

Chapter 21

Cost–Benefit Analysis of Participation in Standardization: Developing a Calculation Tool

Henk J. de Vries

Erasmus University, The Netherlands

Joey L. Veurink

Erasmus University, The Netherlands

ABSTRACT

Participation in standardization costs time and thus money and additionally there are out of pocket costs. Is it worth this investment? This paper seeks to develop and test a method to calculate cost and benefits of participation. Companies can use such a calculation to prepare a decision whether or not to join, during the process whether or not to continue, and afterwards to evaluate if the overall benefits outweigh the cost. Academic researchers can use the same method to analyze impacts of standardization projects.

INTRODUCTION

Companies as well as standards bodies are interested in the financial benefits of participating in standardization. Many studies report a positive impact of standardization. Tables 1 and 2 provide an overview of such studies. Some examine the impact of individual standards, and others investigate the effects of collections of standards. The overview is incomplete, but we have included overview studies that refer to other literature. Many of the available studies address the macro or sector level rather than the company level, and focus on the impact of standards rather than on the impact of involvement in standards development.

The scarce company level studies on the impact of involvement of companies in standardization are qualitative, or provide a correlation between participation and impact without giving a quantitative mechanism for causality. This paper introduces a novel decision-making tool to assess the feasibility of participating in standardization. To our knowledge, no other studies provide a quantitative method for calculating the costs and benefits of participation in standardization.

DOI: 10.4018/978-1-5225-9273-0.ch021

Table 1. Studies on economic impacts of standards

Macro-Economic Level	Sector Level	Company Level
Blind, 2000 Blind & Jungmittag, 2001; 2002; 2005 Blind, Peterson, & Riillo, 2017 Cebr, 2015 Clougherty & Grajek, 2008 DIN, 2011 Otsuki, Wilson, & Sewadeh, 2001 Swann, 2000; 2010 Temple, Spencer, & Witt, 2005 Temple & Urga, 1997 World Trade Organization, 2005	Bergholz, Weiss, & Lee, 2006 Blind, 2001 Cebr, 2015 De Vries & Verhagen, 2016 Shepherd, 2007 Moenius, 2006	De Koning & de Vries, 2009 ISO, 2012 Manders, 2015 De Vries, Bayramoglu, & van der Wiele, 2012 Psomas & Fotopoulos, 2009 Rusjan & Alic, 2010 Sampaio, Saraiva, & Rodrigues, 2009. Weissinger, 2013

Table 2. Studies on economic impacts of participation in standardization

Macro-Economic Level	Sector Level	Company Level
	Blind, 2002; 2007 DIN 2000; 2011	Blind, 2007 Blind & Mangelsdorf, 2016 De Koning & de Vries, 2009 De Vries, 2006 Schaap & de Vries, 2004 Wakke, Blind, & de Vries, 2015 Wakke, Blind, & Ramel, 2016

Blind, De Vries, and Mangelsdorf (2011) examine the relationship between a firm's approach to open innovation and the decision to participate in standardization alliances. Companies that are active in innovation-related cooperation are more likely to be involved in standardization activities. Involvement allows them to defend their interests, to share knowledge, to ensure that their ideas are incorporated in a standard (Mallard, 2000), to increase 'corporate intelligence' (Bousquet, Fomin, & Drillon, 2009), and to acquire knowledge and anticipate the market. Blind (2006) finds that firms with relatively low R&D investments (less than 4%) are inclined to participate in standardization activities because they are likely to benefit from the information that is acquired by participating, but that firms with relatively high R&D investments (more than 4%) are less inclined to participate because they are afraid of knowledge spill overs. Blind and Mangelsdorf (2016) rank the motives of German manufacturing companies to be involved in standardization. Their findings show that the highest-ranked motive is to design industry-friendly regulation, and that the most important motives relate to influencing standards and to accessing knowledge from other involved stakeholders. Interviews by Riillo (2013) with participants in Luxembourg suggest that the motive of influencing standards is more important for large companies, whereas the motive of accessing knowledge is more applicable to smaller companies. Indeed, cooperation between customers, suppliers, competitors, and research institutions in standardization committees may help firms to obtain knowledge that can be used for the development of new products (Hagedoorn, 1993; Ritter & Gemünden, 2003).

These studies give arguments for participation, but do not give any quantitative evidence of the results of such participation. Blind (2007), Blind and Mangelsdorf (2016), Wakke, Blind, and De Vries (2015), and Wakke, Blind, and Ramel (2016) report a positive correlation between participation in standardization

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/cost-benefit-analysis-of-participation-in-standardization/231199

Related Content

An Empirical Investigation of Decision Making in IT-Related Dilemmas: Impact of Positive and Negative Consequence Information

Chen Zhang, Judith C. Simon and Euntae "Ted" Lee (2021). *Research Anthology on Recent Trends, Tools, and Implications of Computer Programming* (pp. 1671-1690).

www.irma-international.org/chapter/an-empirical-investigation-of-decision-making-in-it-related-dilemmas/261096

The Economics and Econometrics of Global Innovation Index

Badar Alam Iqbal and Mohd Nayyer Rahman (2020). *Disruptive Technology: Concepts, Methodologies, Tools, and Applications* (pp. 1375-1385).

www.irma-international.org/chapter/the-economics-and-econometrics-of-global-innovation-index/231246

Analyses of Evolving Legacy Software into Secure Service-Oriented Software using Scrum and a Visual Model

Sam Chung, Conrado Crompton, Yan Bai, Barbara Endicott-Popovsky, Seung-Ho Baeg and Sangdeok Park (2013). *Agile and Lean Service-Oriented Development: Foundations, Theory, and Practice* (pp. 196-217).

www.irma-international.org/chapter/analyses-evolving-legacy-software-into/70736

MDA-Based Object-Oriented Reverse Engineering

Liliana María Favre (2010). *Model Driven Architecture for Reverse Engineering Technologies: Strategic Directions and System Evolution* (pp. 199-229).

www.irma-international.org/chapter/mda-based-object-oriented-reverse/49184

Effective Mechanisms for Accessing Technology and Innovation Strategies: Why and Who Innovate, How to Innovate?

João P. C. Marques (2020). *Disruptive Technology: Concepts, Methodologies, Tools, and Applications* (pp. 50-74).

www.irma-international.org/chapter/effective-mechanisms-for-accessing-technology-and-innovation-strategies/231180