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# Interoperability: Empirical Evidence, Policy Initiatives and Research Challenges

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„Informationsgesellschaft und Wettbewerb“

Interoperabilität: Innovationsschutz versus Wettbewerb?

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# Outline of the Talk

- Introduction
- Definitions
- Empirical Evidence
  - Interoperability in eBusiness
  - Interoperability in Software
- Policy Initiatives and Recommendations
- Research Challenges



# Introduction

- Interoperability gains further importance due to
  - globalisation of the information and communication technologies, systems and services especially due to strong growth of Asian players
  - further convergence of originally different information and communication technologies, systems and services
  - further acceleration of technological speed
- Increasing challenges
  - restricted incentives to realise interoperability from the perspective of technology, systems and services providers because of competition strategies and increasing use of IPRs, especially patents
  - insufficient capacity to enforce interoperability from the user side due to insufficient technological capacity and market power
- Necessity of policy initiatives



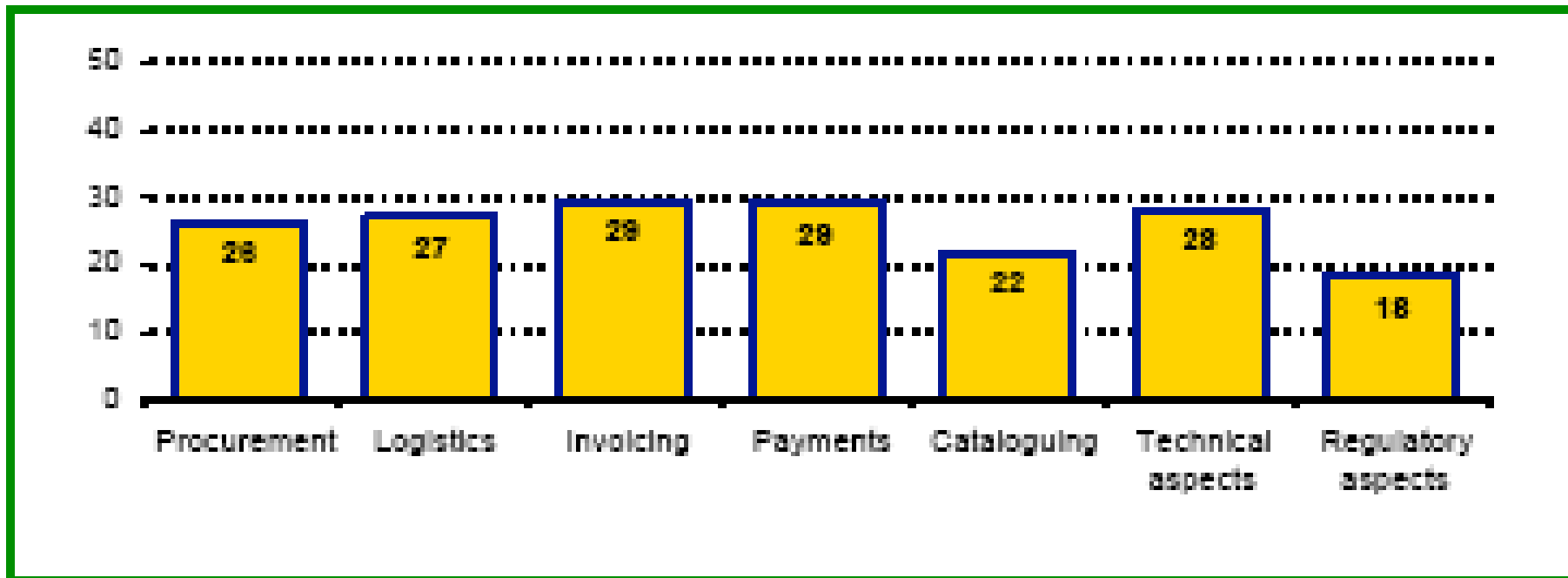
# Definition of Interoperability

- CEN Report (CR 14300:1999)
  - *a state which exists between two application entities when, with regard to a specific task, one application entity can accept data from the other and perform that task in an appropriate and satisfactory manner without the need for extra operator intervention*
- IEEE and ISO
  - *the ability of two or more systems to exchange data, and to mutually use the information that has been exchanged*
- IDAbc
  - *the ability of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable the sharing of information and knowledge.*
- Miller
  - *the ongoing process of ensuring that the systems, procedures and culture of an organisation are managed in such a way as to maximise opportunities for exchange and re-use of information, whether internally or externally*

