Preface

Analyses of ICT and e-business standardisation typically focus on phenomena either related to the demand for, or the supply of, standards. Based more on traditional scientific mono-disciplinary interests than industry (and research) concerns, studies tend to focus on either the initiation and elaboration of standards, or on issues relating to their subsequent adoption and implementation. This book starts from the observation that this segmented approach significantly hampers the broader understanding of how standards

- Are shaped by the environment from which they emerge,
- Interact with the environment within which they are to be deployed.

The book, therefore, integrates studies of supply and demand-side factors that affect the relevance and the quality of standards, and thus affect the impact they have. In this context, the book also addresses the dynamics between factors that condition demand for, and those that condition the supply of standards.

The ultimate aim is to provide the basis on which to better understand how ICT and e-business standards might be better articulated to the changing needs of networked organisations. The book, therefore, addresses, on the one hand, the issues that relate to the production of adequate standards. On the other hand, it is concerned with the interaction of standards with their broader environment during implementation and use.

This book emerged from the NO-REST (Networked Organisations – Research into STandardisation) project that was undertaken in the context of the 6 European Framework Programme for Research and Technological Development. In fact, documenting this project's findings is a core motivation behind the book. Accordingly, the majority of chapters reflect the findings and views of this project. Specifically, these include Chapters I – VIII. They are complemented by another six chapters that discuss various related aspects.

Overall, the NO-REST project investigated the applicability and dynamics of standards in the e-business and e-government sectors, and developed guidelines for tools for the assessment of their performance, and of the impact they have on networked organisations.

To this end, the project evaluated the various standards development platforms, examined how implementations affect standards and interoperability, and did a re-active performance analysis of standards as well as a pro-active integrated impact assessment. It also looked at the application of standards, and analysed how standards – and their implementations – are subject to change incurred by the environment within which they are implemented. The project devised an analytical framework for a causal model of such changes.

No-Rest also looked at the various standards setting organisations, with a focus on how they react to – and influence – the dynamics of the environment within which they work. This included an analysis of the relation between the 'credibility' of a standards setting organisation, i.e., to which extent does the origin of a standard influence its viability in the market place. No-Rest then established if, and how, a standard's origin affects its performance, and set up guidelines helping those who wish to create a standard decide which standards setting organisation to select.

However, no project is an island … Therefore, in this book No-Rest's findings are complemented by insights from other authors, that look at specific aspects surrounding the link between supply of, and demand for, standards.

And now - over to the chapters.

Section I, '*Introduction*' comprises only one chapter. In this first chapter, entitled '*An Integrated View of E-Business and the Underlying ICT Infrastructure*', Martina Gerst, Eric Iversen, and Kai Jakobs argue that e-business systems cannot be considered independent form the ICT system into which they are imbedded, and whose services they use. This holds specifically for the underlying communication network, which is why these networks are also specifically targeted by individual chapters.

The three chapters of **Section II**, '*E-Business Standards and Business Models*', provide insights into the links that exit between standards and companies' business models.

In Chapter II, entitled '*The Demand for E-Government Standards*', Knut Blind and Stephan Gauch argue that the rather complex organisational structure of governmental organisations is the most important driving force for developing e-government standards. The chapter looks at a number of ongoing initiatives in this domain, and identifies a number of issues that still need to be resolved.

Chapter III, by Knut Blind, is entitled '*A Taxonomy of Service Standards and a Modification for E-Business*'. Through a survey among European service companies it aims to find out in which service-related categories service standards are implemented. A taxonomy of service standards is developed that comprises five clusters. The analysis of the sub-sample of companies active in e-commerce, however, reveals significant differences that reflect their special needs caused by the distance to their customers.

'*Business Models and the Dynamics of Supply and Demand for Standards*' is the title of Chapter IV. Here, Richard Hawkins examines the structural relationship of various stakeholder groups to standardisation, described both in terms of how different stakeholders demand and acquire standards and in terms of their corresponding motivations and/or capabilities to influence the standardisation process.

Section III, '*Successful Standards Development*' offers another three chapters that discuss the development process of standards from the point of view of those who would like to either pro-actively contribute to it, or would like to implement its outcome.

Chapter V, by Ian Graham et al., is entitled '*Emergence of Standardisation Processes: Linkage with Users*'. Looking at the standardisation process for RFID technology, they find that the engagement of the large majority of end users in standards development is limited. This attitude is traced back to several reasons, including the facts that RFID is still an immature technology, most of the prospective RFID users are too small to consider themselves as being able to influence standardisation, and that RFID technologies are not used to support day-to-day business.

In Chapter VI, entitled '*Perceived Relation between ICT Standards' Sources and their Success in the Market*', Kai Jakobs argues that the still widely held (especially by policy makers in Europe) perception that 'formal' standards bodies are somehow 'superior' to consortia is in urgent need of a revision. For those who want to set standards, the choice is not the least based on this characteristic. Rather, a standards body's characteristics need to be compatible with a company's strategy and its business model.

