# Interaction Between Standardisation and Research:
## A Case Study

Tore Hoel, Oslo Metropolitan University, Oslo, Norway

Weiqin Chen, Oslo Metropolitan University, Oslo, Norway

## ABSTRACT

Standards-making is a design practice that relies on input from research and end-users, involving experts that represent diverse stakeholders spread all over the globe. However, the standards-setting culture and formal rules are sometimes at odds with the culture and practice of research. Based on previous research identifying the lack of openness and transparency, and a suboptimal interaction with academic research as issues that could explain a lack of success in a European setting, this article studies how an ongoing international standards project on privacy and data protection policies for learning analytics has interacted with an international academic research community. The results of this study show that establishing feedback loops between standardisation, research, and development is essential in order to produce results. However, the study also shows that in individual projects, internal processes and culture in the standard setting group could be of crucial importance for the outcome.

## KEYWORDS

## 1. INTRODUCTION

Standards' key role in encouraging innovation, improving markets and creating competitive opportunities are strong selling points when explaining the benefits of interfacing with standard bodies (Copras, 2007a, Blind, 2013). In Europe, the launch of the new version of the European Interoperability Framework (EC, 2017c) has connected standards work even stronger to laudable activities like designing and delivering "seamless European public services", "promoting interoperability", and contributing to the "establishment of the Digital Single Market" (EC, 2017d). With the importance assigned to standards one would expect that a lot of resources and manpower were allocated to standards-making. This is not always the case. Many potential standards experts experience barriers to participation, e.g., lack of time, travel budgets, and other resources (Blind, 2006); lack of support from their employers (Blind, 2013), distrust in the process (Hoel, 2014a, 2014b), etc. Lack of participation, however, is only part of the problem, as we do not fully know what contributes to the quality of a standard (Hollins & Hoel, 2010; Sherif, Jakobs, & Egyedi, 2007), and how standards are related to innovation (Blind, 2013).

This paper focuses on a particular challenge of the standards-setting process, namely how interaction between the research and the standardisation communities could be facilitated in order to solicit necessary requirements and ideas for design. This challenge is not new. In 2004 - 2007 the European Commission funded the COPRAS (Co-Operation Platform for Research and Standards) project with the objective to improve the interface between research and standards. The project, run by the major standardisation organisations in Europe (CEN, CENELEC, ETSI, W3C, and The Open Group) found that research projects do not start thinking about standardisation until they are in the final stages of their activities, and then they discover they do not have sufficient resources and time to pass their output through standardisation. On the other side, it was found that the standards bodies do not have mechanisms for addressing the output of research projects (Brusse, 2005). One of the outputs of the COPRAS project was suggestions for guidelines how Information Society Technology (IST) research project should interface with ICT standards organisations, explaining the benefits of standards and standardisation (Copras, 2007a).

The COPRAS research had an organisational perspective, exploring how research and standardisation could work better together through identifying possibilities for cooperation. This paper, on the other side, is written from the perspective of a standards group, with the focus on processes for enhancing quality of the standardisation work by seeking contributions from research and searching for means to make them an active part of design in standard-setting in particular domain. This study adds to the body of knowledge on the interface between research and standardisation in other domains, e.g., see Blind and Gauch's study (2009) of technology transfer in nanotechnology.

Let us first briefly introduce the standards project used as a case in this study before we explain the methods used to explore where new understanding of interaction between research and standardisation is needed in this domain. The project is under the auspices of the sub-committee 36 of the Joint Technical Committee 1 of ISO/IEC (SC36), which in Working Group 8 is developing standards for learning analytics interoperability (LAI). Learning analytics (LA) is a new domain of applications and practices driven by the easy access to data provided by mobile devices and an increasing number of sensors. The aim is to achieve actionable insights from data derived from the full spectrum of learning and teaching activities. By sourcing analytics with data from both within and outside of formal institutional settings, LA has the potential to boost system integration in learning, education and training (LET), bringing both institutions and vendors together. LAI standards are needed to make sure that data can be integrated from different sources and used in a consistent, safe and purposeful way by different systems and stakeholders.

LA is an emerging field with few solutions in full-scale production. LA is part of a dynamic development of Big Data and so-called smart learning environments. Hoel & Mason (forthcoming) have observed that the more these environments use educational big data and technologies that could be classified as smart, the less is to be found in terms of relevant standards or even conceptualisations of standardisation challenges. This gives an incitement to study the relationship between research and standardisation in this field; and it gives standards experts a need to interface extensively with research to gather requirements for their standards work that is inherently anticipatory of nature (Umapathy, Purao, & Bagby, 2011).

The guiding questions for this study are derived from participant concern of being able to develop a standard that not only represents the consensus of the national bodies taking part in the project, but also represents state-of-the-art in research:

- How can a high quality and research-based draft specification be developed within the current formal and informal rules of an ISO standards group?
- What are the areas of concern that need further research in order to come up with suggestions for improvement of the standardisation process in the LET domain?

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