

leveraging Digital Platform Ecosystem Evolution:Examining Micro-Strategies in JD XTL Case

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Abstract. Digital platform ecosystem (DPE) have revolutionized digital economic era by enabling new forms of collaboration, needs to develop to ensure long-term sustainability. However, little attention has been paid to a comprehensive understanding of how core firm leveraging and managing digital platform ecosystem evolution. To address this knowledge gap, we conducted a case study of JD XTL, one of the china's largest online e-commerce ordering portal to examine DPE evolution process .Our findings show that, JD has leveraged digital platform ecosystem evolution that links closely with micro-strategies actions: (1) Key platform strategies, (2) digital capabilities, (3) ecosystem structure. Our process model capture management strategies which practitioners can choose from when addressing various challenges.

1. Introduction

Digital platform ecosystems (DPE), which function as complex socio-technical systems that facilitate interactions between various actors through developing digital architecture and governance [1]. Some of today's most successful companies such as Airbnb, Google and Facebook are at the centre of digital platform ecosystems. For example, Facebook, which started as one-sided platform (enabling the interactions between private users), has formed a robust ecosystem of actors around its platform (users, advertisers and third-party developers).

Despite their significant economic importance across various industries, successful digital platform ecosystems remain difficult to build and sustain over time [2, 3]. Internal and External triggers such as Competitor behaviour, regulatory uncertainty and technology change may prompt digital platform ecosystem to evolve. Therefore, operating in environment characterized by uncertainty and unpredictability, digital platform ecosystems need to evolve constantly in order to ensure their long-term survival [1, 4, 5]. The evolution of DPE is seldom a self-driving and self-sustained process; instead, it requires deliberate and timely management to deal with unexpected obstacles and opportunities [6, 7].

However, the majority of studies adopts the evolution of digital platform ecosystem from macro perspective, few investigate how enterprises manage and leverage the evolutionary process. There is lack of in-depth studies, which analyse how platform owner changes strategy to drive the evolution of digital platform ecosystem over time. Early relevant literature mainly focus on pricing structure [8], ignoring other factors such as lifecycle model and logic strategy [9]. Furthermore, to ensure the survival of the ecosystem, platform owners also need to develop digital functionalities to attaining IT-enabled enterprise agility. While researchers have started to investigate the evolution of digital platform ecosystems [5, 10], there is a lack of research analysing how platform owners can leverage the evolution of their ecosystems. Specifically, we formulate the following questions:

How do core firm leveraging the digital platform ecosystem evolution from micro strategies perspective?

Using a case study of JD's XTL, one of the china's largest online e-commerce B2B2C ordering portal in Retail industry, this study aims at offering a process ecosystem model, which captures the JD digital platform ecosystem evolution. Our argument proceeds as follows. First, we summarize

existing literature on business ecosystem, platform strategies in evolving ecosystem and Digital capabilities. Secondly, we present the theoretical framework building on the strategy-structure interplay to guide our analysis. Subsequently, we introduce single longitudinal case study and present the findings which constructing a process model of DPBE evolution.

2. Literature review

2.1. Business ecosystem

Business ecosystem literature that deals with relationships between a focal firm and its environment from a co-evolutionary perspective [11], emerged as a response to the growing need for a new paradigm for strategizing, competing in the networked economy [12] and has its intellectual roots in theories organizational ecology. The term “business ecosystem” was first introduced in the mid-1990s and subsequently has become pervasive in strategic management. This theory renews traditional competitive advantage and resource-based view, provides professional view on co-evolution and co-creation [14, 15]. The development and subsequent leveraged of a business ecosystem by a core firm can bring a number of important benefits for the focal organization. The process of ecosystem development is determined by two primary factors: The organizational strategies of the core firm and the role it plays within the ecosystem [11-13].

2.1.1. Core firm strategies

Classical strategic theory emerged from the background of the big industrial era, cultivating the core competence of enterprises through resource acquisition to gain competitive advantage. This paper intends to draw on the strategic management ideas of Lengenick-Hall and Wolff (1999), combined with mainstream basic theory to classify strategic logic to guide the strategic direction of enterprises at different stages (see Table1) [16].

