

e-Business W@tch Workshop on ICT and e-Business in the Shipbuilding and Repair Industry

at the SSA Conference
London, 11 October 2006

1 Summary

The fifth e-Business W@tch Workshop in 2006 was organised in cooperation with the UK Shipbuilders & Shiprepairers Association (SSA). It was held as a session at the **SSA Conference** (www.ssaconference.com) on 11 October 2006 in London, which is one of the major European conferences in the shipbuilding industry.

The main objective of the workshop was to **discuss and validate** the findings of the *e-Business W@tch interim sector report* about ICT and e-business in the Shipbuilding and Repair Industry. Feedback and comments received from conference participants will be reflected in the final report.

The *e-Business W@tch* session took place on the afternoon of the first conference day and was introduced by **Georgios Karageorgos** (EC / DG ENTR and *e-Business W@tch* project officer). He outlined the e-business policy framework of DG Enterprise & Industry and explained the background and role of *e-Business W@tch* in this framework.

Results of *e-Business W@tch* sector studies were then presented by **Hannes Selhofer** (empirica), who summarised general conclusions from this year's work, and **Birgit Soete** (DIW Berlin), who presented the specific findings for the shipbuilding and repair industry. Finally, **Paris Sansoglou** (CESA – Community of European Shipyards Associations), who is a member of the e-Business W@tch Advisory Board 2006, took the role of a discussant and made comments on the draft report.

After the presentations, conference participants engaged in a lively **discussion** with the study team, raising several issues such as different implications of ICT and e-business for various sub-sectors within the industry. It was obvious that the topic had raised interest and was regarded as highly relevant for the industry; however, questions and comments also demonstrated the considerable **challenges** in conducting a survey and study on this quite specific industry, which covers manufacturing (shipbuilding) as well as service activities (ship repair).

The *e-Business W@tch* representatives acknowledged these difficulties and confirmed that they will be explained in the final version of the sector study. However, they also pointed out that these issues cannot be 'solved' in the framework of this study, which is embedded in a larger research framework. They need to be addressed in other fora, with the active involvement of the industry and the official statistical institutions of the EU and its Member States.

2 Main points presented and discussed

Shipbuilding is a high-tech sector

Several presentations at the conference dealt with innovative technologies for engineering and new production materials and demonstrated clearly that the modern shipbuilding industry is a high-tech sector in any respect. Results of the e-Business W@tch survey 2006 broadly confirm this assessment for the area of ICT use. In general, the shipbuilding industry is one of the ICT-intensive sectors among the 10 industries studied in 2006. e-Business activity is comparable to the state-of-play in other manufacturing industries, such as the pulp & paper or the food & beverage industry.

ICT as an instrument to maintain the technological leadership

Several speakers at the conference, most prominently Mr Reinhard Lügen (CESA) and Mr. Corrado Antonini (Fincantieri), pointed out that the European shipbuilding industry must maintain its technological leadership in order to stay competitive with the emerging players in Asia.

In the *e-Business W@tch* session, speakers argued that ICT are an important instrument to achieve this objective. This was broadly confirmed in the discussion. Industry representatives agreed that the broad use of ICT in all application areas along the value chain (most importantly in engineering and design, but also for supporting production, supply chain and procurement processes, and for cooperation among companies) should be promoted and encouraged.

Still potential for further ICT adoption – particularly among smaller firms

Ms Soete (DIW Berlin) summarised the main findings of the e-Business Survey 2006 for the shipbuilding industry. She explained that the **complex production structure** in the industry determines to some extent the use of e-business. For example, many firms are involved in the production process of vessels.

These are high-customized products that allow little if any standardization. Thus, ICT is mostly used in the engineering and construction process, while it is more difficult than in other sectors to standardise procurement processes for such specific products. This point was later confirmed by Mr Sansoglou from CESA, who argued that ICT are "*a key strategic solution to **manage complexity***" in the shipbuilding and repair industry.

