

Book Reviews

Platforms, Markets and Innovation, Annabelle Gawer (Eds.), Edward Elgar Publishing (2010), 396 pages, ISBN: 978-1848440708

Industry platforms are considered to be building blocks that act as a foundation upon which an array of firms or a business ecosystem can develop complementary products, technologies or services. As Gawer points out, the emergence of platforms is a relatively new phenomenon affecting most industries these days, from products to services. We have seen that firms which became platform leaders by making their products, technologies or services successfully become the foundation on which other companies build other companies' products or offer other companies' services redesigned industrial landscapes, overturned the balance of power between firms and became today's market leaders. Microsoft Windows in the PC market, Google in online marketing, and Apple in terms of the smart phone industry are great examples of successful platform leaders.

Despite the pervasiveness of platforms and the increasing interest in platforms research, many important questions regarding governance, management, design and knowledge issues of platforms have not been fully answered. This book tries to fill this void. This book aims to answer the following questions: Under which conditions can we expect industry platforms to emerge? What forms do they take, in what context? How can firms succeed in the new platform game? Which capabilities are needed? When should firms open up or close up their technologies and processes? How do we know which strategy is best, given our industry's and firm's circumstances? How to manage the exploratory processes to create a platform? How to manage platform development

projects? How to manage the creation of knowledge associated with the collective innovation practices? And what are the implications of all of this for competition and innovation in services?

This book is composed of 14 chapters, and is divided into three parts. Part I (Chapters 2, 3, 4 and 5) presents an overview of platforms. Part II (Chapters 6, 7, 8 and 9) deals with specific questions related to opening or closing platforms, as well as on platform governance issues. Finally, Part III (Chapters 10, 11, 12, 13 and 14) of the book focuses on platform management, design and knowledge issues.

Chapter 1 is an introduction chapter by Annabelle Gawer and it summarizes the contents of the book. In Chapter 2, "The architecture of platforms: a unified view", Carliss Y. Baldwin and C. Jason Woodard shed light on the relationships between platforms and the systems in which they are embedded, in order to better understand firms and industries where platforms play an important role. Although the term 'platform' is used in many ways, Baldwin and Woodard find that the fundamental architecture behind all platforms is essentially the same: the system is partitioned into a set of 'core' components with a low variety and a complementary set of 'peripheral' components having a high variety. The low-variety components constitute the platform. They are the long-lived elements of the system and thus implicitly or explicitly establish the system's interfaces, the rules governing interactions among the different parts. This chapter concludes by focusing on four questions: First, when is a platform architecture preferred over allowing all components to vary arbitrarily? Second, when can a platform and its peripheral components (complements) remain within the control of a single firm? Third, when should a firm allow or encourage outsiders to develop

complements to a platform it controls? And fourth, if a firm does allow – or is forced to accept – external complementors, over which components of the system should it strive to retain control?

Chapter 3 is the article by Annabelle Gawer. In “Platform dynamics and strategies: from products to services”, Gawer tries to answer two research questions: (1) under which conditions can we expect industrial platform dynamics to emerge and unfold? (2) In the context of platform industry dynamics, what kind of platform strategies should firms devise, depending on whether they are incumbents or new entrants? To answer the first question, Gawer presents a new typology of platforms, which identifies the context in which different types of platforms appear. He then suggests an ‘evolutionary’ perspective on platform emergence and identifies circumstances under which internal platforms evolve into supply chain platforms, which then evolve further into industry platforms. To answer the second question, he builds on concepts of ‘coring’ and ‘tipping’, and further specifies the combinations of these that are best suited to new entrants and to incumbents. He also suggests that firms’ ‘design capabilities’ should have a decisive impact on which strategy to pursue.

In Chapter 4, Fernando F. Suarez and Michael A. Cusumano, in their chapter on “The role of services in platform markets”, examine understudied aspects of platforms emergence and competition: the role of services. Suarez and Cusumano address three questions: What is the potential role of services in the outcome of platform battles in product industries? What is the importance of services in platform-mediated markets versus other markets? And which types of firms are more likely to produce services in platform-mediated industries and why? In the empirical part of the chapter, Suarez and Cusumano find in the software products industry that platform markets such as operating systems, multimedia and videogames, as well as services revenues do not overtake product revenue, suggesting that this may be caused by the resilience of platform markets to commoditization.