Table 1: Three Core Logics of Contemporary Strategic Management

	Capability logic	Guerrilla logic	Complexity logic
Representative Research Streams	The Resource-Based View (Barney, 1991); Core competition (Prahalad and Hamel, 1990)	Hyper competition (D’Aveni 1994); Dynamic Capabilities (Teece et al. 1997)	Chaos Theory (Stacey 1995) Business Ecosystems (Iansiti and Levien 2004)
Core Principles	Postulates that superior performance is the result of leveraging firm specific strategic resources and capabilities	Posits that superior performance is the result of rapid and relentless innovation that disrupts existing business paradigms to keep competitors off-balance	Superior performance is a result of maintaining the health of the business ecosystem, which leads to productivity, synergies from diversity and durability of the benefits derived.
Key Prescriptions	Identify and exploit firm specific strategic resources that are valuable, rare, inimitable Leverage complementary resources that enhance the value creating potential of strategic resources	Develop dynamic capabilities that allow an organization to rapidly recombine existing assets and competencies to form Value propositions. Adopt aggressive measures to cause fundamental instability and create a unique and unconventional basis for competing	Understand and manipulate the underlying forces and attractors that create order in the business ecosystem Develop ecosystem capabilities (as opposed to self-serving, internal organizational capabilities) through direct intervention or providing the means for capability development across the network

2.1.2. Ecosystem role

Ecosystem actors are one of the key elements in a business ecosystem in order to realize the value proposition [15]. The most significant actor of ecosystem is labelled the keystone, which is a vital species in the case of business ecosystems. The keystone also referred to as focal firm [13] or platform owner [9] or ecosystem leader, plays the role of regulating the overall function of the ecosystem.

Iansiti (2004) explores the roles and strategies of core companies in the ecosystem. By taking on the role of the cornerstone, the core firm influences the development of the ecosystem with three different mechanisms [12]. First, keystone companies can connect different node networks to increase ecosystem productivity. Second, the keystone enterprises can promote the robustness of the

ecosystem by introducing innovation flows. Third, keystone companies can leverage their centrality in the network to encourage diversity within ecosystems and extract value from ecosystems.

2.2. Platform strategies in evolving ecosystem

A new trend in strategic development is the construction of a business ecosystem based on platforms [17]. Rothe et al. (2018) defined platform ecosystems as organizations that (a) offer a scalable and modular technological architecture, (b) create value by managing and governing independent ecosystem partners, and (c) the existence of network effects between these ecosystem partners and the platform's customers [18]. As a complex social-technical ecosystem, the platform-based ecosystem also has the unexpectedly evolutionary trajectory which remains elusive topic in early literature [19]. Although researchers have recognized the architecture of platform is evolvable and the number of ecosystem actors also grows over time and have co-evolution activities [2, 7], there is a lack of systematic approach towards evolutionary ecosystem processes, which mainly focuses on life cycle and growth perspective [1].

2.2.1. Platform leader strategies

Platform enterprises have established a new order for today's economy and society, which has revolutionized impact. It not only affects online electronic information technology, but also brings shocking impact to various traditional enterprises under the line. Scholars refer to platform companies as 'Platform Leadership', highlighting the role of platform enterprises around the role of ecological community innovation. As the platform strategy of the leader in the ecosystem, it plays an important role in the construction, operation and evolution of the platform ecosystem. Platform leader that is, a core company which wishes to own, operate and evolve a multi-sided platform ecosystem. Bailetti (2010) considers this role needs to know: i) main functions of the platform; ii) key design dimensions; and iii) benefits and Risks of platform ownership [20].

