Chapter 63

Metastructuring for Standards:
How Organizations Respond to the Multiplicity of Standards

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ABSTRACT

This chapter focusses on the appearance and implementation of process standards in software development organizations. The authors are interested in the way organizations handle the plurality of process standards. Organizations respond by metastructuring to the increasing demand for standardizing their development processes. Standards metastructuring summarizes all organizational mechanisms for facilitating the ongoing adaption of global standards to the organizational context. Based on an in-depth single case study of a software developing organization in the automotive technology sector, the authors found four areas of metastructuring, four roles for standard mediation, and four types of metastructuring activities. With the case study, they encourage further research that proves standards in use and how organizations respond to the challenges of standardization.

INTRODUCTION

The multiplicity and plurality of standards is one of the challenging issues for modern working organizations. In the light of the recent economic developments and the imposed dependency of economic decisions on standards it is important to elaborate on these challenges, changes and risks which confront organizations within an audit society of organized uncertainty (Power, 1997). In this context, we will contribute to the question of how organizations respond to and cope with the consequences evolving from the multiplicity and plurality of process standards. We chose an exploratory study on the micro level within a single software development organization.

Research on standards has many facets. On the one hand, we distinguish research on standards focusing on the design mode and, on the other hand, the use mode of standards (following Orlikowski, 1992). This distinction emphasizes the occurrence of social construction, both, before and after a standard is enacted in an organization. It refers to processes of setting and following standards. The *design* mode describes the process of standardization on the standard setting bodies' and/ or the related stakeholder's side. Hereby, researchers have inquired how standards emerge, how standard setting bodies are organized and how these bodies determine the content of standards, as well as, how they convince potential stakeholders to certify their organizations (Blind and Mangelsdorf, 2016; Brunswicker et al., 2015; DongBack, 2013; Egyedi, 2008; Furusten, 2000; Marimon et al., 2009; Tamm Hallström, 2004, Wiegmann et al., 2017).

For this paper, the *use* mode of standards is of special interest. The use mode literature on process standards is chiefly shaped by the research on the ISO 9000s and ISO 14000s process quality norms, culminating in the following two topics in the early 2000s. Firstly, there is an extensive amount of literature about the motivation and barriers of the implementation of standards (Boiral, 2003; Niazi et al., 2005; Zeng et al., 2007). This literature focuses on the influence of the implementation of process standards on product quality, on the organizational performance and the obstacles and limitations while putting a standard into effect. Secondly, there is a discussion around process standards that reflects on the requirements for a 'good' organization. This can be measured through customer satisfaction, defined responsibilities, the reduction of production and management mistakes, quality assurance, documentation of all processes, decisions and related audits (Lawrence and Phillips, 1998). Finally, little research has been done on the social construction of standards, in particular, on standards as a form of regulation or as a code of corporate governance and on the functioning of these code regimes (Jakobs, 2006; Power, 1997; Seidl, 2007; Wieland, 2005). Thereby, code regimes are specific types of standards which regulate corporate behavior based on a 'comply-or-explain rule'. Seidl (2007) investigates code regimes in view of parameters that influence the effectiveness of a code regime. Important for our understanding of standards is here the conclusion that the de-facto content of a standard is determined to a significant extent by standard followers and not by standardization bodies.

Besides these studies, we can resume that the social construction of standards by organizations plays a minor role on the use mode of standards in the existing research. Thus, we deem it as important to elaborate on this subject since we do not sufficiently know how organizations themselves adopt multiple standards in reaction to a number of institutional pressures. With this contribution we intent to provide empirical insights on a micro level addressing organizational issues of standard multiplicity and plurality.

The contribution of this article is threefold. Firstly, we elaborate on the institutional answers how organizations deal internally with the plurality and multiplicity of standards. In contrast to standardization *by* organizations and standardization *as* organization, we are dealing with the standardization of organizations. Standardization of organizations relates to the question of "how standards are adopted, diffused, implemented, avoided, and altered in the course of their implementations" (Brunsson et al., 2012, p. 614).

Secondly, we focus on the empirical phenomenon of standard-use mediators and their metastructuring activities (Orlikowski et al., 1995). In consequence of the development of a so-called "standard bible" by the software organizations, standard-use mediators occur in organizations as a response to a multi-facet standardization pressure from the institutional environment of organizations. We believe that the way organizations meta-structure multiple process standards has an enormous influence e.g. on the innovating activities of an organization (Fried, 2010; Fried et al., 2013).

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