Chapter VII, '*How to Select the Best Platform for ICT Standards Development*', by Kai Jakobs and Jan Kritzner, aims to provide the information that potential standards-setters should consider when selecting a standards setting body (SSB). It proposes sets of attributes of both standards users and SSBs. The degree to which these attributes match can be taken as an indicator of an SSB's suitability for the task at hand.

So far, the chapters reported findings from the No-Rest project. The five chapters that make up **Section IV** '*Case Studies*', provide complementing case studies.

'*The Shaping of the IEEE 802.11 Standard: The Role of the Innovating Firm in the Case of Wi-Fi*' is the title of Chapter VIII, co-authored by W. Lemstra and V. Hayes. They explore and describe the role of the innovating firm in relation to the standards making process of WLANs. In particular, they focus of the link between NCR and its corporate successors in the creation of the IEEE 802.11 standard. Their focus is the leadership role assumed by NCR for initiation and creation of an open standard for Wireless-LANs.

Chapter IX is entitled '*The Evolution of e.Business: Can Technology Supply Meet the Full Business Demand?*' In this chapter, Tom McGuffog observes – form an industry perspective – that the supply of e-business technology has been outstripping the effective demand for such capability for some time. He notes that e-business messages are to a value chain partner has always been to trigger a specific reaction on time; the application of new electronic technologies must always support that demand by enhancing speed, certainty safety, security and low total cost.

Chapter X, by Mingzhi Li and Kai Reimers, is entitled '*China's Practice of Implementing a 3G Mobile Telecommunications Standard: A Transaction Costs Perspective*'. It analyses and evaluates the Chinese government's 3G policy of supporting the creation and implementation of the country's indigenous TD-SCDMA standard. On the supply side, the addition of a new standard has enriched choices available on the 3G mobile telecommunications market; however, on the demand side, the government had to force operators to adopt this standard due to their lack of interest in the new standard.

The purpose of Chapter XI, entitled '*International Collaborative Framework between European and Japanese Standard Consortia: The Case of Automotive LAN Protocol*', and written by Akio Tokuda, is to examine the collaborative framework for the standardisation of the automotive LAN protocol known as 'FlexRay'. This framework has been established between European and Japanese consortia in 2006. The chapter focuses on the contribution of the Japanese standards consortium to the drafting of the original conformance test specifications.

Chapter XII, by Tineke Egyedi, is entitled '*Between Supply and Demand: Coping with the Impact of Standards Change*'. Here, she argues that the occurrence of change in ICT/e-business standards is caused by an interplay of supply- and demand-side factors. On the latter side, we find, for example, evolving user requirements, new technological possibilities. Regarding the former, we may find that problems with the scope of a standard, and its implementation process, as contributing factors.

The one chapter of **Section V**, '*Policy Issues*' looks at some relations between governments' and standards. In Chapter XIII, '*Open Standards and Government Policy*', Mogens Kühn Pedersen, Vladislav V. Fomin, and Henk J. de Vries, find that today governments are disadvantaged participants in standardisation due to a range of factors. However, they argue that the powers of globalisation should motivate governments to opt for select positions and interventions in ICT/e-business standards setting.

Finally, we've also included four additional chapters in **Section VI**, '*Additional Readings*'. They discuss some interesting aspects complementing the major thrust of the book, thus giving the reader a fuller picture of what ICT standards research encompasses.

Chapter XIV, by Ioannis P. Chochliouros et al., entitled '*Developing Measures and Standards for the European Electronic Signatures Market*' examines the role of standards setting activities for the development of an 'open' European (virtual) market based on the effective usage of e-signatures.

Esther Ruiz Ben is the author of Chapter XV, entitled '*Quality Standardization Patterns in ICT' Offshore*'. This chapter give an overview of the development of quality standards related to offshore projects, focusing particularly on recent practices in Europe.

In Chapter XVI, Manuel Mora et al. give '*An Overview of Models and Standards of Processes in the SE, SwE, and IS Disciplines*'. They develop a descriptive-conceptual overview of the main models and standards of processes in the systems engineering, software engineering, and information systems disciplines.

The last, but hopefully not least, Chapter XVII is entitled '*E-Business Standardization in the Automotive Sector: Role and Situation of SMEs*'. Here, Martina Gerst and Kai Jakobs show how SMEs are facing a severe disadvantage in both sector-specific harmonisation and international, committee-based standardisation.

I hope that the various chapters, and indeed the book as a whole, will provide thought-provoking insights into the relations that exist, or may be assumed, between the supply of ICT/e-business standards and the demand for them. Perhaps some will even find new topics for their own future research here

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