Chen, et al. (2013) believe that the core issue of the Internet platform strategy is how to apply the network effect and determine the appropriate pricing strategy, and its profit point is to create a platform that can interact with stakeholders and create value together[17]. Parker et al. (2016) believe that platform competition strategies include multi-homing by restricting platform access; promoting and nurturing platform innovation, leveraging the value of data; fostering partnerships, platform envelopment strategies and enhancing platform design [21]. Evans (2009) investigates the strategies, which platform owners can use to obtain a critical mass of users. Similarly, Gawer and Cusumano (2014) discuss strategies for designing platforms upon market entry (coring strategy) and for winning market dominance (tipping strategy) [9].

2.2.2 Life-cycle perspective

The evolution of the business ecosystem is a process of gradual maturity and renewal. Life cycle theory presents evolutionary processes in several stages, tracking the phenomena from birth, growth to maturity and decline .As some platform ecosystems have managed to sustain for more than a decade, researchers began to outline the evolutionary paths of platform ecosystems mainly through developing lifecycle models. While these studies provide detailed accounts of the evolutionary journeys of successful platform ecosystems, they remain largely descriptive.

Moore (1993) first argues that the business ecosystem has experienced several stages of birth, expansion, leadership, self-renewal or death (BELC) [13]. Lihua et al. (2010), for example, propose an evolutionary life-cycle model for ecosystem development consisting of four stages: birth, expansion, coordination/maturity stage and evolution or death. In a similar fashion, Muezzellec et al. (2015) propose a life-cycle evolutionary model, consisting of four stages. In contrast to Lihua et al. (2010), however, they organize their research around the business model of the platform-based ecosystem [1]. During the birth stage, the platform owner emphasize on growing numbers of users and innovative features. Once sufficient numbers of users join, the platform owner concentrates on

catering to platform ecosystem actors, such as supplier, distributors and customer, who usually generate revenue. During the next expansion phase, various external actors prompt Platform owners to establish and maintain a set of coordination mechanisms to ensure the vitality of its Ecosystem. At the maturity stage, the evolutionary phase is associated with the capabilities of the platform. Platform owners need to develop new technologies to adapt existing ecosystem functions and actors.

The evolution of the platform ecosystem growth stage is reflected in different strategic outcomes. During early stage, attaining critical mass is prerequisite for platform ecosystem survival [2]. In the second growth phase, the owner adopted exploration strategy in order to achieved network effects to spur further growth. At later stages of their development, digital platform ecosystems aim at becoming market leaders in order to survive in an intensified competitive environment.

2.3. Digital Capability (IT-enabled)

Digital capabilities refer to an organization’s “ability to mobilize and deploy information technology based resources in combination with other resources and capabilities” to enhance its overall efficiency, effectiveness, and flexibility in accordance to business needs. We need to understand the various types of IT capabilities that could potentially influence digital platform ecosystem development. Following a review of the various typologies of IT capabilities in the existing literature, we eventually adopted Wade and Hulland’s (2004) Typology to guide our inquiry (refer to Table 2).

Based on the typology of organizational capabilities develops, Wade and Hulland (2004) further organize the eight IS capabilities into three broad categories: 1) outside-in IT capabilities, which refer to externally focused IS capabilities related to anticipating market needs; 2) inside-out IT capabilities, which refer to internally oriented IS capabilities deployed in a firm in response to market demands and opportunities; and 3) spanning IT capabilities, which refer to the IS capabilities required to integrate the two previous categories of IS capabilities that derive from both internal and external analyses [22].

Table 2: Wade and Hulland’s (2004) Typology of IS Capabilities

Capability	Definition
Outside-in IT capabilities	
External relationship management	Firm's ability to manage the relationships between its IT function and external stakeholders.
Market responsiveness	Firm's ability to sense and respond to changes in the external environment (Overby et al., 2006).
Inside-out IT capabilities	
IT infrastructure	Physical IT assets including hardware, software, and networking technologies (Bharadwaj, 2000).
IT technical skills	Relevant and updated technology skills related to hardware and software held by a firm's IT employees.
IT development	Capabilities to develop or experiment with new technologies.
Cost-effective IT operations	Firm's ability to provide cost-effective and efficient IT operations on an ongoing basis.

