Chapter 1
Creation of an ISO Standard at the Example of Value Stream Management Method

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ABSTRACT

The main objectives of this chapter are to elucidate the necessity of a standardized value stream management (VSM) and to clarify how this standard can effectively increase corporate performance within cross-enterprise supply chain networks (SCNs). VSM is an effective tool to collect, evaluate, and continuously improve product and information flows within companies in a common and standardized manner. The findings of this chapter are not only valid for consistent product and information flows but are representative for the relevance of standards in general. In a globalized economy, standards need to be generally accepted and valid for all countries. Thus, corporate or national standards only have limited impact. The International Standardization Organization (ISO) provides the means to develop, negotiate and communicate standards, which are globally binding. This chapter shares the experience of ISO 22468 standard development within ISO/TC 154 WG7 and proves its applicability by an administrative use case.
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INTRODUCTION

Standards are taking a more and more important role in our daily life. They help to provide consumers with confidence that their products and services are safe, reliable and of appropriate quality. Today, thousands of standards organizations around the world exist, which often endorse each other, build upon each other or compete with each other (Bartleson, 2013). Standards are mainly developed to achieve interoperability referred to technology or information and communication issues (Blind, Pohlisch, Zi, 2018). One standardization organization, which is valid on national and international level, is the standardization body ISO. This is an independent, non-governmental international organization, which associates experts from all over the world. Thus, it is possible to combine and share the global knowledge to develop international standards that support innovation and provide solutions for global challenges (ISO, 2019-1).

The idea of standardization started with obvious things like measures and weights. Nowadays, standards can be found in nearly every component or part of our daily life. Standards on road, toy, workplace, and transportation safety the same as for credit cards, paper sizes, currencies and secure medical packaging are just a few relevant standards in today's world. Regulators and governances count on standards to foster better regulations, by knowing that globally established experts have created the sound basis (ISO, 2019-1). ISO technical committees (TCs), which are groups of experts from different fields and various backgrounds carry out the preparation of international standards and thus ensure a significant quality.

In this chapter, the standardization of VSM is used to elucidate the relevance and necessity of standards nowadays and in the future. An international standard is the highest level of standard in view of effort quality, and impact.

The VSM method was made popular by Rother and Shook (Rother & Shook, 1999) and was used for many years by academia and practitioners to assess manufacturing operations and to distinguish waste from value-adding processes, in order to minimize waste and shorten lead time (Plapper, 2011), (Keyte & Locher, 2004), (Klevers, 2007), (Erlach, 2013), (Brown, Amundson, Badurdeen, 2014). However, over the years a large variety of VSM methods has evolved, tailored to the alleged slightly different use cases of every operation. Most companies operate in Business-to-Business (B2B) supply chain networks, which spreads the value creation across many firms. Often VSM is applied within the plant or inside the company, but the application of this lean tool across company borders is restricted due to different corporate standards. This limits to create a value stream map across the entire SCN, mainly due to problems at the interfaces.

A common standard, which is accepted internationally, would eliminate this type of multiple documentation of the VSM. This common standard represents