Chapter I
An Integrated View of E-Business and the Underlying ICT Infrastructure

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ABSTRACT

The chapter argues that any distinction between "e-business" and "infrastructure" is artificial. It shows that the lower-level techncial standards that make up the ICT infrastructure exert a direct impact on the e-business standards and systems that are using it. Accordingly, any assessment of the effect of standards on e-business has to take into account all layers of standards.

1 INTRODUCTION

The analysis of standardisation in the ICT area is commonly segmented to study either demand or supply-side phenomena. Based on issues more often related to disciplinary interests (most often economics) than to current concerns of industry, studies tend to focus on either the initiation and elaboration of standards, or on conditions for their adoption and (much less often) their implementation. This book starts from the observation that this segmented focus significantly hampers the broader understanding of how standards interact with the networked organisations. The book therefore combines a study of supply and demand-side factors that affect the relevance and the quality of standards – and, thus, influence their impact – for networked organisations.

The market for electronic business solutions is vast and heterogeneous. E-business solutions have the potential both to affect the organisation of many existing markets but also have the scope to open up significant vistas for new economic activities (as the literature has been at pains to point out). In this setting it is therefore clear that characteristics rooted in the changing 'user environments' can prime demand for standards, can shape their relevance, and can therefore condition their potential impacts. It is equally clear that factors related to the way these standards are developed will affect their relevance and their ultimate impacts for existing markets as well as for emerging markets (perhaps unforeseen by the original sponsors of the individual standard).

In this context, this book addresses the dynamic between factors that condition demand and those that condition the supply for standard. The ultimate aim is to provide the basis on which to better understand how e-business standards might be better articulated to the changing needs of networked organisations. The book is concerned with the interaction of standards with their environments. In light of this interaction the focus is especially directed to the changing landscape of Standards Setting Bodies (SSBs), including their ability to adapt to, and potentially to influence these market environments.

1.1 Motivation

During the last 20 years, the business world has undergone significant changes. For some organisations, doing business globally has become critical to their survival, and others discover new opportunities by focusing their business in a local setting. In this process of change, Information and Communication Technologies (ICT) are playing a significant role both enabling and triggering the re-organisation of business activities. ICT became ubiquitous, invading all aspects of business domain.

The Internet has considerably accelerated the diffusion of inter-organisational networks, and has intensified the collaboration between organisations. Regardless of company size and type of business, today virtually all organisation's ICT systems are interconnected. In such an increasingly networked world, ICT and e-business standards aim to ensure interoperability between both different IT systems within and between organisations. As ICT-enabled collaboration has becomes a decisive tool in the struggle for competitive advantage, interoperability within and between organisations has become strategic necessity in all industries. To communicate and collaborate, interoperability is absolutely essential. However, seamless communication and integration of data and information is not possible in the absence of common standards – standards and the standardisation process have gained strategic significance.

Throughout the past twenty years there have also been considerable changes in the world of standards setting. Until the mid 80s, standardisation was virtually exclusively dominated by the formal Standards Developing Organisations (SDOs) such as ISO and CEN. However, in the late 1980s the slow and highly bureaucratic processes that then characterised formal SDOs was seen as inadequate to deal with the challenges that resulted from the increasingly shorter life cycles of ICT products. As a result, the number private standards consortia saw a massive increase during the 1990s, when in less than a decade more than 140 ICT standards consortia were created.

The emergence of such a huge number of SSBs, often with overlapping coverage, caused a fragmentation of the market for standards development. This fragmentation raised the problem of how to co-ordinate the organisations involved in the process. The economic literature has modelled extensively the co-ordination strategies of the players, which represent alternative forms of standards setting (i.e. market versus committee

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