3. Analytical Framework

This paper investigates how platform owner manage the dynamic process of digital platform ecosystem evolution. To this end, this study builds upon the strategy-structure interplay as presented in the field of organization studies. Consequently, this research relies on Strategy-as-Practice perspective [23] and on micro approach to organizational structuring as analytical lenses, and combines them in a preliminary research process model (see Figure 1).

To survive turbulent times, an organization needs to ensure a fit between its strategy and structure, which guarantees its successful evolution over time. Drawing on the theoretical

framework of Whittington's "Strategy-Practice-as-Practice" process, combined with Staykova (2018) strategy-structure interlay interaction, we constructed an enterprise empirical analysis model for managing the digital platform ecosystem [1]. This model presents the evolution of the enterprise platform strategy and ecosystem structure during the evolution of DPE. The platform strategy at different stages comes from the strategic practice of core firm. At the same time, the implementation of the strategy requires the corresponding organizational structure as a support.

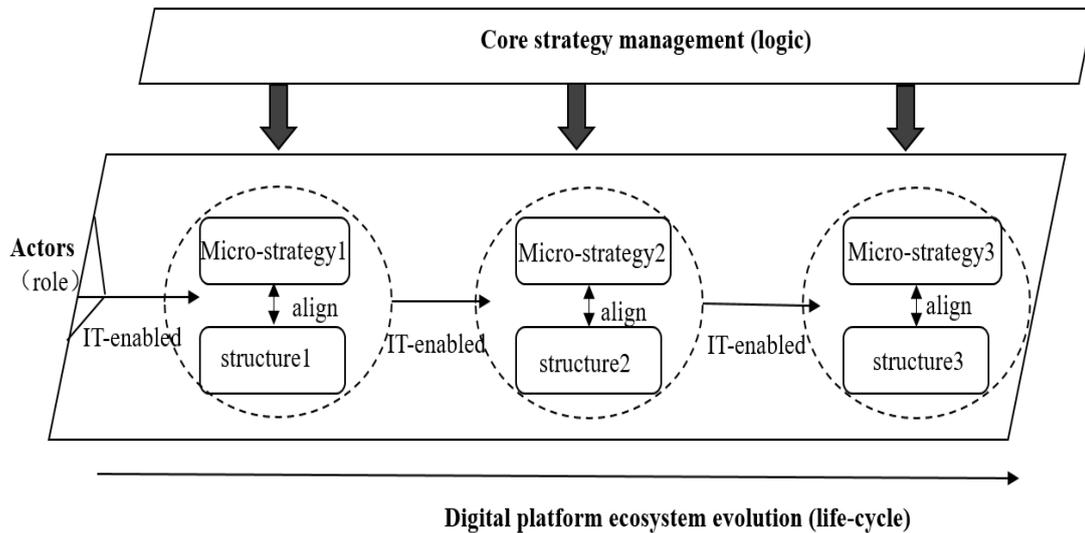


Figure1: Model for managing digital platform ecosystem evolution

4. Research Design

As this study seeks to provide a process model tracing the emergence of micro-strategies and structures as part of the evolution of a digital platform ecosystem, qualitative longitudinal study constitutes a suitable research method. In particular, this research relies on a single longitudinal case study in order to provide in-depth account of the studied phenomenon.

4.1. Research methodology

The case research methodology is particularly appropriate for this study for a number of reasons. First, our research questions are "why" and "how" questions that delve into the process of developing and leveraging DPE [24]. Second, a case study is phenomenon-driven rather than theory driven [25] and it describes processes in an accessible format.

JD XTL is a B2B2C e-commerce ordering portal in china which particularly appropriate for our purpose for several reasons. First, as the largest internet company by revenue in China, JD is among successful enterprise who benefit from its business ecosystem, with obvious industry leading and representativeness. Moreover, XTL is the strategic layout of JD Retail business ecosystem. Although it has been short-lived since its establishment in 2015, it has experienced different stages, which can provide inspiration for the evolution of business ecosystem.