Source: The European e-Business Report 2006/07 edition



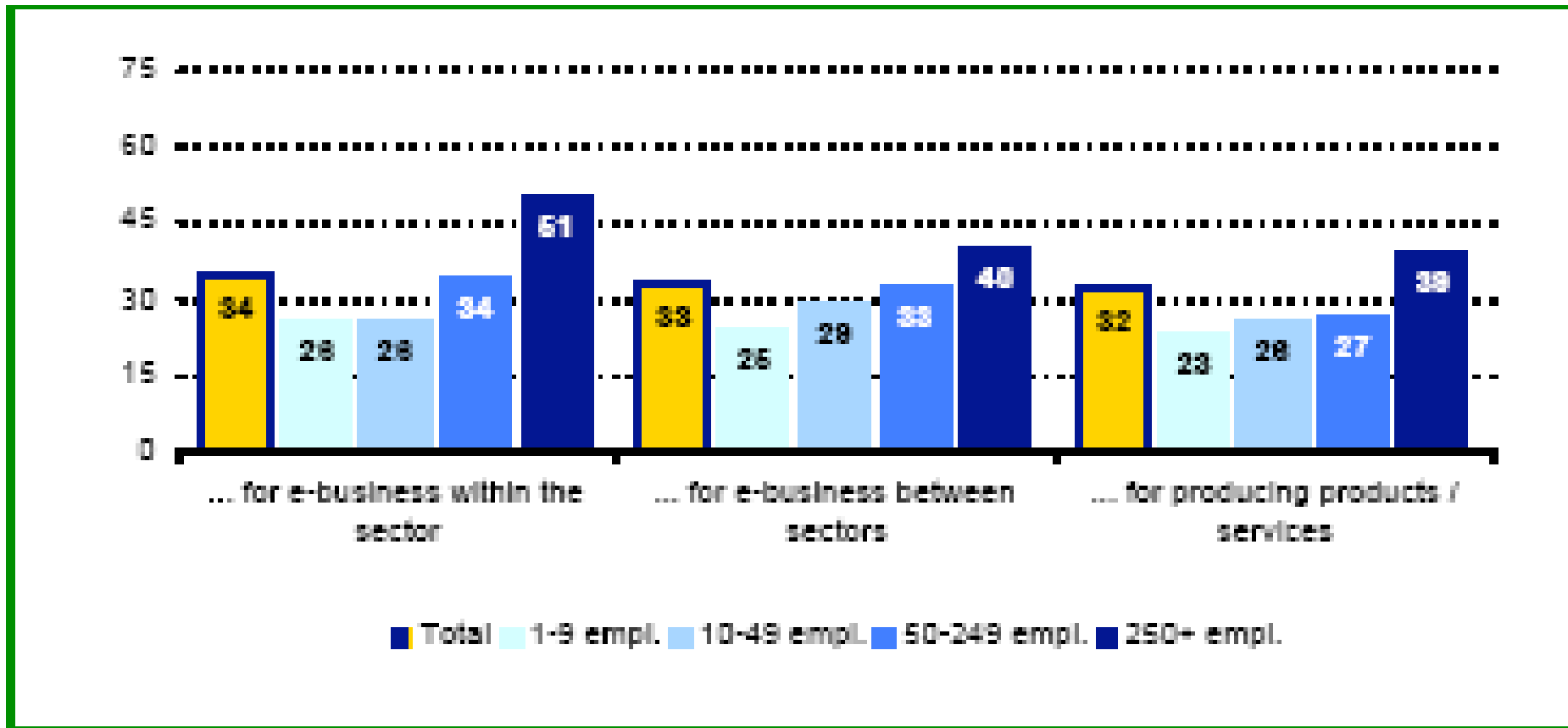
## Problems due to a lack of interoperability: percentage of companies experiencing difficulties in ...



