European Commission
Enterprise and Industry

ICT and e-Business for an Innovative and Sustainable Economy

Summary of the 6th Sectoral e-Business Watch Conference 2009

29 October 2009
Hotel Bloom, rue Royale 250, 1210 Brussels, Belgium

This document summarises the results and discussions of the 6th Sectoral e-Business Watch Conference, held on 29 October 2009 in Brussels.

The conference was organised by empirica GmbH in cooperation with the European Commission, DG Enterprise and Industry, under the Sectoral e-Business Watch Framework Contract.

All presentations are available at the conference website at http://www.ebusiness-watch.org/conference2009

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1 Conference summary

Background

There is much hope that information and communications technology (ICT) has a high potential to increase energy efficiency and reduce greenhouse gas (GHG) emissions. In this way, ICT are a key enabling technology for a sustainable economy. This is reflected in the renewed Lisbon objectives and the industrial policy of DG Enterprise and Industry. Therefore, DG Enterprise and Industry is aiming to foster the widespread uptake of ICT in business, in order to support the European Union's goals towards sustainable growth, such as reducing CO_2 emissions by 20% below 1990 levels by 2020.

The Sectoral e-Business Watch studies of 2009 have focused on the use, potential and impact of ICT in energy-intensive industries and in the energy industry itself. This conference was held to present the study results to stakeholders from these sectors, policy makers, researchers and representatives of the ICT industry that provides the solutions needed to achieve the sustainability objectives. In the morning track, empirical evidence about the potential of ICT was presented. The afternoon track discussed which policy approaches are needed to exploit this potential.

Conclusions

The studies presented and discussed at the conference confirm the enabling role of ICT for innovation. In surveys conducted by the e-Business Watch in the energy supply industry and in the glass, ceramics and cement industry, the vast majority of innovating companies in both industries stated that ICT played a crucial role for innovation. This confirms that the energy supply industry is undergoing a profound change towards the “intelligent utility”.

The e-Business Watch studies also suggest a significant link between ICT use and greenhouse gas emissions intensity. An econometric analysis found evidence for a positive impact of ICT emissions intensity in energy-intensive industries in Europe. Company case studies from these industries illustrate and substantiate these findings. In particular, intelligent transportation systems promise a significant potential to reduce greenhouse gas emissions in road transport.

The Sectoral e-Business Watch also points at important issues for industrial policy, which may be related to supporting ICT-producing industries as well as ICT adoption in ICT-using industries. Research, development and innovation are crucial for Europe’s competitiveness, commercialisation of new products and services in particular.

Participation

The conference was attended by approximately 80 participants (see tables), mostly policy makers (at the European, national and regional levels), industry representatives (from federations, ICT service providers or ICT using companies), researchers (notably economists), business advisors and consultants. Attendance was somewhat lower than in 2008, when the conference was held as a 1.5-days event with a larger thematic scope, thus targeting a broader community.

By background	2009		2008		2007	
	No.	%*	No.	%*	No.	%*
Policy	24	30%	23	22%	24	25%
Industry**	25	32%	21	20%	28	29%
Research	13	16%	34	33%	17	17%
Consulting	9	11%	21	20%	20	20%
Other	8	10%	4	4%	9	9%
TOTAL	**79**	**100%**	**103**	**100%**	**98**	**100%**

** percentages may not add up to 100% because of rounding*

*** includes industry federations, associations and private sector companies*

By country	2009		2008		2007	
	No.	%*	No.	%*	No.	%*
Belgium / EU	36	46%	41	40%	46	47%
Germany	9	11%	12	12%	6	6%
UK + Ireland	2	3%	12	12%	12	12%
Netherlands	5	6%	12	12%	5	5%
Italy	11	14%	6	6%	3	3%
Spain, Portugal	4	5%	5	5%	2	2%
France	4	5%	4	4%	3	3%
Nordic (DK, SE, FI, NO)	3	4%	3	3%	8	8%
Other Europe	3	4%	8	8%	11	11%
Non-Europe	2	3%	0	0%	2	2%
TOTAL	**79**	**100%**	**103**	**100%**	**98**	**100%***