4.2. Data collection and analysis

To ensure reliability and validity, data were triangulated from multiple sources [26]: 1) information on the company collected from the company's website, microblog and WeChat; 2) interviews with participants conducted in-person and through email, including middle and top management of JD group and its subsidiaries; 3) 60-min speeches made by enterprise managers at strategic conferences each year; 4) published magazines from JD group and published literature, media materials and related books.

Based on our review of the literature on business ecosystems, we identified an initial set of themes that were pertinent ecosystem development. The data obtained from each interview was then

organized and coded according to the set of themes. Each new finding was ensure that it was supported by at least two sources of data, and our theoretical lens was modified incrementally whenever new findings that challenged the existing schema emerged [24].

4.3. Case Description

4.3.1. Organization background

Established in 2015, JD XTL develops a new retail revolutionary background in the digital wave and industrial boundary integration. As the “locomotive No.1” project of JD Group, XTL aims to reconstruct the recognition of traditional retail “people, goods and fields” and create a “borderless retail ecological landscape”. Since its establishment four years ago, the XTL has organically connected the entire chain of brands, distributor, retailers and consumers, and implemented an “open integration” ecological strategy. We organized our case findings by reference to three interrelated stages, which highlights how JD XTL developed and transformed itself from a B2B2C platform business into a leading digital platform ecosystem.

4.3.2. JD XTL ecosystem management

We organized our case findings by reference to three interrelated stages, which highlights how JD XTL through underling logic of strategic events and developed its capabilities from a B2B platform into a leading Platform-based ecosystem. From the emergent data, it became readily apparent that XTL underwent three distinct phases; adopting different strategies and ecosystem roles in each phase that resulted in different forms of ecosystem development, with correspondingly distinct IT capabilities (refer to Table 3). Accordingly, we organize the presentation of our data according to the temporal sequence of the phases in the subsections that follow.

Table 3. Summary of Stages through which the JD XTL ecosystem

Phase1: creating value proposition Attaining critical mass	Phase2: expanding platform networks fortifying ecological boundaries	Phase3: Develop symbiotic and win-win ecosystem
Underling logic of organization strategies		
Capability logic Leverage firm resources and capabilities to create value proposition	Guerrilla logic Development innovation and new capabilities to explore platform function	Complexity logic Develop ecosystem capabilities to foster symbiotic relationships between entities
Ecosystem actors		
Platform provider	multi-service platform coordinator	Modular solution solver
Key platform strategies		
facilitates direct interaction between brands and shopkeeper(Coring strategy) Attaining critical mass(Tipping strategy)	exploration strategy Openness and Integration strategy	Meshing strategy Empowering strategy envelope strategy:Innovation and competitive strategy envelop the rival market
Digital capabilities(IT-enabled)		
Inside-out IT capabilities: Software and hardware facilities; Android and iOS major application(APP)	outside-in IT capabilities: IT development such as intelligence store,colud,	Spanning IT capabilities: IT-strategy alignment(Upgrade AI algorithm) IT planning

	big data; Outside-in IT capabilities: External relationship management	
consequence of ecosystem development		
hub-spoke ecosystem: distribution platform(B2B)	platform-network ecosystem (multi-sided platform): franchise and promotion platform	platform-based ecosystem: Joint warehouse platform Modular ecosystem solution
Ability to predict and anticipate customer needs Development of a self-sustaining DPE with core platform	Formation of networks within the ecosystem as a result of interaction between platform users	Enhancing the capabilities of the ecosystem utilizing communal resources and working towards the shared objective of the ecosystem

Creating value proposition and attaining critical mass (2015-2016)

In the first phase from 2015 to 2016, JD XTL's business objectives were cantered on establishing itself as the ordering platform for B2B retail sector in China. Competitive imitation was rampant in the rapidly developing Chinese e-commerce retail industry, so JD group had to act quickly to prompt potential business ecosystem model. In April 2016, distribution platform (shopkeeper helper) became JD XTL's first mobile ordering platform, which facilitates direct interaction between brands and shopkeeper without the need of traditional distribution level agents. In the 2016 XTL team interview, the ecosystem value proposition was stated as two aspects:

“For brand owners, it enhances channel efficiency, increases data transparency, and strengthens channel control; for couple shop owners, ‘one-stop shop’ offers authentic licensed products without the hassle of contacting multiple brands.”

