

Chapter 2

Prioritizing the Roles of Control Mechanisms in Digital Platform: An Analytic Hierarchy Process Approach

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ABSTRACT

Existing literature on control in software development considers only the principal-agency relationship between controller and contolee and this view does not hold true between ecosystems leader and partners, which are independent organizations. This chapter aims to study the critical role played by inter-organizational control mechanisms in the context of mobile platform ecosystems. By utilizing opinions of 38 experts and employing an Analytic Hierarchy Process (AHP) approach, this chapter identifies and ranks the most important roles played by control mechanisms in digital platform. The findings show that ecosystems' leaders primarily use control to manage or improve its central position in the network to capture a higher share of value of the service. The findings provide further insights on two other roles of control in platform ecosystems: (1) accessing complementary resources and (2) managing interdependency between partners. This chapter contributes to organizational control theory in the context of emerging platform-based ecosystem.

INTRODUCTION

With the advances of feature-rich mobile phones equipped with high computing power and mobile network technology, mobile communication has spread and diffused into our daily lives, both in modern western economies as well as emerging economies. Moreover, Salama and Shawish (2012) argue that developments of digital technologies have increased the possibility of horizontal and vertical integra-

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tion of knowledge, communication and information. Business managers are also aware that the future growth of revenues in the mobile telecommunication industry, rather than by subscriber growth alone, will be driven by innovative mobile value-added services (Gerpott, 2011). A consumer survey (IBM Global Telecommunications Consumer Survey, 2014) shows that in emerging markets, users are planning to spend more on mobile services in the next two to three years, while reducing consumption in many other areas, such as electronics. The same survey also indicates that, at a global level, almost one-third of the users are planning to reduce their usage of voice and text (SMS) services, while increasing their usage of the Internet, mobile applications and over-the-top (OTT) services such as Viber and WhatsApp.

Other than individuals, enterprises from different industries are also transforming their businesses with the help of mobile services to: (i) achieve their business objectives such as differentiation and personalization of customer experience (ii) extend their business to the workforce mobile and customers and (iii) improve operational efficiency as well as customer intimacy (IBM Institute for Business Value, 2012).

The World Bank, International Finance Corporation (IFC) and other international agencies have identified mobile technology as a medium for achieving objectives such as financial inclusion, increase in GDP in developing nations, reduction in financial transaction costs, and bringing more transparency and effectiveness in government spending (World Bank, Information and Communications for Development: Maximizing Mobile, 2012). It is important to mention that three important developments in the realm of business model and technology are responsible for higher adoption and usage of mobile services by individuals as well as organizations. Firstly, extensive improvement and rapid enhancements in features of user devices, and an associated reduction in costs (Becker et al., 2012). Secondly, the technological evolution of mobile networks, which makes it easier to carry large volumes of digital traffic (Dekleva et al., 2007). Lastly, the emergence of new business models (i.e. business model innovation) for mobile services development in the form of mobile ecosystems and platforms (Basole & Karla, 2011; Basole & Rouse, 2008; Bouwman et al., 2008; Nikou, et al., 2014; Tiwana et al., 2010). In mobile ecosystems, multiple partners work together and combine their resources and capabilities to ensure (higher number of) innovations in a shorter time-span. From an academic point of view, these trends lead to question about how business models and constituting mobile ecosystems are being formed and evolved over the time. Other than the mobile domain perspectives, the research related to platform and ecosystems is also gaining momentum due to two other reasons. The first one, is the digital ecosystems which has emerged as the most dynamic and exciting source of innovation (Eaton et al., 2011). The other significant reason is the competition and innovation development in business which has shifted from the preview of stand-alone enterprises towards platform-based ecosystems (Tiwana et al., 2010; Qiu et al., 2017). Specific to mobile device industry, in 2007 and before the advent of platform, five independent enterprises (Nokia, Samsung, Motorola, Sony Ericsson and LG) captured 90% of industry's profit. However, with the successful introduction of Apple's platform and associated ecosystems, Apple could capture 92% of global profit in 2015, leaving little to benefit from for other players in the ecosystems (Van Alstyne et al., 2016).

Literature informs us about the sheer volume of prior studies on different aspects of the business model related to e.g. mobile ecosystems (Basole & Karla 2011; Zhang & Liang, 2011), governance of mobile value-network (De Reuver, 2011, De Reuver & Bouwman, 2012) and platform governance and architecture (Tiwana et al., 2010, Tiwana, 2015). Ballon (2009) indicated that control strategy is a crucial part of the business model in mobile ecosystems. Control strategies and control points make the attainment of goals in a multi-organizations alliance more predictable, influences undesirable behavior of partners, and reduces the chances of unpleasant surprises or unexpected outcomes (Das, 1993; Merchant, 1985). The absence of a clear control portfolio makes control strategies inefficient and increases the cost of

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