

# Chapter 95

## Challenges for Adoption of e-Procurement: An SME Perspective

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### ABSTRACT

*In a society well on its way through a digital revolution, a number of new challenges are encountered, and when participating in electronic business, small- and medium-sized enterprises (SMEs) face specific challenges and issues. In this chapter an analysis of those challenges covering electronic procurement within public and private sectors (B2G, B2B) is provided, including a case study from electronic invoicing. Relevant factors for the use of electronic invoicing for SMEs in Europe are recognized, and requirements for a technical solution are identified. Starting from that, an architecture for the solution is derived. The solution is aligned with the initiatives working on that issue within Europe.*

### INTRODUCTION

SMEs often operate mainly within local business communities and are often dependent on their customers, and are as a result particularly vulnerable to market shifts. In addition, many of the SMEs are poorly equipped to handle the transition to electronic processing today. This adds to the fact that SMEs face additional challenges compared to more resourceful larger enterprises when par-

ticipating in electronic business. However, use of electronic business could facilitate cross-border exchange and offer the SMEs an opportunity to open their market globally, making them less vulnerable.

In order to shed light on the challenges SMEs face when participating in electronic business, an analysis of interoperability issues on legal, organizational, semantic, and technical levels is provided using electronic procurement and electronic invoicing as case studies.

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The analysis of interoperability issues on an legal and organizational levels focuses on reasons why adoption of electronic business has not been more comprehensive, and specifically what challenges SMEs are facing. The study uncovers impacts that adoption of electronic handling has on its users, and attempts to find obstacles SMEs are confronted with. The impacts on both the buyer and the seller individually are analyzed by way of a case study covering electronic invoicing. Adoption of electronic business also impacts the relationships between the involved parties in a number of ways, and to further grasp the challenges and issues that impede comprehensive adoption, those impacts are analyzed. An analysis of organizational obstacles making electronic processing a complex task is also provided to identify the main barriers and factors affecting the willingness, or rather, the reluctance to adopt electronic business among SMEs.

In addition to identifying obstacles and barriers that SMEs face when attempting to participate in electronic business on an organizational level, the chapter aims to shed light on the current market situation. That means to uncover the state of the current market, identifying what is currently being done to address interoperability issues on semantic and technical levels.

That is to say, the main goal of the chapter is to shed light on challenges SMEs face when taking part in electronic business—specifically electronic procurement and electronic invoicing—and on how those challenges are currently being addressed on different levels. The chapter also aims to uncover what is currently being done in Europe to further promote the development and digitalization of commerce from an SME point of view.

## **BACKGROUND**

Hinsen (2010) states that we are halfway through a digital revolution, and although we have already gone through a lot of changes, what lies ahead of

us will be even more challenging. SMEs face specific challenges and issues when participating in electronic business. Breyne (2011) points out that e.g. the plethora of solutions and standards pose a massive hurdle for the SMEs to surmount, but as the SMEs represent more than 99% of European businesses they should not be forgotten.

Recent work has addressed interoperability issues from a semantic point of view, uncovering issues related to standards and formats<sup>1</sup>. This work addresses semantic alignment between participants, and this is reflected in existing and new formats released to the market. Such research, and work done within alignment of vocabularies and grammar within use of formats, largely affects anyone participating in electronic business.

However, not only existing standards and formats need to be taken into consideration. Anyone interested in communicating with other participants of the market has to consider integration with existing infrastructure, and with that, it is necessary to uncover issues related to interaction and transport. Recent work addresses much of such interoperability issues and attempts to align business processes<sup>2</sup>. In addition, projects and action plans are carried out across the globe as steps towards modernization, improvement of the competitiveness and innovation of the market. Such projects and research put the premises and define the framework for infrastructures and standards.

Koch (2009) states that the market is still in a refraction period with much of the needs yet to be identified. Such a market can produce a dynamic environment, almost to the point of a living organism, which adds to the complexity of finding harmony in business processes. In spite of this, whilst some growing pains can be expected when finding ways to adapt to the new environment, those pains can be transformed to gains.

## **What is an SME?**

The definition of SMEs as given in Article 2 of Recommendation 2003/361/EC by the European

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