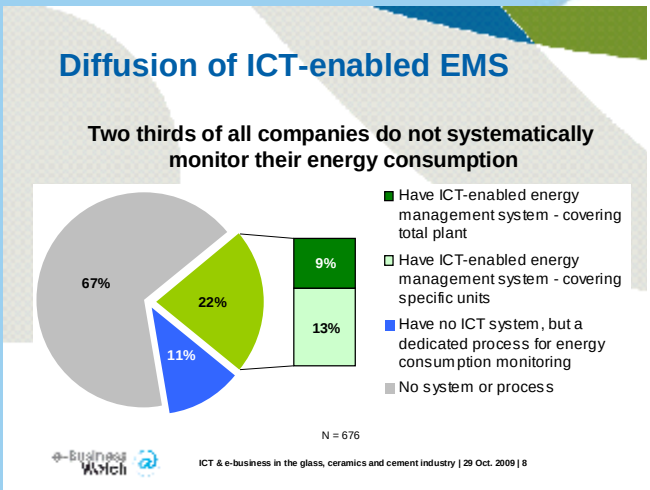
2 Presentations and main discussion points

2.1 Opening

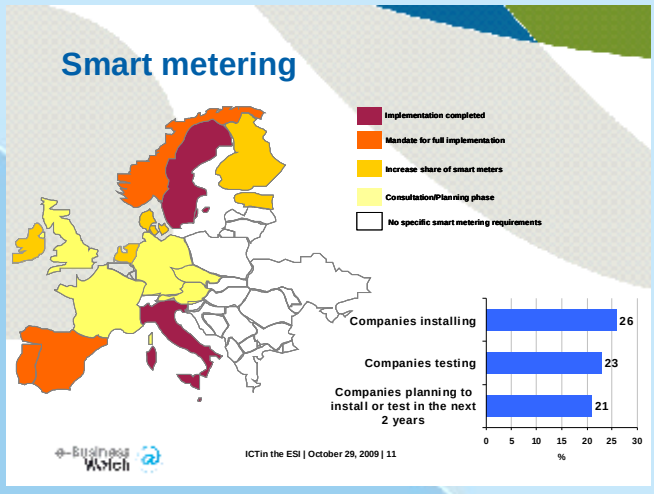
Hasan Alkas, Programme Manager of the Sectoral e-Business Watch at the European Commission's Directorate-General Enterprise and Industry, welcomed the conference participants. He pointed out the theme of this year's e-Business Watch conference is different from previous years. This reflects that the work programme of 2009 brought an important change and innovation. A good deal of e-Business Watch research in 2009 focuses on the specific potential of ICT as an enabling technology for sustainable economic activity. The key words in this context are "energy efficiency" and "greenhouse gas emissions". A second choice was to focus this year on the energy sector itself and on energy-intensive sectors such as the manufacture of chemicals, metals, glass, ceramics, cement or paper, and in the transport sector. The SeBW also conducted a study dedicated to ICT-related industrial policy itself because the need to design effective and innovative policies has been increasing.

2.2 1st morning session: ICT & contribution to energy efficiency

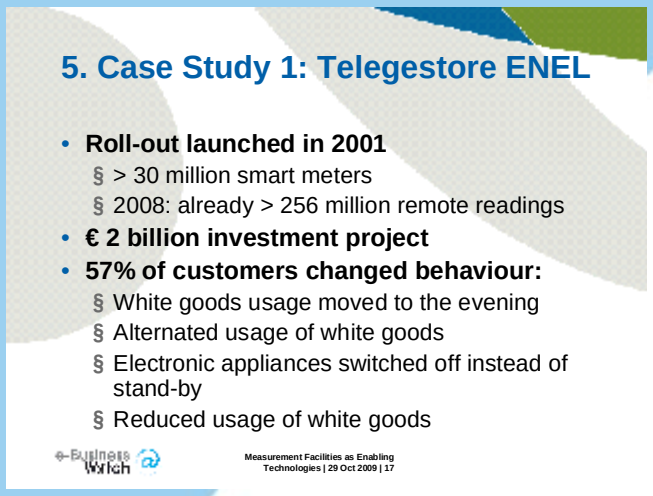
This session was chaired by **Colette Maloney**, Head of Unit H.4 "ICT for Sustainable Growth" of the European Commission's DG Information Society and Media.



Hannes Selhofer (empirica GmbH) presented results of a survey on the use of ICT in the glass, ceramics and cement industry, focusing on the use of ICT to control energy use and possibly improve the efficiency. He demonstrated that energy management systems are not yet widely adopted in this energy-intensive-sector (only 22% of companies use ICT to control their energy consumption patterns). The sector has already made enormous efforts to improve energy efficiency through innovation in production processes; there are controversial opinions about the scope of the remaining potential.
The study indicates that the main potential of ICT-systems is to increase the transparency (and, if needed, reporting) of energy consumption levels, and the quality and safety assurance.



