

Eurescom Stimulus Paper

ICT and Healthcare – Challenges and Opportunities

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Purpose of this paper

This paper is meant to stimulate a discussion on how ICT can support the healthcare sector in offering new services and becoming more efficient and effective. ICT has already a major impact on the healthcare sector, but there are more opportunities which need to be explored in order to ensure that affordable, high-quality healthcare will continue to be available to all European citizens.

Identifying and using the opportunities which ICT could offer to the healthcare sector will require more research on European level beyond the research projects in EU and national programmes which have already been performed.

This paper does not provide solutions; it is meant to stimulate an interdisciplinary discussion between experts from ICT and healthcare on the demands in the healthcare sector which could be addressed through innovative ICT solutions.

Challenges for the healthcare systems in Europe

The European society is ageing. The share of elderly people in the total population will rise dramatically in the next decades. From 2005 to 2030 the number of people in the age group 65+ will rise by 52 % or 40 million, while the age group of 15-64 will decrease by about 7 % or 20,8 million. The total EU-25 population is expected to grow from 450 million in 2000 to 470 million in the year 2025. After this, the population is likely to decrease to 449 million in 2050. (Source: EC Green Paper "Confronting demographic change")

The new age composition of the European society will place high demands on the health and long-term care sector, which will inevitably result in rising costs. In order to limit the cost explosion and to be able to serve the needs of a growing number of elderly people, healthcare systems in Europe need to become more effective and efficient. Apart from organisational and regulatory reforms, the use of ICT can be one of the main drivers for higher efficiency and effectiveness in the healthcare sector.

Opportunities – what ICT can do for healthcare

Viviane Reding, EU Commissioner for Information Society and Media, summarised the opportunities of using ICT in healthcare in a speech on 8 May 2006 as follows: “New technologies can make healthcare more efficient, while responding to the increasing demand for health services in an ageing society.”

There are three main areas in which ICT can help to make healthcare more effective and efficient beyond solutions which are already available:

1. Management of healthcare
2. Medical treatment
3. Prevention

Innovative ICT solutions in these areas may be based on advancements towards ubiquitous and personalised network access and the miniaturisation and connectivity of devices. New or improved equipment might be used for enhancing healthcare, such as miniaturised and cheaper electronics and sensors, high-density memory, micro-electromechanical systems, and novel combinations of existing devices.

The decreasing cost and size of sensors, monitors and other equipment enables both novel uses for existing technologies and applications of completely new technologies. The increasing bandwidth and pervasiveness of communication networks, including ad-hoc and sensor networks, opens up new opportunities for transferring medical information faster through both wired and wireless systems.

Areas in which innovative solutions have already been started under the EU eHealth action plan include:

- Patient mobility
- Interoperability and system integration
- Health cards and electronic health records

An area which definitely needs more efforts is interoperability of eHealth systems and applications.

The vision of a single European health information space

The European Commission is promoting the vision of a single European health information space, which enables Europe-wide access to health information whenever and wherever it is needed. In order to make this vision reality, more work needs to be done on the development of interoperable solutions, which enable technical interoperability on network level, functional interoperability via standardised formats for eHealth information, and semantic interoperability for overcoming language barriers in the use of eHealth information.

A number of standardisation activities are already going on in different areas relevant to the use of ICT in healthcare. However, there is still a need for monitoring and coordinating these activities in way that accelerates the creation of a single European health information space without inhibiting commercial activities towards the implementation of innovative ICT solutions in the healthcare sector.

References

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EU eHealth Action Plan

http://europa.eu.int/information_society/doc/qualif/health/COM_2004_0356_F_EN_ACTE.pdf

eHealth Working Group

http://europa.eu.int/information_society/activities/health/policy_action_plan/working_group

National eHealth roadmaps by eHealth Working Group

http://europa.eu.int/information_society/activities/health/policy_action_plan/working_group/national_roadmaps

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<http://www.ehealth-impact.org>

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http://ec.europa.eu/employment_social/news/2005/mar/demog_gp_en.html

Standardisation

CEN /ISSS eHealth Focus Group

http://www.cenorm.be/cenorm/businessdomains/businessdomains/iss/activity/ehealth_fg.asp

WHO eHealth Standardization Coordination Group

<http://www.who.int/ehscg/en/>

OMG (Object Management Group) Healthcare Task Force

<http://healthcare.omg.org/>

Health Level Seven

<http://www.hl7.org/>

European Expert Group 9

<http://www.eeg9.nl/>