



DRUID  
society

Paper to be presented at  
the DRUID16 20th Anniversary Conference  
Copenhagen, June 13-15, 2016

## **Dependency Challenges, Complementor Maturity and Response Strategies: Joining a Multi-Sided Platform Ecosystem**

**Elizabeth Jane Altman**  
**University of Massachusetts Lowell**  
**Management**  
**elizabeth\_altman@uml.edu**

### **Abstract**

Complementors gain market opportunities by joining ecosystems; they also face challenges from relationships with multi-sided platform ecosystems. This research focuses on managerial challenges and strategic and organizational responses of complementors joining ecosystems. Asymmetries lead to dependencies, which I categorize into three types: 1) technological, 2) information, and 3) values-based. Based on a longitudinal qualitative inductive field-based study, this research finds that over time the organization passes through three phases of complementor maturity. These phases correspond with three response strategies: compliance, influence, and innovation. This paper contributes to platform, ecosystem, complementor, and organizational theory research by: 1) exploring relationships between complementors and dependencies, 2) introducing phases of complementor maturity, and 3) articulating complementor response strategies and outlining how, when, and why an organization moves through maturity phases executing these strategies.

# **Dependency Challenges, Complementor Maturity and Response Strategies: Joining a Multi-Sided Platform Ecosystem**

## **ABSTRACT**

Complementors gain market opportunities by joining ecosystems; they also face challenges from relationships with multi-sided platform ecosystems. This research focuses on managerial challenges and strategic and organizational responses of complementors joining ecosystems. Asymmetries lead to dependencies, which I categorize into three types: 1) technological, 2) information, and 3) values-based. Based on a longitudinal qualitative inductive field-based study, this research finds that over time the organization passes through three phases of complementor maturity. These phases correspond with three response strategies: compliance, influence, and innovation. This paper contributes to platform, ecosystem, complementor, and organizational theory research by: 1) exploring relationships between complementors and dependencies, 2) introducing phases of complementor maturity, and 3) articulating complementor response strategies and outlining how, when, and why an organization moves through maturity phases executing these strategies.

**Keywords:** Managing Innovation, Complementor Strategy, Multi-Sided Platform, Ecosystem, Dependence, Asymmetric Inter-organizational Relationships, Complementor Maturity

*“You know how in America we never dip our flag to anybody? At the Olympic Games, you know... We never dip our flag, period. Well, I feel like we kind of dipped our flag.”*  
- Zuni manager, 2-8-12

*“So, dipping our flag? I’ll dip...I’ll dip... because I know that I’m still in the end delivering a better experience than anybody else can.”*

- The same Zuni manager, 8-26-14

## **INTRODUCTION**

Some products work better when combined with others; a baseball glove is not useful unless one also has a baseball. A computer, smartphone or tablet becomes more valuable when a user downloads software applications (“apps”) or adds accessories. With the growing prevalence of products with open interfaces, products are becoming increasingly interdependent such that users purchase accessories, or complements, which they use to realize the full potential of their purchases (Brandenburger & Nalebuff, 1996; Adner & Kapoor, 2010). Accessories exist as software apps and as hardware products such as cases, keyboards, headphones, speakers, trackballs, etc. To access large markets, organizations that create complementary products join ecosystems and become dependent upon other firms to provide interface specifications, requirements, technological components, and so on. In many cases, firms that produce products that benefit from accessories operate multi-sided platform (MSP) businesses that facilitate interactions between buyers of their core products (e.g., smartphones) and producers of complementary products (e.g., smartphone accessories). As more of the world’s most valuable and influential firms operate platform-based business models (Gawer & Cusumano, 2002; Regalado, 2014), there is growing interest in the effects of these businesses on the complementors dependent upon them.

Examples of MSP businesses include: Android Market, enabling developers to sell apps to Android phone users; Amazon Marketplace, facilitating vendors selling used and new goods to consumers; and Internet dating sites, allowing individuals looking for relationships to interact. Research on MSP businesses is increasing with recent articles organizing platform literature and providing definitions and typologies (e.g., Baldwin & Woodard, 2009; Gawer, 2014; Thomas, Autio, & Gann, 2014). Much research focuses on emergence of platforms, competition between them, and network effects (Rochet & Tirole, 2003; Eisenmann, Parker, & Van Alstyne, 2006; Zhu & Iansiti, 2012). Burgeoning research emphasizes strategic decision-making in platform governance and competition outcomes identifying trade-offs in governance structures (Bresnahan & Greenstein, 2014). Throughout this research, MSPs are the focal unit of analysis and implications for complementors remain secondary or un-addressed.