Roberta Bigliani (IDC Energy Insights) presented results of the SeBW study on ICT and e-business in the energy supply industry. She highlighted that the industry was currently undergoing a significant transformation process, and concluded that this would not be possible without ICT, as ICT is embedded in all systems. Prominent issues in this context are smart metering, smart grids, demand management and intelligent power plants. She argued that the transition towards a more climate-friendly energy sector would be supported by a range of ICT solutions that respond to changing regulatory, safety, and security requirements, while enhancing value chain visibility and ensuring continuity of operations. The actual diffusion of ICT solutions for monitoring and reducing the environmental impact was still low, however.



Reinhard Madlener (RWTH Aachen University, Professor of Energy Economics and Management) elaborated about a special study for the SeBW dealing with “measurement facilities as enabling technologies for smart electricity grids in Europe”. In a case study about smart meter role-out by the Italian ENEL company, his team found that 57% of the customers changed their behaviour. For example, use of household devices was reduced or moved to the evening, and electronic appliances were switched off instead of stand-by mode. He concluded that smart grids and smart meters create a rising need for information and communication between different nodes. Furthermore, standards are needed for further investments, and new business models are becoming necessary or possible.

Discussion points

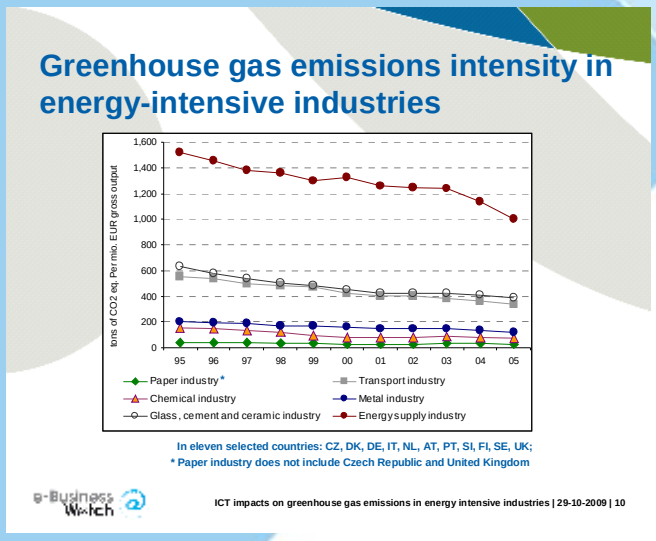
In discussing the two presentations, **Miguel Sánchez Fornié**, Chairman of the European Utilities Telecom Council’s Board of Directors, stressed that the customer needs to be put at the centre when developing smart grids and smart metering solutions. The objective should be to maximise customer value and not to minimise electricity cost. He also said that the move towards smart energy supply systems will be a “revolution by evolution”.

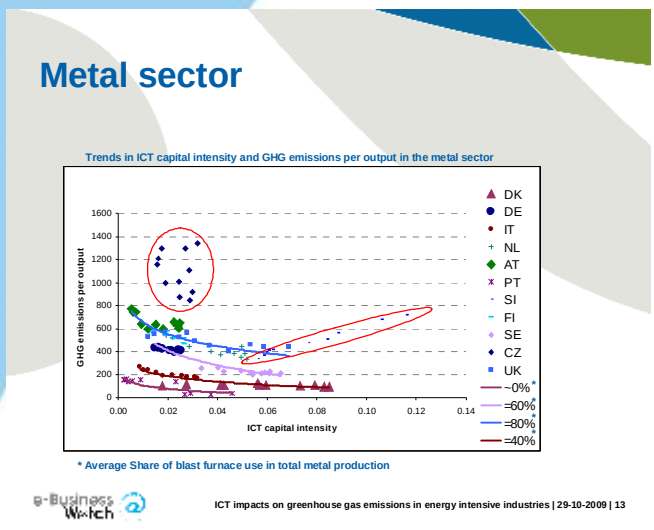
Contributions from the audience pointed to variouse issues. One participant stated that the European Commission should increase its ICT research related to steel production because steel production is not possible without ICT-based fine-tuning. **Colette Maloney** from DG Information Society and Media, who chaired the session, indicated that the European Commission is constantly increasing the share of ICT-related research, also in energy-related issues.

