

## Chapter 25

# E-Health Sites Development Using Open Source Software and OMT Methodology as Support for Family Doctors' Activities: A Romanian Case Study

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### ABSTRACT

*E-health is the generic term used for the set of tools based on information and communication technology used to help prevent, diagnose, treat, and monitor the health and lifestyles and to improve these processes. These considerations are the starting point of this chapter, which presents a Website development solution for family doctors' consulting-rooms to meet the needs of potential patients, based on Object Modeling Technique (OMT) and Open Source Software (OSS) in a metropolitan area network infrastructure. Development of ICT leaves much more freedom to the consultants to accommodate organizations to other influences, both internal and external.*

### INTRODUCTION

E-health is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and

related technologies - in a broader sense, the term characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, region-

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ally, and worldwide by using information and communication technology (Eysenbach, 2001).

E-health includes the relationship between patients and healthcare providers, sharing information between the institutions of communication between patients and health professionals. It also includes relevant information networks, electronic medical record and personal portable communication systems used to monitor and assist patients. Because of e-Health tools, some information vital to saving a life may be available in place at the right time - which is critical, given the intensification of cross-border movement of citizens and patients.

E-health is rapidly emerging as an international priority in nations at all levels of development, yet the benefits and priorities have not clearly been defined (Bates & Wright, 2009). Although some authors have suggested that electronic records may be out of reach for developing nations, an increasing body of work shows that use of electronic tools can result in large health improvements, even in resource-poor environments (Siika, et al., 2005; Allen, et al., 2007; Were, Sutherland, Bwana, Ssali, Emenyonu, & Tierney, 2008; Blaya, Gomez, Rodriguez, & Fraser, 2008). Vast amounts of personal data are collected routinely by health and social care systems in order to support clinical management and patient care (Ford, et al., 2009).

Health professionals, patient organizations, and the pharmaceutical industry are using the Internet as a medium for communicating health information (Sittig, King & Hazlehurst, 2001; Bovi, 2003; Baker, Rideout, Gertler, & Raube, 2005; Brooks & Menachemi, 2006) while the most obvious use for patients is as a source of health information (Kummervold, et al., 2008).

E-Health can bring considerable benefits for the community by improving access to health care and improving them. It contributes to the establishment of citizen-oriented health systems and the efficiency, effectiveness and sustainability of the health sector. The European Union is moving towards a "European e-Health Area," coordinat-

ing actions and related policies and promoting synergies between stakeholders to develop better solutions, to prevent fragmentation and to disseminate best practices. The specific objectives are: the creation electronic medical records, supporting information sharing and standardization, the establishment of networks of health information between various care centers to coordinate the response to threat to health, providing medical services on line such as information on healthy lifestyles and disease prevention, and development of remote consultations (prescribing services, reference and electronic reimbursement). Ensure the success of this project is necessary to take into account the requirements of citizens, patients and healthcare professionals and their involvement in implementing strategies and projects.

It is clear that while research in this area is burgeoning, it remains a fact that there is little reliable evidence to demonstrate the measurable impact, risks, or cost-effectiveness of e-health innovations, except in a modest number of application areas (Johnston, Pan, Walker, Bates & Middleton, 2003; Chaudhry, et al., 2006; Pagliari, 2007). Designing effective e-health systems and services requires the application of expertise from diverse fields and will benefit from interdisciplinary collaboration - this may be eased by increasing familiarity with each others' terminologies, theoretical bases, and research methods, with the ultimate objective of achieving trans-disciplinary working (Pagliari, 2007).

## **E-HEALTH IN ROMANIA**

Romania is a semi-presidential democratic republic where executive functions are shared between the president and the prime minister. Romania is divided into 41 counties – the municipality of Bucharest is considered also a county. The Ministry of Public Health (MPH) is responsible for the health policy, regulations, health programs and investments in public health establishments. The

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