The overall results was that the larger firms, in particular the large shipyards, are sophisticated users of ICT, while there is a big potential for further ICT adoption among smaller companies (suppliers). For example, new technologies for online collaboration among players are not yet widely deployed. Findings of the survey include the following points:

- **Networks:** Nearly all companies have internet access, EDI is widely used.
- **Enterprise resource and supply chain management:** ERP and SCM systems are used mainly by large enterprises; they are not yet widely deployed among SMEs.
- **ICT for engineering / collaborative engineering:** CAD/CAM systems are common in the industry; however, only few companies use tools for online collaboration in engineering processes ("e-design" tools, e.g. for 3D visualisation in an online environment).

- **e-Commerce:** B2B internet trading platforms have been introduced to foster e-procurement activity. Marketing and sales is not a key application area in the shipbuilding industry (definitely not for shipyards, but it could be a relevant application for SME suppliers to shipyards in the future).
- **Digital divide:** as in other manufacturing sectors, large companies take the lead: Large shipyards are forerunners in ICT and e-business usage. They have increased their productivity as well as their bargaining power towards suppliers by using ICT and e-business technologies. Thus, a technology gap between larger shipyards and small to medium-sized shipyards or suppliers is developing.
- **Barriers:** interoperability problems and security concerns (e.g. with regard to protecting Intellectual Property Rights – IPR) were found to be major barriers hampering e-business adoption in the industry.

Supply chain specificities of the sector

In his comments, Mr Sansoglou pointed out that some e-business concepts, notably in the areas of e-commerce (online marketing and selling) cannot fully be applied the shipbuilding and repair industry because of the specific characteristics of this industry. He highlighted the **complex supply chain** and the **project-oriented nature** of production in shipbuilding. For example, there a lot of ‘once-off’ ships built. These are huge projects, each involving typically more than a 1000 suppliers. He pointed out that these features may explain the – also – ‘once-off’ ICT systems which are frequently observed in this industry, and underlined the need for relevant standards.

ICT impact

About two-thirds of the shipbuilding and repair companies interviewed by e-Business W@tch in 2006 said that e-business constituted “a significant part” or “some part” of the way they operate.

Firms were also asked in which business areas they experience a positive or negative effect of ICT. Most firms (about 70%) reported that ICT had a positive impact on **internal work organisation**, and more than half of the companies (55%) stated that ICT has improved **business process efficiency**. Effects on procurement costs and product quality are less pronounced, but still relevant (about a third of all firms report a positive impact of ICT).

3 Discussion of specific points and conclusions

In their response to the presentation of study findings, conference participants engaged in a lively **discussion** with the study team. In particular, the following issues were discussed:

- **Importance of ICT is fully acknowledged:** there was broad agreement that a skilful, sophisticated use of ICT is very important for this industry, in order to maintain the innovation and technology leadership of European enterprises.
- **Difference between shipbuilding and ship repair:** several comments were made that the implications of ICT and e-business would probably differ for various sub-sectors within the industry, in particular between shipbuilding and ship repair. It was suggested that this should be reflected in the report. Mr Karageorgos explained that e-

Business W@tch was aware of this situation and that – to the extent possible – the study will be specific in its statements; however, the sector definition for survey purposes was agreed in the beginning of the study and cannot be changed ex post.

- **Innovation activity in the shipbuilding industry:** survey results on innovation activity and on the role of ICT thereby triggered some debate; unexpectedly, the survey found that relatively few companies from the shipbuilding & repair industry (compared to the other sectors) had introduced product or service innovation(s) in the 12 months prior to the interview. Conference participants contested this finding and argued that the shipbuilding industry has been a highly innovative sector for decades, for instance in terms of production technologies used. It was concluded that this apparent discrepancy in the survey data had probably to do with the way how "innovation" has been defined for the study purpose, in particular with the selected time frame for innovation activity. In shipbuilding, product innovation is certainly a longer-term process than, for example, in the footwear industry.

These points will be reflected in the final study.

4 Further information

Further information, including the agenda and the presentations given at the workshop, are available at the *e-Business W@tch* website (www.ebusiness-watch.org) under 'events' -> 'proceedings'. For further information, questions and input please address either:



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