It was also stated that smart grids and smart metering will require considerable investments and that this may be a cost driver. However, customers may not be willing to pay higher prices, so that smart grids and smart metering are a highly political issue.

2.3 2nd morning session: ICT impact on greenhouse gas emissions

This session was chaired by **Hasan Alkas**, Principal Economist and SeBW Programme Manager, European Commission, DG Enterprise and Industry.



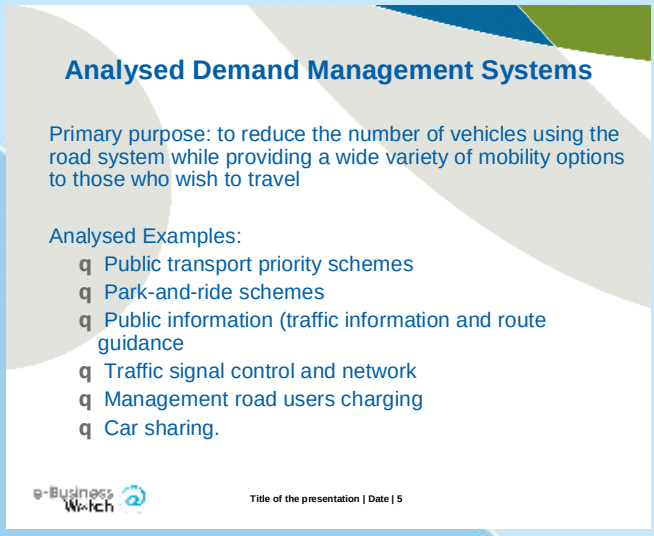


Ferdinand Pavel (DIW econ) presented one of the key studies of the SeBW in 2009, probably the first comprehensive empirical economic analysis of the relationship between ICT on GHG emissions in European energy-intensive industries. The study is based on an econometric analysis and on company case studies.

Mr Pavel said that the analysis indicated a limited but acute impact of ICT on the GHG emissions and sustainability energy-intensive industries. Except for the paper sector, the study found that increased ICT share in total capital significantly improved sustainability, i.e. a change in production volumes would not lead to a corresponding increase in emissions. In the metal and transport sectors in particular, increased ICT capital relative to gross output had improved the emissions per output of the industry at a diminishing rate.

However, achieving reductions in emissions through ICT was found to be expensive relative to other abatement technologies.

The study team concluded that particular attention should be paid to new member states and the transport sector. It recommended to foster the development and wider adoption of ICT for energy and emissions management, to implement a standardised emissions accounting and reporting system.



Stepping in for Jian Bani (SE Consult), **Hannes Selhofer** (empirica GmbH) presented the results of a SeBW study on the impact of Intelligent Transport Systems (ITS) on greenhouse gas emissions. Several pilot projects with ITS indicate that ICT hold a major potential to reduce emissions in road transport. The study team stresses that it requires the combined application of ambient intelligence (AI) and ITS technologies to exploit this potential. AI was a mere vision some years ago; but this could change fast due to decreasing sensor sizes and costs in combination with the rapid development of wireless technologies.

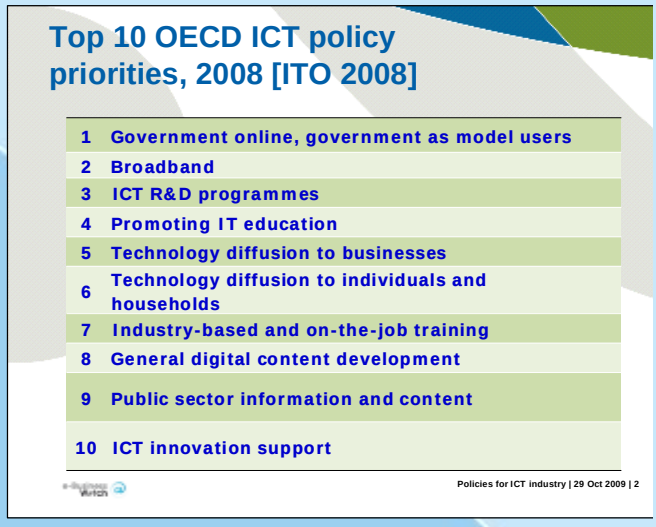
Discussion points

Enrico Gibellieri from the European Steel Technology Platform (ESTEP) discussed the two studies. He confirmed the importance of ICT to enable more efficient production processes in the steel industry. He anticipated for his industry that the main role of ICT would be to support process control in production ("intelligent manufacturing") rather than for "e-business" in the narrow sense, i.e. data exchanges between companies and their suppliers or customers. He gave examples of the positive impact of ICT, such as better yields, improvements of the intrinsic and dimensional quality of products, reduced energy intensity, and better workplace conditions.

