Analysis of Various Structures of Standards Setting Organizations (SSOs) that Impact Tension among Members

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ABSTRACT

As the field of ICT standardization has changed from a relatively static, monolithic environment into a very dynamic field in the last two decades, many formal standardization bodies, fora, consortia and other types of standards setting organizations (SSOs) have emerged. These SSOs have often competed against each other for the same application areas. To a large degree, these changes reflect developments in the field of telecommunications and IT themselves, including liberalization, globalization, rapid changes in technology, and convergence. More than ever before, firms can choose which standard setting body they want to join. Nevertheless, data shows that many firms decide to be members of many relevant bodies at the same time. The aforementioned changes and the multi-SSO memberships of a firm have differently influenced various types of stakeholders, which increases potential tension among members during standardization processes. This paper intends to study such tension and the effect influenced by the structure and processes of the standard-setting bodies themselves. A framework to analyze tension within given organizational structure and processes based on Giddens' Structuration Theory is proposed. The appealing feature of this theory is that it is neither deterministic at the agent level nor at the structural level, but takes iterative influences between both levels as a starting point. This study shows how a SSO struggles to decrease tension among members and suggests propositions related to the tension that academia and practitioners can apply.

Keywords: Convergence, Globalization, Organizational Structure, Standards Setting Organizations (SSOs), Tension

INTRODUCTION

For a long time, standardization has been a relatively static process. Within a certain field (e.g. telecommunications industry), it was evident how standard-setting institutions had developed and maintained standards. Within this kind of field, demand was relatively homogeneous, so the requirements and job boundaries for a Standard Setting Organization (SSO) were clear.

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Due to environmental and technological changes such as liberalization, globalization, fast technological (r)evolution, and network convergence, the demand for standardization processes within the field of Information and Communications Technologies (ICT) has changed and become more and more heterogeneous. Consequently, companies create new standardization consortia or forums when they consider that the existing SSOs cannot satisfy their needs, because the governing structures and processes of those SSOs become too political with lots of tension among members (Bekkers & Seo, 2008). For example, ITU could not efficiently manage the NGN activities, because each member country would like to provide a chairman.

The growing number of standard-setting bodies and their dynamic relationships pose challenges for not only companies who need to participate in those bodies but also SSOs themselves who compete against each other in standardizing a technology including incumbent SSOs. Each SSO develops different levels and types of tension among its members, because it has its own governing structures and processes. Consequently, it challenges companies to deal with a different governing structure and process by SSO. To be competitive, SSOs need to ease the level and type of tension among its members. For this reason, it is necessary to understand the heterogeneous levels and types of tension as well as how structures of SSOs impact the creation, increase and decrease of tension.

Thus, it is important to analyze SSOs’ governing structures in standardizing a technology, because these structures greatly influence tension among members within a SSO according to Giddens’ Structuration theory. The Structuration theory, which will be explained in the section of Theoretical Background, acknowledges the significances of social structure and members of a society. A given social structure directs members to behave in a certain way. On the other hand, interactions among members influence the evolution of the social structure. In this sense, the social structure can affect the creation, increase, and decrease tension among members. In a SSO context, this idea can be amplified considering that a SSO has distinct governing structure and members join the SSO with specific purposes. Based on Structuration theory, this paper will reveal 1) how different governing structures and systems of various SSOs influence tension among member organizations in standardizing technology and 2) suggest propositions that can be used to formulate and improve a governing structure and systems so that it can decrease tension among members and encourage them to be more positively active in standardization processes. This paper will particularly review four influential SSOs to understand and identify different levels and types of tensions as exploratory research instead of exhaustingly examining all SSOs. Data collection was done through reviewing academic and non-academic papers that discussed with experts the functionalities and structures of the various SSOs. In addition, six semi-structured interviews were held with representatives of various companies who are members of many SSOs including the European Telecommunications Standards Institute (ETSI).

For academia, this paper contributes in identifying the heterogeneity of SSOs in different levels and types of tension based on the governing structures and processes of SSOs. SSOs may use this proposed analysis to improve their governing structures and standardization processes to attract more members and maximize the effectiveness and efficiency of technology standardizations. Practitioners including companies as well as policymakers involved in SSOs can also apply the findings of this study to improve their standards strategies and policies through understanding and analyzing various governing structures and processes of different SSOs.

**THEORETICAL BACKGROUND**

There is little doubt that Information and Communication Technologies (ICT) have been a backbone of the ubiquitous society. The ubiquitous society means that wherever and whenever
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