By providing a unique value proposition and lowering the barriers of participation, JD XTL was able to attract a myriad of users to attain critical mass. During this stage, JD took on the role of a platform provider with ecosystem, helping to promote the value of their actors. The distribution platform connects the supply-side (brands) and demand-side (shopkeepers) to create network effects. Meanwhile, designing platforms upon market entry (coring strategy) and for winning market dominance against other platform ecosystem (tipping strategy). At the same time, JD lay out the digital infrastructure including IT infrastructure, IT technical skills, first based on traditional PC website; the other is to log in to Android and iOS major application markets to provide mobile client (APP); the third is to use WeChat “JD XTL public Mall”.

Expanding platform networks and fortifying ecological boundaries (2016-2017)

Having established a dominance over the Chinese B2B e-commerce market, JD began to realize that the biggest threat to its business came not from the existing B2B e-commerce portals, but rather from massive Internet portals such as Alibaba LST. Consequently, XTL began to move in a new strategic direction. The new strategic direction was characterized by expanding platform networks of new organizational capabilities in preparation for fortifying ecological boundaries in the near future.

On the basis of the operation in distribution platform (shopkeeper helper), JDXTL opened from B2B platform to the B2B2C platform and bringing consumers into the ecosystem. The major strategic changes are mainly reflected in the following two aspects: First, XTL opened the “Convenience Shop Plan” (franchise platform) to provide support in exporting brands, visual identity and management systems in April 2017. The director of a fast-selling brand explained:

“Until JD announced its convenience store program, we really regarded it as a true offline channel. We believe that JD will not make fun of its brand, so confirm that it takes the offline business seriously.”

Another major strategic move is that JD launched a promotion platform in the same year to expand the interaction between brand, shopkeeper and consumers from distribution to sales, in order to promote the efficiency of resource allocation. The “promotion platform” allows brand owners to directly choose the promotional launch tasks and provide corresponding policy resources, which alleviates the inefficiency and opacity of traditional channels.

Developing symbiotic and win-win ecosystem (2018-2019)

To fully improve the efficiency of retail channel, JD shift its focus from platform construction to the values of ecosystem actors. XTL helps ecosystem actors (such as distributors) to access the market while leveraging resource advantages (e.g. existing warehousing and logistics resources) to create new value. At the end of 2017, JD announced “integration and openness” strategy, introduced “a joint warehouse allocation system” which, using existing digital infrastructure and capabilities to foster an intellectual ecosystem.

In order to achieve the “unbounded and win-win retail goal”, XTL proposed an “open and smart” upgrading strategy at the March 2019. Through data access and technology sharing, brands are encouraged to participate in category management, pricing marketing management, and user operations; second, introduced the online intelligent distribution platform -JD distribution platform. Through the online system to achieve the control of the supply chain, control prices, strengthen the brand’s distribution channel control.

Moreover, driven by the new ecosystem-oriented mentality and complexity logic strategic management, XTL’s role within the ecosystem evolved into a Modular solution solver. Meanwhile, utilizing communal resources and working towards the shared objective of the ecosystem .with the advantages of innovation, competitive strategy and user base, XTL began to compete with Alibaba and tried to envelope the rival market. As noted by the CEO of the case company:

“JD is committed to seamlessly connecting and linking technology and partners to build an open, symbiotic and win-win business ecosystem. JD XTL has the ability to enable all channel partners to achieve unbounded win-win and jointly meet the era of unbounded retail.”