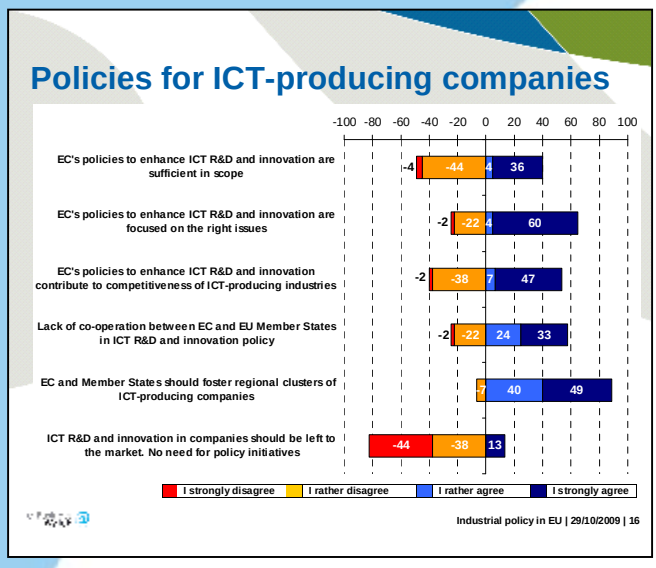
Comments from the floor were also mostly optimistic about the potential of ICT-enabled systems to further reduce the emissions intensity in energy-intensive industries, because the production processes could be better controlled and actively managed. It was recommended to "believe in ICT" and to take a pro-active approach in seeking ways how to exploit this potential.

2.4 Afternoon session: ICT-related industrial policy

This session was chaired by **Manfred Bergmann**, DG Enterprise and Industry, Head of Unit B/2 "Development of Industrial Policy" at the European Commission, DG Enterprise and Industry.



Graham Vickery (OECD, Directorate for Science, Technology and Industry) presented "policies for the ICT industry in the EU and in other parts of the world". The OECD found that Europe is behind Japan and Korea with regard to prioritising ICT industry support, ICT uptake and digital context. As regards ICT policies to tackle the economic crisis, the OECD found that 12 out of 14 responding countries increased ICT policy priorities for economic recovery. Most often mentioned were ICT skills and employment (8), broadband (7) and technology diffusion to business (6). However, few initiatives have implemented measurable targets for the evaluation of their policies or programmes. The OECD also found that mMany economic stimulus packages include investments in green technologies (16 of 23 OECD countries plus the EC). In many cases, plans rely directly or indirectly on ICT, e.g. development of "intelligent" transport systems, smart cars, smart buildings, smart electricity grids.



Stefan Lilischkis (empirica GmbH) presented results of expert survey about ICT innovation and adoption which was conducted in the framework of an SeBW study about ICT-related industrial policy in June 2009. 236 experts from the European e-Business Support Network and empirica's European Network for Information Society Research were invited by e-mail to fill in web-based questionnaire, 46 responded. The experts saw a clear need for public policy to support ICT R&D, innovation and adoption. According to the experts, the European Commission is focusing on right issues in its policies. However, there were also critical assessments about a limited impact of the EC's policies and about a lack of cooperation between the EC and Member States. The results may encourage the EC to extend the scope of its policies but also to modify the design of these policies.

Discussion points

In discussing the presentations, **Peter Johnston** from the European Policy Centre argued that the use of ICT has become so pervasive that it would be difficult to implement ICT-related industrial policies specifically for the ICT sector itself. Furthermore, due to the global character of the industry it would be difficult to define a specifically European industrial policy for this sector. He stressed that ICT matters for a sustainable economy, and that the use of e-business is a relevant indicator for the progress of the economy as a whole in that respect – rather than an indicator for the ICT industry. He said that there were three dynamics to drive and measure ICT use: a further increase in the number of ICT users, an increase in the intensity of ICT use, and an increase in the sophistication of use.

Manfred Bergmann, session chair, pointed to open questions related to the expert survey: Why do the respondents believe that R&D is sufficient for maintaining software production in Europe, but not for maintaining hardware production? Why does a majority believe that ICT adoption should not be left to the market?

