

# Chapter 6.16

## Mobile Business Process Reengineering: How to Measure the Input of Mobile Applications to Business Processes in European Hospitals

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### **ABSTRACT**

There is an ongoing debate about the value of mobile applications for the optimization of business processes in European hospitals. Thus finding satisfying methods to measure the profitability of mobile applications seems to be of great importance. Prior research had its focus mainly on general value dimensions concerning the medical sector or the usability and design aspects of hospital information systems. Conterminous to that, the authors chose a strictly process-oriented approach. They modeled the requirements of future mobile systems as an output of a profitability analysis based on activity-based costing. The cost savings defined as the difference between

former and future business processes were used as an incoming payment for an ROI analysis. In a nutshell, the authors present a case study that highlights the value of their analyzing method as well as the enormous benefit of mobile applications in the area of food and medical supply processes in German hospitals.

### **INTRODUCTION: INCREASED DEMAND FOR EFFICIENT PROCESSES IN HEALTH CARE**

Apart from the long-term decline of the population, a great challenge in the contemporary discussion turns out to be the increasing aging of the

population in European industrial societies. This raises various difficulties for our welfare systems and reveals the necessity of long-term adjustment to this development. Aging describes the process of composition of the population shifting for the benefit of elderly people.

Thus, the decisive item is not the increasing number of the elderly but rather their increasing proportion of the population. For example as latest simulations for the development of the German population (Statistisches Bundesamt, 2003) reveal, the proportion of 65-year-old and older people will rise from 17.1 % today to 29.6 % in 2050. At the same time the percentage of geriatric people (80 years and older) will increase to 12 % which means a triplication.

This development causes serious problems in welfare and tax systems that are based on the income of a workforce. Less young people have to pay the pensions and health care of the elderly.

Furthermore, the productivity of our highly automated industry leaves an increasing number of people unemployed. So the real challenges of over aged European industrial societies will be to enhance the productivity of the existing education and health care systems.

And as productivity is defined as the relationship between output and input factors, there was an intensive discussion going on during the last 2 years about the input factor dimension. Even though the German health care system was able to perform quite well the last decades, from an input point of view the costs and resources to maintain the system were increasing dramatically (see Figure 1).

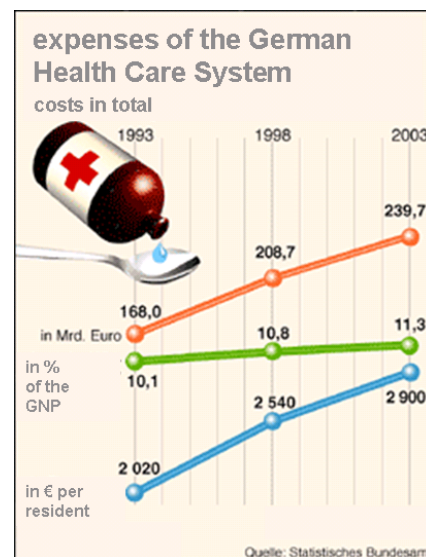
This development is not typical for the German health care system only; you will find similar developments in all Organisation for Economic Co-operation and Development (OECD) countries around the world as published at the OECD fact book (OECD, 2006).

One major initiative to stop this cost explosion was the release of a law for financing the clinical

sector in 2002. According to this law, a hospital does not get paid for the duration a patient is being treated, but for the respective type of disease. The treatment of every illness is linked to a fixed price—documented in the Diagnosis Related Group (DRG)—the hospital is then paid by the health insurance companies. This system results in the effect that a hospital can only earn good money by improving the business processes in the treatment of the patient, without losing quality. Since this time on, a big competition between hospitals and different clinical departments to enhance their business process productivity has taken place. Best practices achieving business process improvements are defined as clinical pathways.

As a parallel to other new deregulation decisions invented by the government, new types of market players like, for example, the Rhön Clinical enterprise emerged. They act as business redeveloper, buying unproductive hospitals

Figure 1. Expenses of the German health care system



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