5. Discussion

By integrating the different patterns in which JD XTLs ecosystem was leveraged across the 3 phases, a process model of how digital Platform-based ecosystem can be managed for enterprise strategy (refer to figure 2). We narrowed the focus of our inquiry to pertinent themes from life-cycle perspective: (1) the core firm strategies in ecosystem development – manifested in platform strategies and ecosystem role. (2) IT-enabled capabilities underling platform infrastructure which enhance enterprise agility. (3) The consequences of ecosystem development – cantered on structure and nature of ecosystem.

Phase1: Nascent Stage of ecosystem management

At the time of its inception, by enacting strategies aligned with a capability logic, JD XTL is able to structure ecosystem value creation around its unique value proposition, attract new ecosystem members such as brands and shopkeeper to attain critical mass [13]. With critical mass, cross-side network effects would be established between actors.

The attainment of network centrality and critical mass gives rise to the formation of a hub-and-spoke ecosystem and positions the focal organization as a core firm at the centre of the network. By taking on the ecosystem role of Platform provider, core firm involve itself directly in collating the necessary information published on various digital capabilities. The IT technical skills and IT

infrastructure capabilities can be applied to support a tipping strategy to help the platform gain market momentum [9].

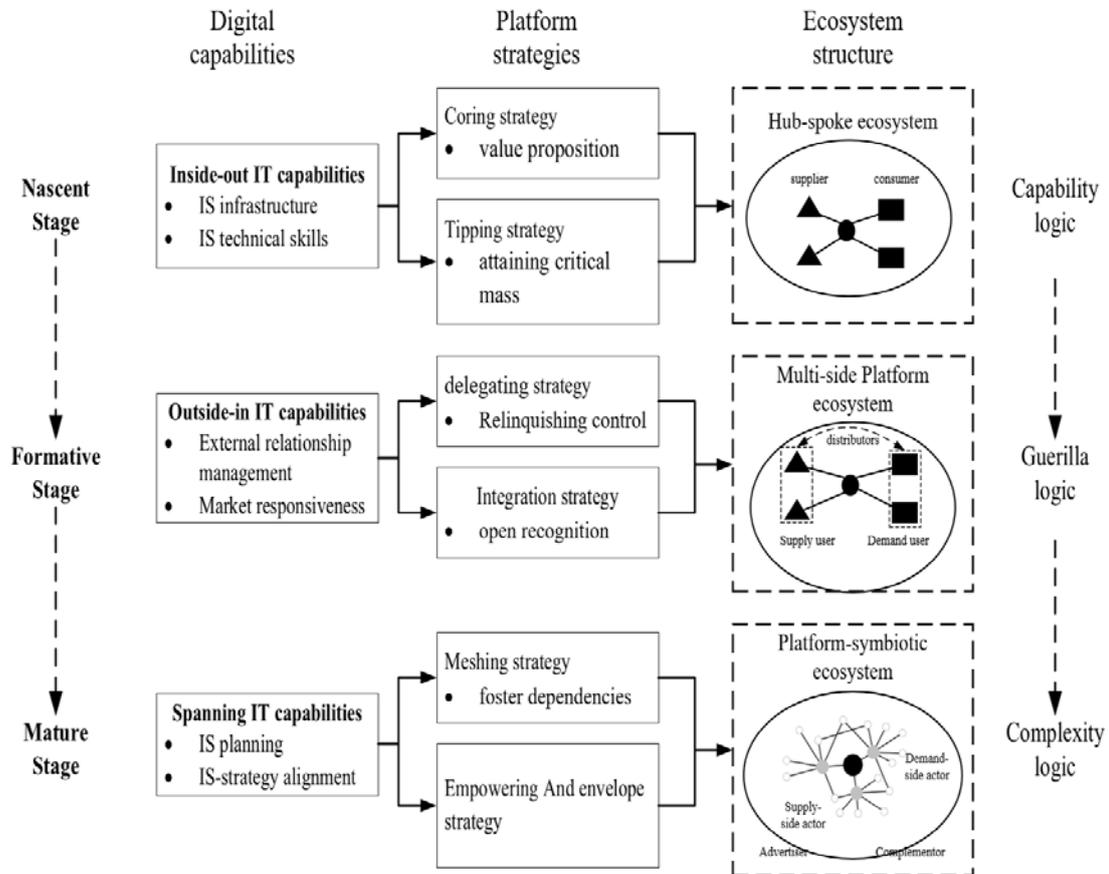


Figure 2: process model of the management of digital platform ecosystem

Phase2: Formative Stage of ecosystem management

In the second phase of ecosystem development, XTL’s strategies were aligned with the guerrilla logic in that they were centered on exploration and Openness Integration. For example, XTL Launch promotion platform and convenience store plan to achieved network effects to spur further growth and to ensure its endurance. After a hub-and-spoke configuration is established, our model suggests that outside-in IS capability external relationship management should be emphasized in the formative stage [22]. In this phase, the core firm should adopt the ecosystem role of platform coordinator with a particular emphasis on developing capabilities that enhance internal and external interactions network within the ecosystem.

Platform growth may render the sponsor’s deep involvement in all the transactions of platform members impossible [3]. A delegating strategy enabled by a strong external relationship management capability can allow the platform sponsor to manage the problems associated with growth by promoting self-organization among platform members. With the networked configuration, members would be allowed to interact freely in a protected space, which would result in greater platform openness [27]. Because platform openness, in turn, stimulates innovation to increase cross-side network effects and the platform’s scalability [28].

Phase3: Mature Stage of ecosystem management