Remarks from the audience included a hint to the importance of the European Regional Development Fund for ICT-related industrial policies because of its scope, and a hint to the importance of regulatory issues for example for telecommunications and intellectual property rights.

2.5 Panel discussion

The last conference session was a panel discussion about "ICT-related industrial policies in difficult economic times", chaired by **Peter O'Donnell**, Assistant Editor, European Voice. The panellists were:

- Leo Baumann, Digitaleurope, Public Affairs Director
- Manfred Bergmann, DG Enterprise and Industry, Head B/2, Development of Industrial Policy
- Antti Eskola, Ministry of Employment and the Economy, Finland
- Peter Johnston, European Policy Centre, Senior Adviser on information and knowledge society
- Bahadir Kaleagasi, Turkish Industry and Business Association, Brussels

Leo Baumann represented the ICT industry's perspective. He argued that the EU recovery plan in response to the economic crisis had initially contained good proposals for the ICT industry, but was not harmonised across Member States and therefore not implemented as planned. He hoped that the "digital agenda" of the European Union would gain momentum when the new Commission is in place. He stressed that it would be important for Europe's competitiveness to "mainstream" ICT use in all domains of the economy and society such as government, business, health, and education.

Manfred Bergmann from DG Enterprise and Industry stressed that ICT-related policies should make a clear difference between "R&D policy" and "innovation policy". He warned that the Commission must not be selective in supporting specific technologies or standards, but that the market should decide about the optimal technology. He also stated that policy makers should not overstress the importance of ICT for a green economy and that they should not neglect the non-green industries.

Peter Johnston from the European Policy Centre said that the problem in Europe was on the innovation side, not so much in research. However, he said it would be important to

mobilise private investment in research and innovation, and to better connect the innnovation drivers with the research community. A much stronger interface between actors in R&D, innovation, regional funds and the European Investment Bank is needed. With regard to sustainability, he stressed that implementing a systematic and consistent carbon reporting scheme was important, and to decide on concrete targets what to achieve ("you cannot drive towards what you cannot measure.")

Bahadir Kaleagasi from the Turkish Industry and Business Association in Brussels said that ensuring access to finance was a critical issue for an industrial policy in times of the crisis. He also stressed the importance of human capital for the competitiveness of the European industry, and that investments in human capital were therefore essential. He reported that the ICT sector had performed much better than most other sectors in Turkey during the economic crisis: growth rates in the ICT sector were still about 10% (even if down from 20% before the crisis), while the economy as a whole had seen a decrease of about 6% of GDP.

Antti Eskola from the Ministry of Employment and the Economy in Finland said that his country had "stopped talking about industrial policy" ten years ago and would concentrate on innovation policy instead. He saw the main objective for policy to create favourable framework conditions for innovation. He mentioned "open innovation" as a new, important trend in this context. He said that this went beyond conducting innovation processes jointly with business partners, as companies cannot afford to rely entirely on their own research (closed innovation), but included new schemes for buying or licensing processes or patents from/to other companies.

2.6 Concluding remarks

The conference was concluded by **Jean-Noël Durvy**, Director, DG Enterprise and Industry. Mr Durvy explained that the overall objective of the Directorate-General for Enterprise and Industry is to ensure that policies of the European Union contribute to the sustainable competitiveness of EU enterprises and facilitate job creation and sustainable economic growth. In particular, it is an objective of European enterprise policy to facilitate the structural change towards the knowledge economy and to support the productive use of ICT. The studies of the e-Business Watch confirm the enabling role of ICT for innovation, and they suggest a strong link between ICT use and greenhouse gas emissions. However, the e-Business Watch studies have also shown that there are many challenges to be addressed, including ICT adoption by small and medium-sized enterprises, interoperability problems and a lack of commercialisation power in Europe. The Sectoral e-Business Watch provides solid empirical and analytical evidence about current developments in different industries, helping DG Enterprise and Industry to design and carry out effective industrial policies.

About the Sectoral e-Business Watch

The "Sectoral e-Business Watch" (www.ebusiness-watch.org) is based on a Framework Contract (No. ENTR/2006-019) and Specific Contract (No. SI2.511410) between the European Commission, Enterprise and Industry Directorate General, and empirica GmbH. The implementation of the contract involves, besides empirica, the following main service providers: DIW econ, IDC EMEA, Ipsos and GOPA-Cartermill.

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