Chapter 20

Business Document Exchange between Small Companies

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ABSTRACT

This chapter is aimed at presenting a practical approach, and its technological implementation, for enabling small companies to exchange business documents in different formats and languages with minimal impact on their legacy systems and working practices. The proposed solution differs from the general-purpose or theoretical approaches reported in other chapters of this book, as it is intended to focus on the basic interoperability requirements of small companies in their real life. Special attention is spent to show how to define a minimal reference ontology, use it for annotating the data fields in legacy systems, and map it onto existing standards in order to remove the cultural and technical obstacles for small companies to join the global electronic market. These techniques have been studied and prototyped, and are presently validated, by some EU-funded projects.

INTRODUCTION

As a matter of fact, from the global electronic market perspective SMEs do not exist as a unique (uniform) category. On the one side there are well-structured medium-sized companies having skills and resources to optimise their behaviour and play an active role. On the other side there are small companies (roughly speaking, those with less than 50 employees) with few resources and no possibility to divert them from their core business. While the former often lead supply chains and impose

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their digital models, the latter must adapt to the models of their customers and can hardly uptake autonomous ICT and eBusiness solutions.

There are several good reasons to focus the attention of electronic business studies, and the related analysis of interoperability problems, on the category of small companies (Bonfatti & Monari, 2004). Among them it is worth to recall the following:

- **Fundamental role in the European economy.** Small companies overcome in number the 90% of the European companies and account for more than 60% of employment and GDP. They are the solid platform of the European economic fabric and, obviously, there is no electronic market without their active and massive participation.

- **Belonging to all the industrial sectors.** Even in traditional sectors, such as building or footwear, it is possible to identify larger companies that are very well positioned in the electronic market and smaller ones that, although exporting most of their production, are not equipped with adequate communication and collaboration supports.

- **Neglected by principal ICT developers.** Small companies are often forgotten by the mainstream of ICT innovation because of their limited budget. Solutions such as SAP Business One or MS Navision represent the upper bound of what they can adopt and, being closed worlds, introduce themselves further interoperability problems.

- **Showing limited interest to standardisation.** Adopting standards in knowledge representation and exchange can facilitate communication and collaboration. However it implies higher costs and a substantial revision of enterprise and business processes, which are not really understandable and affordable to most small companies.

A major challenge for many small companies in the next few years is the need to become credible actors in the electronic market, or disappear. While in the traditional market they are used to relying upon steady relations with local partners, in the expanding electronic market they risk to be left aside unless they extend their knowledge base and adopt advanced collaboration means. This calls for gaining visibility with respect to potential customers, developing the ability to involve suppliers and partners and exchange knowledge with them, and qualifying themselves to collaborate with companies belonging to different sectors and established in different countries.

The vision the Authors have is for a composite eBusiness world where small companies are finally put in condition to establish and run frictionless dynamic collaborations with no technological or cultural restraints (Abel et al., 2004; SEEMSEED Consortium, 2006). To this purpose they must be enabled to easily access such an eBusiness space and leave it if no more convenient, save their previous investments in ICT, and be properly supported by tailored business models and suited ICT functions. These ICT functions have likely to take the form of an operational environment hiding the complexity of the underlying technology and be provided to small companies by their reference intermediary organisation.

This viewpoint and its technological consequences are studied, prototyped, experimented and validated by a number of recent projects. Four of them, partially funded by the European Commission, were and are co-promoted and participated by the Authors of this chapter:

- **FP6-IST-502512 SEEMSEED “Study, evaluate and explore in the domain of the single European electronic market”.** Started in January 2004, this project was aimed at meeting the requests from the European Commission to carry out a detailed analysis of the cultural, organisational, legal and technological framework
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