In particular, business ecosystem is believed to be capable of better explaining how multi-sided businesses (Eisenmann, Parker, & Van Alstyne, 2006; Parker & Van Alstyne, 2005) evolve. Despite its importance, business ecosystem is neither understood nor managed well enough (Iansiti & Levien, 2004b). Even though scholars and businesses have started to give considerable attention to the concept (Adner, 2006) within ICT industry in particular (Eisenhardt & Brown, 1999), the literature of business ecosystem is still at its infancy (Anggraeni, Hartigh, & Zegveld, 2007).

This paper is envisaged to introduce a conceptual model that can depict and explain the dynamics of a business ecosystem and to be used as a basis for analysis of different components that form a such networks. Various scholars have acknowledged that organizations forming a business ecosystem come from many diverse domains and industries and even include competitors, media, universities and regulatory agencies (Iansiti & Levien, 2004b; Moore, 1993, 1996). This extreme diversity of organizations and individuals has the potential to lead to ambiguity in analyzing business ecosystems and formation and roles of organizations within them. As a result, a model that explains business ecosystem or any of its subcategories should be able to clarify the position of organizations and individuals in a distinguishable manner and categorize them based on their level and nature of contribution. Thus, the multi-layered approach of the proposed conceptual model becomes of value, as it groups ecosystem members according to their level of contribution to the ecosystem as a whole and clears the aforementioned ambiguities.

2. Research Background

2.1. Business Ecosystem

In contrast to the conventional value chain view, business ecosystem offers a dynamic, system view that not only includes the value chain of a business, but also those with rather indirect roles, such as companies from other industries producing complementary products or equipment, outsourcing companies, regulatory agencies, financial institutes, research institutes, media, universities and even competitors (Anggraeni et al., 2007; Iansiti & Levien, 2004b; Li, 2009; Moore, 1993, 1996; Yu, Li, & Zhao, 2011).

Following the same view, today, it is not only businesses that compete, but competition is formed and defined between business ecosystems (Hearn & Pace, 2006). More interestingly, the level of exclusivity of businesses active in each ecosystem is found to be generally low, in that, even rival ecosystems within a

⁺ Email: milad.fathi.b@gmail.com

market share a considerable number of common ecosystem members. Hence, it is unclear as to where the borders of an ecosystem can be defined (Gaël Gueguen & Isckia, 2011).

There are many advantages and benefits to being a part of a healthy business ecosystem. Considering the fact that the fierce competition today has left many businesses operating in survival mode and with many markets seeing supply overtake the demand (Chan Kim & Mauborgne, 2005), business ecosystem opens doors to new opportunities for creating value (Li, 2009) and ultimately, gaining the competitive edge.

Regardless of their position, in a business ecosystem, members normally invest on platforms usually created by ecosystem leader(s), leading to evolution and expansion of the ecosystem as a whole and improvement in the performance of ecosystem members (Chesbrough & Schwartz, 2007; Iansiti & Levien, 2004b; Moore, 1993).

Ecosystem members must constantly monitor the health of their business ecosystem. In particular, business ecosystem leader(s) play a critical role in regulating ecosystem health. Iansiti and Levien (2004a) offer three criteria for assessing the health of a business ecosystems, namely, robustness, productivity and Innovation.

Later, M. Iansiti and G. L. Richards (2006) used different indicators to assess the health of business ecosystems. Here, output per hour of employees, also referred to as labour productivity, was used to measure the level of ecosystem productivity. Furthermore, persistence towards major downturns and ability to recover, in addition to financial betas were two criterion used to measure robustness. As for innovation, Return on Venture Capital Investment was chosen for assessment.