Source: *e-Business W@tch* (Survey 2006)



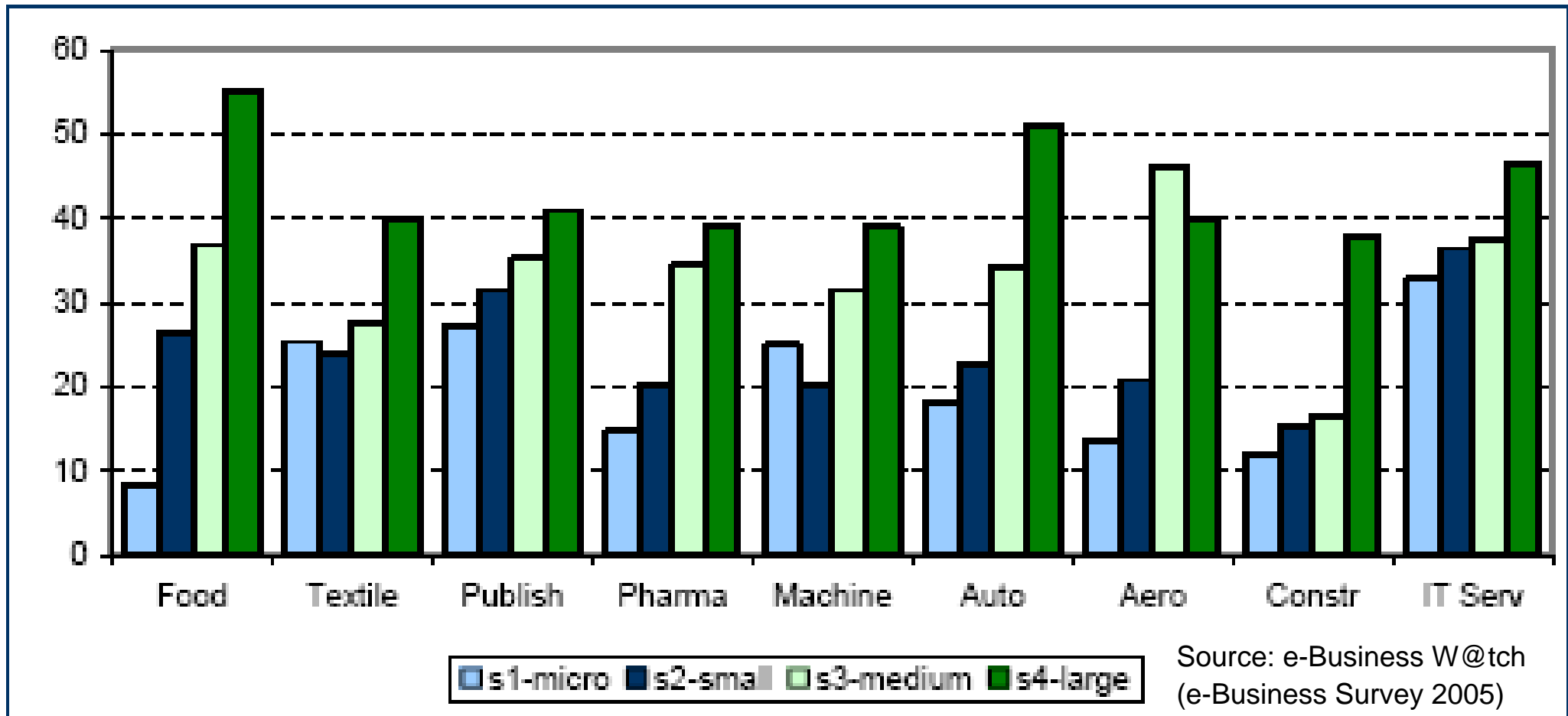
## Perceived importance of interoperability: percentage of companies saying that interoperability is critical ...