Chapter 5 is devoted to David S. Evans’s paper, “How catalysts ignite: the economics of platform-based start-ups”. Evans discusses how entrepreneurs

who start multi-sided platforms must secure enough customers on both sides, and in the right proportions, to provide enough value to each group of customers and to achieve sustainable growth. The editor values this chapter highly given that this chapter is an important and great contribution to the literature on multi-sided platforms – which have so far assumed that the markets on each side of the platform already exist, and have focused almost exclusively on how to price access to the platform to encourage adoption. In Evans’s paper, the entrepreneurs must secure ‘critical mass’ to ignite the growth of their platforms, otherwise their platform implodes. Evans suggests a number of strategies available to the entrepreneurs in detail to reach this critical mass. This chapter concludes with an analysis of B2 (business-to-business) exchanges and social networking websites Friendster and Facebook.

In Chapter 6, Thomas R. Eisenmann, Geoffrey Parker and Marshall Van Alstyne investigate how to make the right choices about opening or closing mature platforms in their article, “Opening platforms: how, when and why?”. Selecting optimal levels of openness is crucial for firms that create and maintain platforms. The authors argue that decisions to open a platform entail tradeoffs between adoption and appropriability. The following is the conclusions from this chapter: platform openness occurs at multiple levels depending on whether participation is unrestricted at the (1) demand-side-user (end-user), (2) supply-side-user (application developer), (3) platform provider or (4) platform sponsor levels.

Chapter 7 is “Platform rules: multi-sided platforms as regulators” by Kevin J. Boudreau and Andrei Hagiu. Boudreau and Hagiu emphasize on the importance and variety of non-price instruments platform owners use to regulate and govern their platforms. Multi-sided platforms are characterized by interactions and interdependence between their multiple sides, and the existence of network effects. This chapter contributes to the literature by providing evidence supporting a regulatory role of Multi-sided platforms that goes beyond price setting and includes imposing rules and constraints, creating inducements and otherwise shaping behaviors. These non-price instruments solve what would otherwise be multi-sided

‘market failures’. Boudreau and Hagiu present case studies to demonstrate these points: digital Multi-sided platforms – Facebook and TopCoder. They also look at non-digital platforms: the Roppongi Hills ‘mini-city’ in Tokyo, Japan, and Harvard Business School.

Chapter 8 is “Protecting or diffusing a technology platform: tradeoffs in appropriability, network externality, and architectural control” by Melissa A. Schilling. Firms are sometimes encouraged to liberally diffuse their technology platforms through open sources in order to stand in as the dominant design. But, if firms liberally diffuse the technology to potential competitors, they have a chance to lose monopoly rents. Then what factors will decide whether firms choose to adopt a more ‘open’ technology strategy? How does a firm determine what level of ‘openness’ will maximize the technology’s chances for survival and the firm’s long-term profitability? This chapter systematically investigates how either open or closed technologies can rise to the position of dominant design.

In Chapter 9, Shane Greenstein in his chapter on “Open platform development and the commercial Internet” points to the analysis of the relative benefits of open versus closed practices by focusing on the development of the commercial Internet. What would have been different about the Internet if it had been organized as a proprietary commercial platform? This chapter concludes that openness did not make the Internet more innovative. However, Greenstein also concludes that openness did play a special role in encouraging participation in the development of the Internet infrastructure and in fostering structural changes in the provision of commercial software.

Chapter 10 discusses supply chain platforms through a case study of automotive supplier parks in Brazil. Mari Sako, in “Outsourcing of tasks and outsourcing of assets: evidence from automotive supplier parks in Brazil”, draw on evidence from three Brazilian supplier parks, Volkswagen Resende, General Motors Gravatai and Ford Camacari, to examine the causes and consequences of outsourcing and co-location for the governance of the firm, relations with suppliers, and labor-management relations. She analyzes three dimensions theoretically and empirically, the degree of

task outsourcing, the pattern of asset ownership and the nature of relational governance.