3. Business Ecosystem Conceptual Model

Based on various components discussed in this paper, the following conceptual model has been depicted:

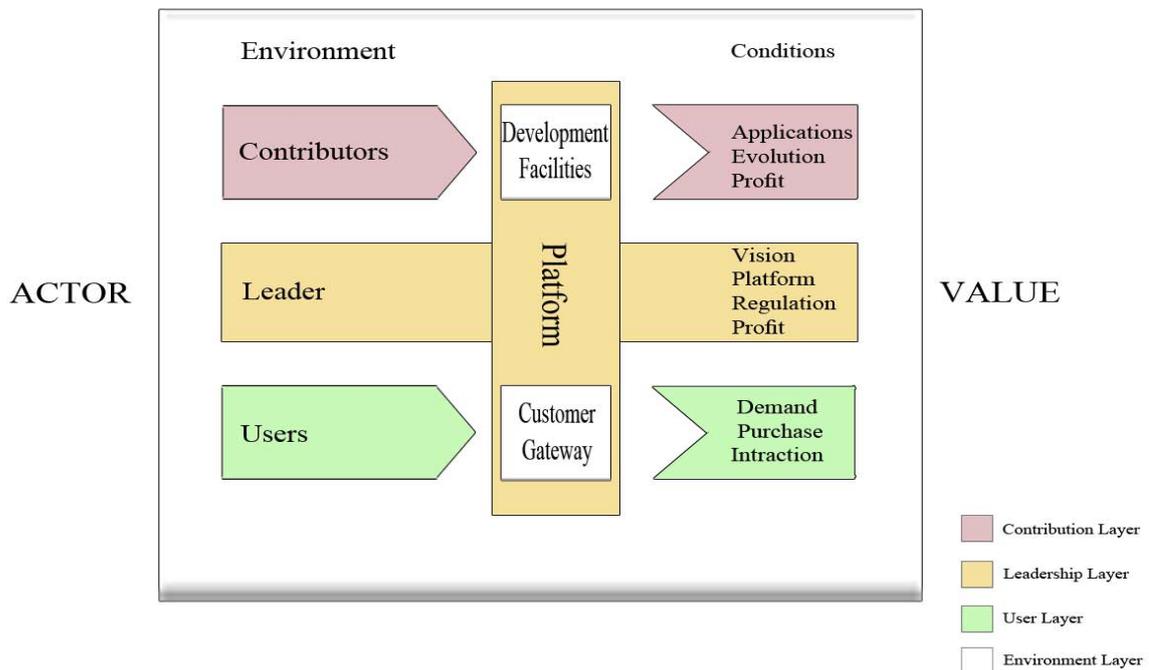


Fig. 1: The business ecosystem conceptual model

The Business Ecosystem Conceptual Model is consisted of four different layers, namely, Leadership, Contribution, Users and Environment. Each layer in turn has two different sides. On the left the Actor is located, and the right side pane shows the Value that each Actor offers within the business ecosystem.

4. Components of The Business Ecosystem Conceptual Model

The Business Ecosystem Conceptual Model presented in this paper has 4 layers, namely, Leader(s), Contributors, Users and Environment. On the left, Actors, representing organizations or individuals that each

play a role within the ecosystem are placed, and on the right, the value that each Actor/ group of Actors contribute to the ecosystem is located. The Environment is the final layer and surrounds Leader(s), Users and Contributors all together.

Below, each layer, its members and the values offered by each member is explained further.

4.1. Leaders

At the center of the conceptual model stands the ecosystem leader(s). The leader, also referred to as "central contributor" (Moore, 1993), acts as a hub (Iansiti & Levien, 2004b), a chokehold without which other ecosystem members cannot continue their business life (Moore, 1993).

The decisive position of ecosystem leader and the assets that it possesses enables it to collect a higher share of the value that the ecosystem creates (Moore, 1993). Ecosystem leader sets the vision for the other members of an ecosystem to follow (Moore, 2006) and while taking a regulatory position, encourages other members to follow its philosophy and standards (Gael Gueguen, 2009; Torrès-Blay, 2010)

Perhaps one of the most critical roles of the leaders is providing the ecosystem platform as a critical building block of a business ecosystem (Iansiti & Levien, 2002, 2004a, 2004b; M. Iansiti & G. Richards, 2006; M. Iansiti & G. L. Richards, 2006; Moore, 1993, 1996). Members of a business ecosystem often invest on a shared platform (Bosch J., 2009). In other words, the main value that the business ecosystem leader brings to an ecosystem is the platform upon which the ecosystem is based, as it provides different parties involved, with tools and frameworks that assists them in driving innovation and improvement of their performance.