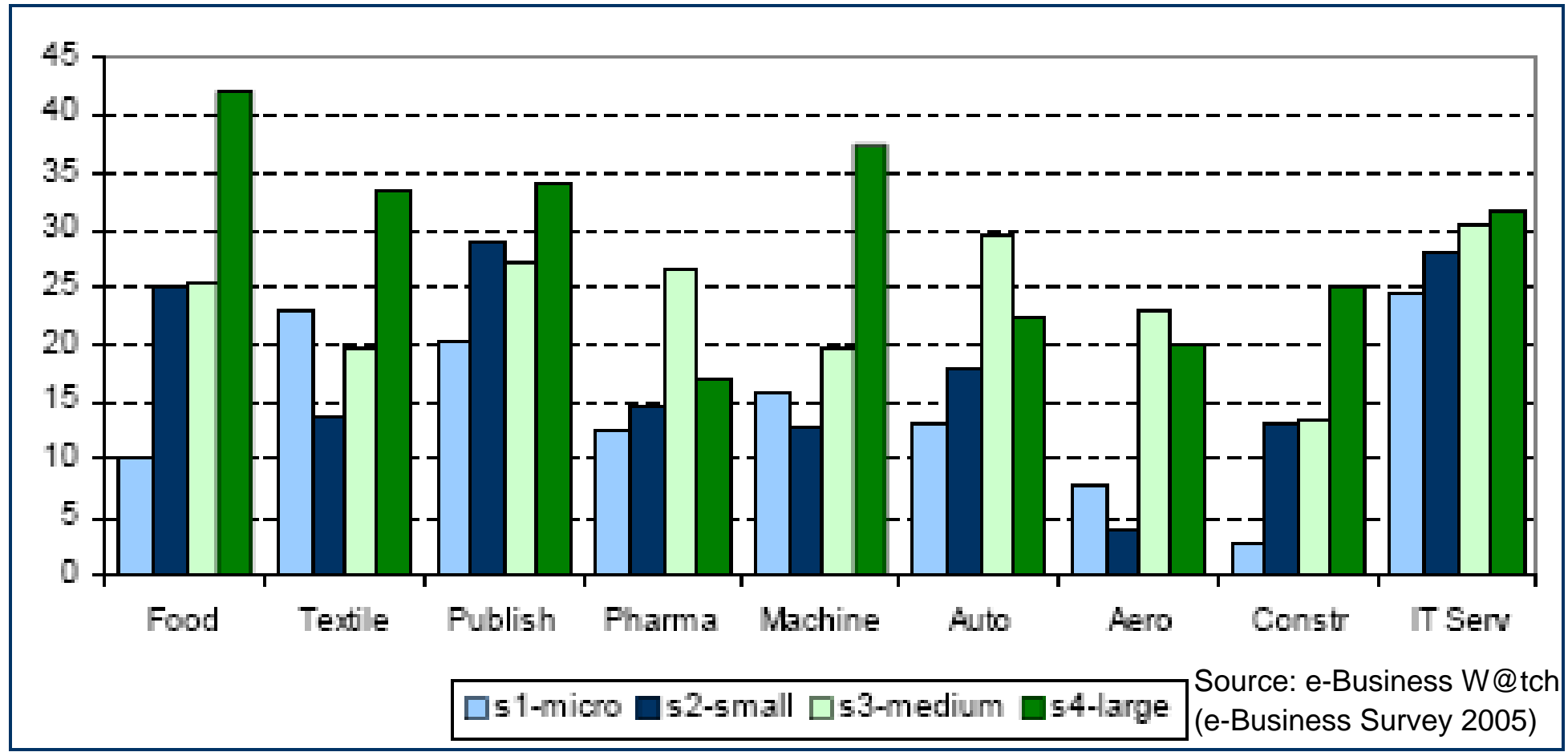
Source: *e-Business W@tch* (Survey 2006)