In Chapter 11, Pascal Le Masson, Benoit Weil and Armand Hatchuel, in “Platforms for the design of platforms: collaborating in the unknown”, demonstrate how industry platforms can be designed using specific collaborative relationships that also take the form of platforms. The authors use a multiple case study in four different industries: biomaterials, microelectronics, aeronautics and biotechnologies. They suggest that the collaborations for platform design consist not only in delivering an industry platform but in positioning this platform potential into a strategic landscape, characterized by alternative platform strategies, the capabilities enabling these platform strategies, and the values of these platform strategies for partners.

Chapter 12 focuses on the process of defining new internal platforms. Stefano Brusoni and Andrea Prencipe in their essay on “Design rules for platform leaders” argue that the successful introduction of new platforms depends on the implementation of consistent changes across the domains of product, organization and knowledge. They find, in a case study in the aeronautics industry, that these changes are implemented by organizations that act as cross-domain catalysts through the mediating role of key individuals who span all three domains. The authors point out that key people play a central role in enacting cross-domain rewiring. Leading figures that played a key role in the connection of the knowledge, organization and product domains were senior engineers with long careers in the industry.

In Chapter 13, “Detecting errors early: management of problem solving in product platform projects”, Rasmin Yakob and Fredrik Tell examine possible approaches to problem solving in product platform development. The authors point out that the more complex the hierarchical configuration of product platforms, the more complex the problems and errors encountered in their development will be. This chapter presents an empirical study of two product platform projects: the telecommunications and the automotive industry. The findings show that in developing capabilities for the complex problem solving characteristic of product platform development projects,

it is imperative to narrow the search process between errors identified and the problems underlying those errors.

In Chapter 14, Hirofumi Tatsumoto, Koichi Ogawa and Takahiro Fujimoto, in “The effects of technological platforms on the international division of labor: a case study of Intel’s Platform business in the PC industry”, discuss the effects of technological platforms on the international division of labor. This chapter explores variables such as the characteristics of the platform, the mechanism through which the platform is diffused, and the effects it has on the international division of labor through an architectural analysis of the case of Intel’s platform business in Taiwan in the 1990s. With the fast diffusion of technology, the adoption of a platform leads to a rapid expansion of products produced by firms in developing countries. The cost reductions in these firms can create huge global market trading such as BRIC (Brazil, Russia, India and China) by bring about reasonable prices. As a result, the platform fundamentally changes the international division of labor by strengthening the new model of economic collaboration between developing and developed countries. The growth of the platform destroys the advantages of established firms in developed countries and encourages entry into the market by new firms in developing countries.

The platforms, whether used inside firms or across supply chains, impact industry dynamics, create new forms of competition, and reveal new forms of collaborative innovation across companies today. This timely book is the first of its kind dedicated to the emerging field of platform research. The 24 expert contributors across the USA, Europe and Asia in the fields of strategy, economics, innovation, organizations and knowledge management in this book provide an empirical-based understanding of the nature of platforms and the implications the emergence of platforms hold for the evolution of industrial innovation. They present an overview of platforms and discuss governance, management, design and knowledge issues. With a multidisciplinary approach, this book will be an excellent reference for students, scholars and company managers in various disciplines including management of technology, business

strategy, industrial engineering and design, economics of technological change and innovation, as well as innovation policy. Readers will learn a lot about the mysterious nature of platforms and the important role that platforms play in business, society and our everyday lives.

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Econophysics and Companies Statistical Life and Death in Complex Business Networks, Hideaki Aoyama, Yoshi Fujiwara, Hiroshi Iyetomi, & Wataru Souma, Cambridge University Press (2011), ISBN: 978-1-107-40348-2

Introduction

It is interesting that authors of *Econophysics and Companies* have been working in the areas of natural science or engineering and hold Ph.D. degrees in physics. Hideaki Aoyama, the first author, is a professor of physics at Kyoto University; Yoshi Fujiwara is a research fellow at Advanced Telecommunication Research Institute International (ATR); Yuichi Ikeda is a senior researcher at Hitachi Research Laboratory; and Hiroshi Iyetomi is a professor of physics at Niigata University.

As readers can infer from the authors’ affiliations and the book’s title, econophysics is an interdisciplinary field which applies statistical methods more commonly used in physics to economic data. Regarding the relationship between physicists and economics, the authors give somewhat brave remarks in their book, as follows:

“Economics has in fact mimicked physics since the nineteenth century. This is particularly true of those who developed modern economics,