In the context of IT ecosystems, a platform is defined as "a set of tools or components that provide building blocks for application providers" (Eisenmann et al., 2006). An application in turn, is a product that offers a solution to an end user (M. Iansiti & G. Richards, 2006).

Bosch J. (2009) mainly explored Software Ecosystems and found the following as critical success factors of a group of platforms:

- Easy development of solutions with minimum efforts
- Constant development of the platform features to attract contributors and users while maintaining the existing ones.
- The number of users of a platform that contributors can count on as buyers of their applications.

4.2. Contributors

Stepping outside the core of the business ecosystem (where the ecosystem leader is placed), the contributors to the business ecosystem exist. Numerous interdependent organizations and individuals contribute to the evolution of a business ecosystem, each carrying out tasks related to various areas from design, to production, operations, distribution and delivery of products, solutions and services while all depending on each other to survive and to improve their performance (M. Iansiti & G. Richards, 2006). These organizations actively work on platforms that the ecosystem leader provides to improve their performance, while extending the capabilities of the platform itself at the same time (Iansiti & Levien, 2004b; Moore, 1993). The range of activities and the level of diversity of ecosystem members at this layer of the model is normally high.

4.3. Users

Users are a vital component of business ecosystems. They, either individuals or businesses, are the ones who purchase the products and services that business ecosystems are formed to produce. Hence, without users, formation of an ecosystem could be meaningless (Zhu & Iansiti, 2007).

As was mentioned in earlier, IT ecosystems are often formed around platforms. Platforms on the other hand are two sided businesses that need both contributors (developers) and users in order to survive and succeed (Eisenmann et al., 2006; Evans, Hagi, & Schmalensee, 2006; Parker & Van Alstyne, 2005; Zhu & Iansiti, 2007). As a result, customers are obviously of great importance for the success of an IT ecosystem.

More customers results in more applications for the respective platform due to higher demand (Zhu & Iansiti, 2007). Customer expectation is also found to be an important factor for the health and success of platforms, as customers often make assumptions about popularity of platforms and tend to choose the one

with the highest number of consumers, which is consequently perceived to give them access to more applications (Katz & Shapiro, 1994; Zhu & Iansiti, 2007). Hwang and Thorn (1999) meta analyzed 25 different studies on effect of user participation and user involvement on six system success variables and found them both to have positive effects to varying degrees.

4.4. Environment

The environment surrounding Leaders, Contributors and Users forms the conditions in which the business ecosystem evolves.

Many scholars have studied the impact of environment on businesses and strategies that they adopt according to the environment around them. Lawrence and Lorsch (1986) find that an uncertain environment asks for greater differentiation and consequently, more complex business processes. Also, the market and its level of competition can lead to more dynamism in organization structures (Rumelt, 1974). Thus, there is a strong link between organizations, strategies they adopt and the environment outside (Miller & Friesen, 1983). As a result, environment scanning becomes of utmost importance (Kourteli, 2000).

In the context of business ecosystem, Yu et al. (2011) categorizes entities forming the environment around a business ecosystem to at least 6 groups, namely, Economic Environment, Technique Environment, Natural Environment, Social and cultural Environment, Law and Policy Environment, Credit Environment.

5. Conclusion

In this paper a conceptual model for business ecosystem was introduced. The model aims to clarify the structure of a typical business ecosystem, differentiate between various members of the network of companies and explain the interdependencies among them. The model clearly positions organizations into 4 layers, namely Leadership, Contribution, Users and Environment over two panes, Actor and Value.

We believe that the model will be of value to the body of knowledge as it can makes the concept of business ecosystem easier to understand. Furthermore, managers of business ecosystems as well as those active as a member of such ecosystems can identify the role and position of their own organization as well as others.

6. Future Research

The conceptual model presented in this paper paves the way for studying of each of the component of business ecosystem and ultimately, introduction of a comprehensive theoretical framework that can extend the applicability of business ecosystems. Furthermore, we are particularly interested in studying the dynamics of inter-ecosystem competition and its differences with competition at firm level. Finally, the process of user-driven innovation in the context of business ecosystems is an area we would like to explore in the new future.

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