

e-Business W@tch 2006 Hospital Activities Workshop

Malaga, 10th May 2006

1 Summary

e-Business W@tch is an observatory implemented by the European Commission, DG ENTR, since late 2001. Its mission is to monitor and assess the uptake and use of ICT among enterprises from different sectors in the EU. In 2006, 10 sectors are being studied in terms of e-business developments and impacts. One of these sectors is hospital activities.

At the workshop in Malaga, first findings from the *e-Business W@tch* 2006 were presented and discussed. The workshop had three core subjects:

- ▶ General findings from *e-Business W@tch* 2006
- ▶ Integrating disparate Information Systems in hospitals – how to tame the hydra?
- ▶ Primary versus secondary care, public versus private service provision – is the role of hospitals changing due to investments in ICT?

The workshop took place in the framework of the eHealth 2006 High Level Conference and Exhibition at the Trade Fair and Congress Centre in Malaga, Spain. Following a brief introduction by Georgios Karageorgos (European Commission, General Directorate Enterprise and Industry) about the *e-Business W@tch* in the context of the Commission's e-business related activities, three interesting presentations highlighted, respectively, the main findings from the 2006 *e-Business W@tch* survey, experiences with ICT implementation in a complex hospital environment and the ICT industry view as shown through the Health Information Network Europe (HINE). Jeffrey D. Miller (Vice President Worldwide Health and Life Sciences Industry, Hewlett-Packard, USA) was the invited keynote speaker to present 'the future of e-Business in hospitals'. *e-Business W@tch* will follow up presentations and discussions in the hospital activities sector report which will be available online by the end of 2006.

2 Main points from the presentations and discussions

2.1 First findings from the 2006 *e-Business W@tch* Survey

- ▶ Speaker: **Karl A. Stroetmann**, Senior Research Associate, empirica Communication and Technology Research, Germany.
- ▶ **Hospital Information Systems integration:** The integration of Hospital Information Systems appears to be hampered by a lack of common e-health standards, not so much by lack of funds. As indicated by case studies and interviews, however, the key issue may be lack of management capabilities facing a fragmented hospital structure and culture. Selected survey findings include the following:
 - **Hospital Information Systems use:** The prevalence of particular systems varies. Patient Administration Systems, for example, are very common (76%), pharmacy systems are in use quite often (41%) but only a minority of hospitals uses Radiology Information Systems (26%), Picture Archiving and Communication Systems (22%) and Computer-based Physician Order Entry systems (21%).

- **Standards use in hospitals:** The findings for standard use in hospitals are somewhat ambiguous. On the one hand, 68% consider e-health standards when making decisions. On the other hand, the Health Level 7 standard for clinical and administrative data is uncommon, only 21% of the hospitals use it. Moreover, a strong minority (29%) uses proprietary standards. All in all there appears to be a need for e-health standardisation.
- **ICT investment in hospitals:** Most hospitals (79%) invested in ICT in 2005, with no major differences shown between public, private and non-profit hospitals. Furthermore, the majority of hospitals (62%) declared that the level of their ICT budget will be the same in 2006 and about a third (32%) in fact said that this budget will increase – again with no major differences identified between public, private and non-profit hospitals. One could thus conclude that the ability or willingness to invest in ICT does not appear to be a problem among European hospitals.
- ▶ **A changing role of hospitals due to ICT?** The role of hospitals in relation to general practitioners (GPs) is not really changing due to ICT, but ICT communication is reducing the boundaries between them. Internal (31%) and external e-communication (17%) with means other than normal e-mail is uncommon. The same applies to remote access to a hospital's computer system (31%) which offers potential access also by GPs.

2.2 Experiences in a complex hospital environment

- ▶ Speaker: **Miguel Cabrer**, Chief Information Officer (CIO), Son Llätzer Hospital, Spain.
- ▶ **Son Llätzer Hospital** in Palma de Mallorca, Spain, is an example of a “paperless and filmless” hospital where all procedures are done electronically. The medical workstation is the core unit of the system architecture, allowing health professionals to access the clinical history of a patient as well as related clinical and administrative data. The complete computerisation has proven to be cost-effective – particularly with regard to the integration of other health service providers – as well as beneficial to quality of care and to work satisfaction.
- ▶ **Information system integration:** Son Llätzer hospital considers interoperability, i.e. the integration of different departmental systems as a separate, core project. The key solution is an integration tool. The hospital's CIO explained that systems integration is an ongoing problem because the workflow may change every day.
- ▶ **Changing role of hospitals:** Son Llätzer Hospital offers a good example of how the role of a hospital can change through ICT, particularly with regard to communication with patients and outside health service providers: The hospital's mobile platform offers a contact and information interchange system through SMS messages. For example, SMS are used for reminding appointment dates to patients. e-Mobility projects include portable tablet PCs that are of particular use in the outpatient department, tablet Personal Digital Assistants offering access to the Electronic Patient Records (EPRs) from any point in the hospital, and wireless medical devices, for example for ECGs. All 35 primary care centres in the region are connected to the hospital. Primary care professionals can access Son Llätzer's information system and search for data. On average, there are about 50 accesses per day by primary carers to Son Llätzer EPRs.

2.3 An ICT industry view

- ▶ Speaker: **Ingrid Moldenaers**, Senior Manager, Health Information Network Europe (HINE), Deloitte, Belgium.
- ▶ Central to the HINE project is a comprehensive hospital ICT survey comprising 900 hospital interviews in 14 different European countries. This survey was commissioned by HINE with support from nine leading IT organisations.