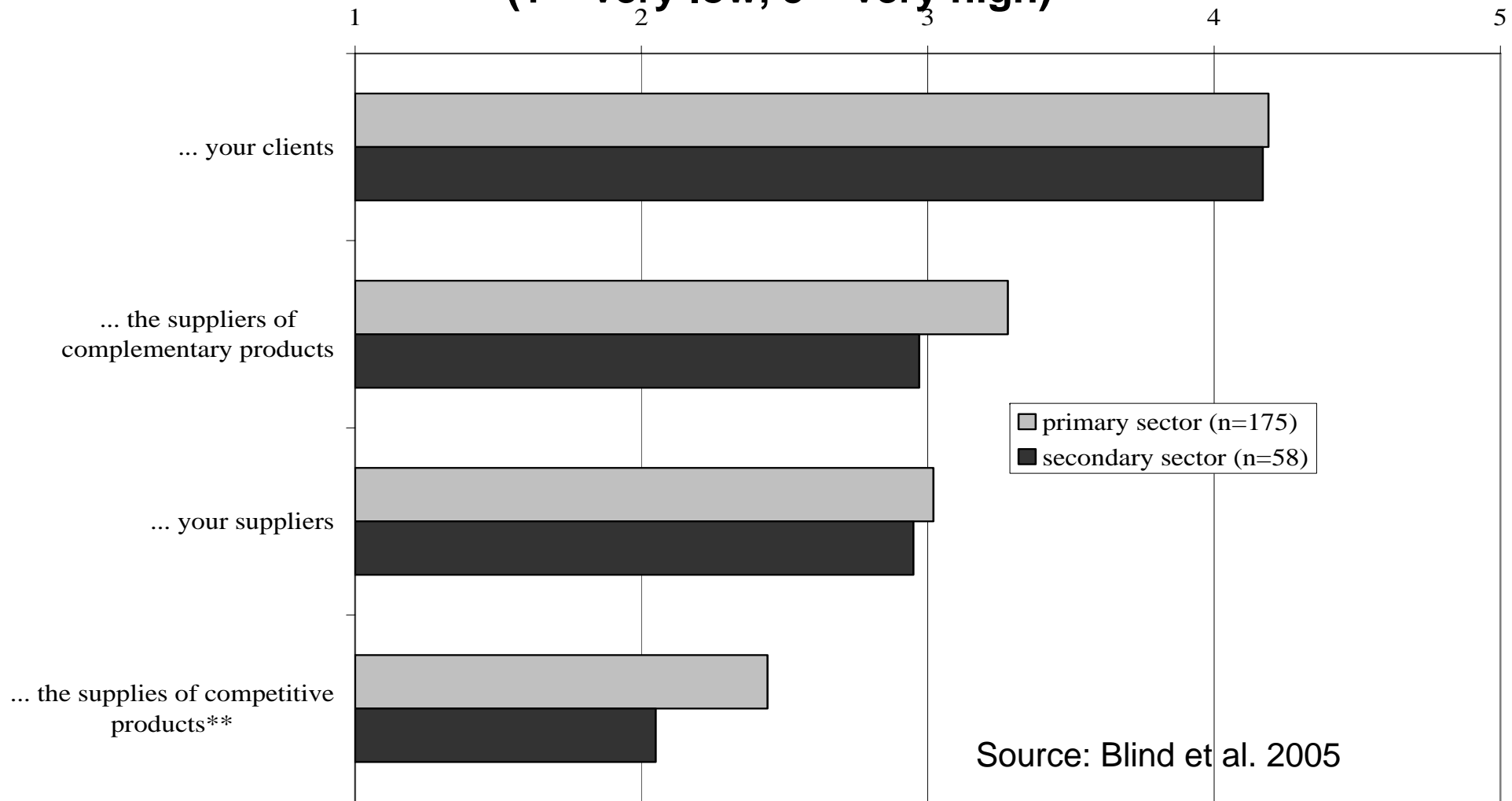
# Is interoperability within your sector critical for your e-business?



