

## Chapter 7.20

# E–Business Standardization in the Automotive Sector: Role and Situation of SMEs

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### **ABSTRACT**

Successful cooperation between large manufacturers and their suppliers is a crucial aspect, especially in the automotive industry. Such mutually beneficial cooperation requires at least a certain level of integration and interoperation of the partners' IT and e-business systems. This chapter looks at two approaches in order to achieve this goal: sector-specific harmonization (in the form of electronic marketplaces) and international, committee-based standardization. This chapter shows that SMEs are facing a severe disadvantage in both cases. This is, however, less pronounced in a formal standards setting, in which capabilities of the individual representatives are more important, at least at the working level.

### **INTRODUCTION**

The automotive industry is facing a number of challenges to the established relations among its players. Issues to be addressed include, for instance, shorter product life cycles, increasing cost pressure in stagnant markets, and higher complexity of the embedded electronic systems. In order to meet the associated production requirements, standardization of processes, systems, and data is inevitable. This industry is characterized by vertical integration in terms of the business relationship structures between OEMs<sup>1</sup> and suppliers (Adolphs, 1996; Lamming, 1993). A current trend in manufacturing is that OEMs attempt to cooperate with fewer suppliers but on a worldwide scale. As a result, small and medium-sized suppliers become suppliers to tier 1 or tier 2 suppliers rather than directly to the OEMs.

The use of ICT-related technologies, particularly e-business systems, facilitates the creation of a network of relationships within a supply chain. Yet such interorganizational integration requires interoperability that cannot be achieved without widely agreed upon standards. But who has a say in the standardization process? This already has led to a range of transformations in the structure of the automotive supply chain. Large OEMs have been forced to create networks to replace the existing one-to-one relations with their suppliers, which are typically SMEs<sup>2</sup>. According to a study of Nexolab in 2001, standards were a major headache for SMEs, and 75% of the suppliers saw the lack of standardization as a major obstacle for closer collaboration. Therefore, it might be useful for companies to rethink their standardization strategies.

In many cases, an SME supplier does business with more than one OEM. In this situation, bilateral standardization to improve cooperation between OEMs and suppliers and between different suppliers, respectively, is inefficient. Still, this has been the approach of choice in many cases. However, possible alternatives are available, including sector-specific harmonization (e.g., in the form of an electronic marketplace) and, particularly, international committee-based standardization.

However, the challenges and the pressure for collaboration have led organizations in the automotive sector to become involved in a range of projects by means of interorganizational systems (IOS). Examples include electronic collaboration projects, the integration of engineering processes, and electronic catalogue projects to present product and service data. Such IOSs are adopted not only to achieve operational effectiveness by reducing coordination costs and transaction risks (Kumar & van Dissel, 1996) but also to improve communication and information presentation. Collaboration and integration shift the emphasis from stand-alone initiatives to the development

of standardized and integrated solutions (Koch & Gerst, 2003). In this context, one form of IOS that fulfills the criteria of collaboration and integration is business-to-business/supplier portals that incorporate standardized business processes. Covisint, an e-marketplace founded in 2000 by large OEMs, is a very good example to analyze the standardization process in an industry, which is characterized by a large number of SMEs.

The remainder of the chapter is structured as follows: using the automotive industry as an example, this chapter looks at two approaches toward standardization, both of which involve large companies and SMEs. One approach is based on the use of international standards, and proactive participation in the open standards-setting process by all relevant stakeholders. The alternative comprises a standardized, albeit sector-specific, electronic marketplace. The design and development was pushed by a group of large car manufacturers. It turned out that the situation of SMEs was not very favorable in either case—both processes were largely dominated by the big guys. Nonetheless, the chapter makes some recommendations how this situation may be changed for open standards setting.

## **SOME BACKGROUND**

### **The Automotive Industry**

According to a study by McKinsey (2003), the automotive industry in the next 10 years will be shattered by a third revolution that follows the invention of assembly-line production by Henry Ford and the lean production of Toyota. Customers are expecting better value for the same money, resulting in continuous cost pressure and innovation marathons for OEMs.

This has led to a range of transformations in the automotive supply chain. For example, in order to improve customer satisfaction and to increase

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