- ▶ **Hospital infrastructure.** According to HINE, hospitals are recognising the challenge: They plan to move towards being fully integrated and externally connected, from one way traffic to remote, direct and interactive access. Big differences were observed across countries: Nordic and Benelux states are overall more advanced, except the UK and Ireland. France, Germany and Italy are lagging behind. Smaller markets, driven by national projects, are more successful so far.
- ▶ **Hospital Information System use.** HINE observed similar trends to the ones identified by *e-Business W@tch* but figures differ due to different samples. In addition, HINE identified significant differences between countries and foresees that they will move unevenly. The key challenge is to address clinical workflows, medical documentation and decision support. A major area of improvement is to bring the tools and knowledge to the point of care. Administrative, financial and medico-technical systems prevail while, as regards particular systems, Patient Administration Systems are very common, but advanced clinical support systems are not yet widely available.
- ▶ **ICT spending patterns.** HINE findings indicate a low level of ICT spending and lack of in-house e-health skills. The same findings also indicate that CIOs are generally unwilling to outsource support and fail to recognise a changing job role. Furthermore, IT strategies seem to be disconnected from business objectives, smart procurement is not yet widely developed and, last but not least, legal requirements emerge as top-ranking drivers of ICT investment in all countries.
- ▶ **Challenges for Europe's hospitals.** Hospital organisation is fragmented and poorly connected. The future vision is one of networked services providing seamless care to an informed public. Technology is opening new horizons – but these have to work across the boundaries between acute care and community care with integrated networks.

2.4 The future of e-Business in hospitals

- ▶ Speaker: **Jeffrey D. Miller**, Vice President, Worldwide Health and Life Sciences Industry, Hewlett-Packard Company, USA.
- ▶ Providers operate in a **complex, fragmented business ecosystem**. Priorities of top healthcare provider include the following: improve patient safety, increase level of care, improve physician productivity, comply with privacy regulations, efficiently share patient records, control spiralling costs. To optimize interactions within their ecosystems, healthcare provider companies must be agile, quickly responding to and capitalizing on change.
- ▶ **Key Trends in Health ICT:** Hospitals need to undertake three types of consolidation: First, physical consolidation, which is technology centric, with a recommended strategy to consolidate and integrate technology. Second, logical consolidation, which is people and process centric and should integrate and simplify the process. Third, ecosystem consolidation, which is value chain centric and should extend information-enabled processes.
- ▶ **Integration of hospital applications.** The future vision is a pool of shared, virtualised information services. Transformation of hospital applications should seek an architecture oriented towards services by the ICT industry that promotes agile and flexible business processes, increases collaboration and integration of the value chain, and improves ability to introduce new products and services.
- ▶ **Emergence of Health Information Services Clinical Trials Applications.** In the traditional approach, health professionals – e.g. hospital physicians, Contract Research Organisations and pharmaceuticals – operate with unshared and unsynchronized information as well as underutilised resources. In the future approach, there are common governance and policies, including a clinical trials services provider and external ICT suppliers as service brokers.
- ▶ **Keys to the Future – The “Six A’s”:** Building Action-oriented, patient-centric applications. Improving data Acquisition by connecting medical devices. Aggregation of medical data.

Better decision support by improving the **Analytical** foundation. Management and **Archival** of data based on information lifecycle. Ability to **Access** information from multiple locations via multiple methods.

- ▶ **Value Formation** in hospitals can take place by accelerating medicine through integration, insight, and agility. This implies three core challenges: First, integrating resources across the value chain while automating and managing transactions for greater efficiency and speed. Second, turning information into insights that enable rapid advancements and better decisions. Third, streamlining operations, accelerating innovation and ensuring compliance.

2.5 Main points from the plenum discussion

- ▶ The discussion focused on the following points:
 - ▶ **Data base:** It was clarified that *e-Business W@tch* data result from a randomised, stratified survey of CIOs or similar persons with decision power in hospitals thus providing a representative picture of the European landscape. In contrast, the HINE surveys focus on sample of persons from larger hospitals with a view to gain data for the marketing efforts of large IT companies active in this market. Insofar, results from both surveys cannot be directly compared, but may complement each other.
 - ▶ **Diversity:** The discussion confirmed the view arising from the data presented that there is great diversity with respect to applications of departmental and cross-hospital, integrated information systems across Member States, but also across various sizes and types of hospitals. It is to be expected that the more detailed *e-Business W@tch* data, once analysed in more depth, will confirm this picture and contribute to a better description and understanding of the situation across the Union.
 - ▶ **Changing role of hospitals:** Contributions centred on the observation that, in spite of various hypotheses, so far little convincing evidence is available on this issue. In individual cases, hospitals indeed cooperate intensely with their regional partners, and their competitive position expands beyond their old boundaries of service provision, but a general trend cannot (yet) be discerned.
 - ▶ **Standardisation:** It would be desirable to survey and analyse in greater detail the usage and applicability of eHealth related standards, particularly those developed and supported by European Standards Institutions. This would particularly be needed in light of the continuing and even intensifying policy debate about interoperability within and across Member States. However, the hospital survey is only one of the ten sectoral surveys conducted by the *e-Business W@tch*, using the same questionnaire (with some minor verbal adjustments like using "patients" instead of "customers"). It was, therefore, not possible to cover such sector-specific issues by this survey - this would necessitate a different, much more detailed study. Nevertheless, interoperability and standardisation were to be discussed also in three specific sessions during the High level Conference.

3 Further information

The agenda and the presentations of this workshop are available under '**events**' at the *e-Business W@tch* website (www.ebusiness-watch.org) or at the eHealth 2006 High Level Conference web site at www.ehealthconference2006.org/. For further information, questions and input please address either:

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