Ecosystem research has focused on challenges and opportunities of ecosystem creation (Moore, 1993, 1996), competition (Iyer, Lee, Venkatraman, 2006; Adner, Oxley, & Silverman, 2013), and technology emergence and substitution (Christensen & Rosenbloom, 1995; Adner & Kapoor, 2015).<sup>1</sup> Ecosystem-focused scholars commonly find that creating and successfully managing a strong complementor ecosystem is beneficial to a focal firm (Adner, 2012; Iansiti & Levien, 2004), though governance of ecosystems may create tensions with emergence of contradictory logics and paradoxical tensions (Wareham, Fox, & Giner, 2014). Further, in emerging management-centered ecosystem literature, researchers study trade-offs in ecosystem management decisions such as opening participation to all actors versus limiting involvement via

---

<sup>1</sup> Ecosystem research sometimes refers to systems of producers and markets as value networks such as in Christensen & Rosenbloom (1995). The value network definition, however, does not imply the existence of complementors; though, the study of these interdependent systems is valuable to understanding the phenomena of ecosystems including complementors.

compliance criteria finding that the number of platform participants is linked to innovation and investment (Boudreau, 2012). Scholars are also applying the complementary asset framework (Teece, 1986) in the context of entrants into new industries exploring how complementarities and competition affect new entrant strategies (Kapoor & Furr, 2014). Still, with few exceptions, this research centers on MSP owners and managers and stops short of extending to managerial implications for complementors. These under-studied firms constitute a multi-billion dollar worldwide industry and increasingly face challenges associated with interfacing with large powerful platform managers (such as Apple, Samsung, etc.).<sup>2</sup>

To study challenges and response strategies of complementors operating in multi-sided platform ecosystems, I explore the research question: What are the strategic and organizational issues associated with mature, independent organizations joining established ecosystems? In particular, what challenges does an organization face as it enters asymmetric relationships, and how does the organization respond to these challenges? Are these challenges and complementor strategies different in the context of MSP businesses and their complementors, or are they similar to those in other asymmetric interfirm relationships (e.g., buyer-supplier, alliances, etc.). Because of limited existing research, I utilize an inductive theory-building approach with a longitudinal single case study design that spanned three and a half years and included semi-structured interviews, observation, and archival research. I study this question from the perspective of an incumbent organization joining ecosystems as a complementor and investigate challenges experienced by a division of an accessory provider as it strived to balance maintaining its own

---

<sup>2</sup> For example, Strategy Analytics, a reputable industry analyst firm, recently forecast global total apps revenues of \$33.7B (MacQueen, 2014).

independence and growth aspirations with an emerging need to operate as a member of ecosystems managed by large and powerful central firms.<sup>3</sup>

The analysis in this paper shows we can use dependency, power, influence, and organizational identity theories to better understand challenges complementors face as they join ecosystems, particularly when these complementors are mature incumbents entering asymmetric relationships. I identify three types of dependencies prevalent in such situations: 1) technological, 2) information, and 3) values-based. I theorize the notion of complementor maturity, which progresses through phases over time and in which the complementor invokes three response strategies to manage dependencies: 1) compliance, 2) influence, and 3) innovation. As it matures, the complementor changes its relative emphasis on each of these three strategies. The findings suggest that the process of complementor maturity might be associated with the organization's existing and evolving identity. I induce a model illustrating the relationships between theoretical concepts. This analysis of complementor maturity and response strategies provides a new way to understand complementor strategy when complementors engage with powerful MSPs. It also adds new insights to our understanding of dependencies in interfirm relationships.

[If you are interested in reading the remainder of this paper, please contact the author: [elizabeth\\_altman@uml.edu](mailto:elizabeth_altman@uml.edu) . Thank you.]

---

<sup>3</sup> Although the focal division was exploring options to offer complementor products in multiple ecosystems, during this study, its primary focus was providing products to work with Apple products. Thus, the vast majority of my data relates to the division's interactions with, and challenges related to, offering products to work with Apple products.