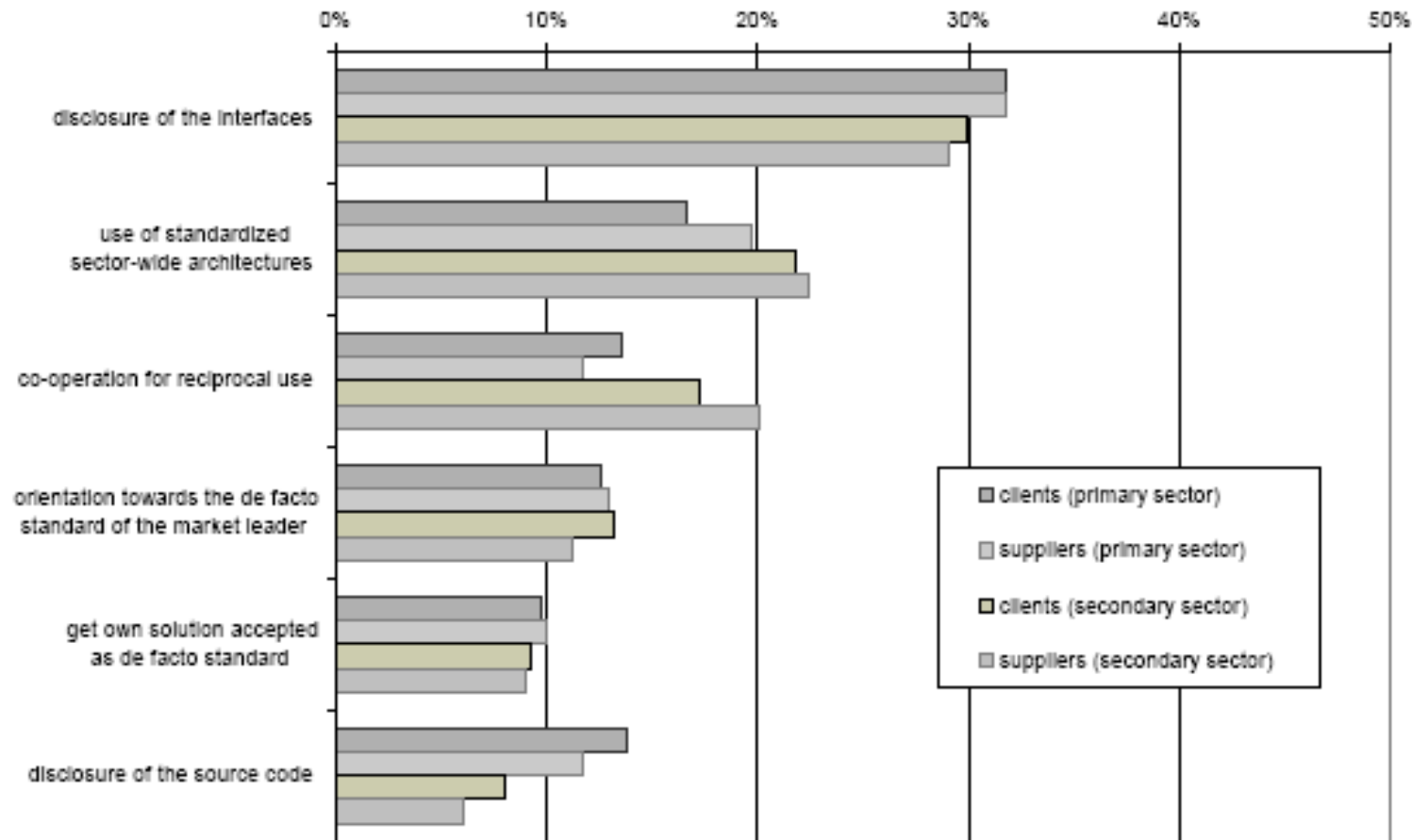
# Is interoperability with companies in other sectors critical for your e-business?



