Chapter 2
Platform Leaders and Complementors' Strategic Management of Standards:
Cases for Complex Products and Systems

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ABSTRACT

In this chapter, the authors describe how companies strategically manage standards in complex products and systems. They explore how standards selection and adoption can leverage the position of a firm as a leader or complementor[1] in a CoPS platform. The authors particularly review the platform leader's management of standards and question whether these standards are used to reinforce its leadership or not. Then, they adopt the complementor's viewpoint and question whether standards adoption and implementation constitute a vehicle for skills acquisition. In other words, the authors address two questions: Does standard selection constitute a strategy to strengthen leadership? Does standard adoption facilitate capability building for a complementor and enable it contesting an installed leadership?

INTRODUCTION

Complex Products and systems (CoPS) are defined as high cost, higlhy customized, engineering-intensive products, systems, networks and constructs which often require several producers to work together simultaneously (Hobday, 1998). In this specific context, standards, and more specifically "local standards", are considered a solution to coordinate the different partners of the project (Steinmuller, 2003). The leader of the project defines and selects a set of specifications, potentially derived from industrial standards to achieve coordination and to ensure complementarity between the components of the complex system. To contribute to the project, the different participants are requested to conform to these

standards. To some extent, standards shape the relationships between partners. In this contribution, we aim at exploring this strategic perspective on standards. We refer to Cusumano and Gawer 's description of the platform leader and complementor's positions (Gawer, 2002, 2009, 2010; Gawer and Cusumano, 2002, 2008 2014). Cusumano and Gawer (2002) exposes the strategies from complementors to become leaders or from leaders to maintain their leadership. We explore how standards definition, selection and implementation (de Vries, 1997) can leverage these hierarchical positions. We particularly review the platform leader's management of standards and question whether these standards are used to reinforce its leadership or not. Then, we adopt the complementor's viewpoint and question whether standards adoption and implementation constitute a vehicle for skills acquisition. In other words, does standard adoption facilitate capability building for a supplier or a complementor? How far do these capabilities contribute in the development of new markets or contesting an installed leadership?

Our contribution is based on Complex Products and Systems (CoPS) cases analysis from the space sector. We specifically review space launch development and production activities. The space sector requires converging technologies (between civil and military in the propulsion domain for instance). In such converging ecosystems, Hacklin et al (2013) have described strategic profiles such as technology pioneer, market attacker, ecosystem aggregator or business remodeler. We adopt this typology to refine the role of standards in the description of the strategic profile of platform leaders and complementors.

The first part exposes the strategic management of standards in complex products and systems (Steinmueller, 2003). We expose the different strategic profiles a firm adopts in a high technological converging context and link these profiles to the positions of platform leader and complementor. Then, we explore the decisions made upon standard definition, selection and implementation for platform leaders and complementors. The second part exposes the method. The third part presents the results that will be discussed in the fourth part.

Strategic Management of Local Standards in CoPS

Steinmueller (2003) refers to "local standards" as technical compatibility standards determined through private processes of consultation and through processes of design and problem solving within or between organizations that lead to "privately held" outputs (of the standardization process). These "local standards" are shared within a community whose members are bound by contractual arrangements through their involvement in a particular project. They are particularly important in the context of Complex products and systems. Litterature on CoPS (Steinmueller, 2003, Paoli and Prencipe, 1999; Davies and Brady 2000; Hobday et al. 2000; Davies and Hobday, 2005)) relates to the integration of different components into equipements, equipments into sub-systems, and sub-systems into systems. Behind the integration complexity lie two kinds of issue: the first one, studied by Steinmueller, is how the knowledge supporting the system integration is "acquired, retained and applied". This issue largely relies on the work done on interface standards (David and Greenstein, 1990) which ensure the compatibility of the different levels of artefacts constituting the system. The second issue relates to the decision made during the standard lifecycle as described by De Vries (1997) (e.g. development, selection and implementation stages), especially when those decisions are of strategic nature and leverage the relationships between firms. Our contribution is based on the analysis of the strategic use of standard in the selection and implementation stages in such converging ecosystems. We build on Hacklin et al (2013) definition of strategic profiles such as technology pioneer, market attacker, ecosystem aggregator or business remodeler. We adopt this typology to refine the strategic management of standards of the by platform leaders and complementors.

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