Based on the case data, our model suggests that when ecosystem development is at an advanced stage, the core firm should (1) pursue strategies aligned with a complexity logic and (2) adopt the ecosystem role of a solution solver that cater to its member’s every need. In addition, in line with

the new ecosystem-oriented mentality, JD's role within the ecosystem evolved from a platform provider into a solution solver that cater to its member's every need.

By increasing mutual interdependence, creating the conditions for collective action, priming the ecosystem for innovation and continuous change, and enhancing the strategic focus of its ecosystem members, a "co-evolving, symbiotic, self-reinforcing system of strategic contributions" is formed that gives rise to a platform-based symbiotic ecosystem [13]. After attaining the symbiotic configuration, our process model suggests that the ability to manage, develop the collective IS capabilities of platform members should be emphasized in the mature stage of ecosystem development. We term this ability platform IS leadership and categorize it as an outside-out IS capability.

6. Conclusion

6.1. Theoretical Contributions

By addressing the research questions set forth at the beginning of this paper, this study makes several important theoretical contributions. The theoretical contribution of this research lies in perfecting the evolution theory of digital platform ecosystem ecosystems and clarifying the development strategies and internal mechanisms of different stages. Although previous studies have identified a number of antecedents for ecosystem development [12, 13], our review of the literature has failed to identify a single process model that provides a description of the dynamics of ecosystem development. In practice, this paper provides insights into the various platform owners or provider and their activities. The goal of the study is also to provide practitioners from all organizational levels with a set of micro-strategies and their corresponding structures, from which they can select when addressing challenges as part of the evolution of their digital platform ecosystems.

6.2. Limitations and Future Research

This article is not without its limitations. First, although studies based on the single case research methodology is a "typical and legitimate endeavour" in qualitative research, a particular criticism that is commonly directed at these studies is the problem of generalizability or external validity [24]. Nevertheless, future research could be directed towards statistically validating our findings to better define the boundary conditions of the process model that we develop in this paper [10].

A second limitation of our study concerns the retrospective nature of the interviews conducted as the primary means of data collection. The disadvantage of retrospective responses is that they are susceptible to errors of recall. Yet, given that our account of the events, decisions and activities that unfolded at XTL spanned a period of four years, it must be acknowledged that a synchronous approach to data collection is impossible. Future research could adopt a broader exploratory sequential approach whereby researchers collect further data to build a consolidated theory to explain the process model [29].

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