# Importance of interoperability with software of various actor groups (1 = very low, 5 = very high)



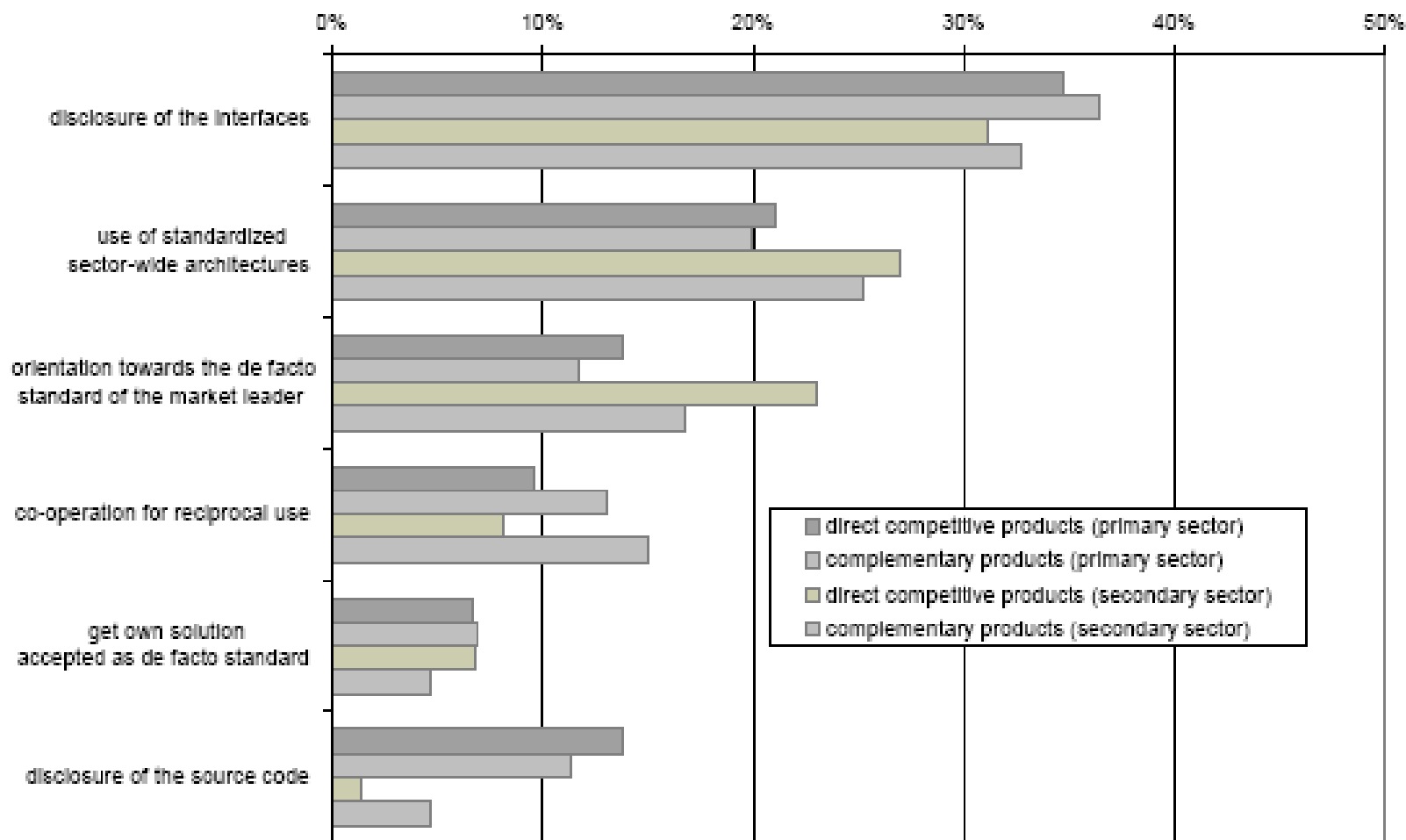
# Securing interoperability to clients and suppliers



Source: Blind et al. 2005



# Securing interoperability with competitive and complementary products



Source: Blind et al. 2005



# European Interoperability Initiatives

Both CEN and ETSI have groups focused on interoperability. To a first approximation

- CEN/ISSS Workshop eBIF40 (e-Business Interoperability Forum) is a strategic policy group which addresses business interoperability issues. CEN/ISSS eBES (e-business Board for European Standardisation) Workshop, the "European Entry point" for the UNECE/ CEFAC electronic business standardisation process, produces consensus prestandards. The two groups are complementary and compatible.
- ETSI via its Interoperability PlugTests and its recent focused conferences on interoperability is geared to address the technical issues.

Source: Special Report (September 2005) e-Business Interoperability and Standards - A Cross-Sector Perspective and Outlook



# Research Challenges

- Despite several European research projects funded under the 6th Framework Programme (like ATHENA and INTEROP),
- lack of economic and legal research covering the relationship
  - between interoperability and competition
  - between interoperability and IPR
  - between regulation and standardisation
- especially since policy initiatives cover mainly technical and business aspects and recent policy discussion address
  - the role of IPR in ICT standardisation
  - the role of consortia standards in the regulatory framework and public procurement processes, and
  - standardisation as an instrument of the Lead Market Initiative

