



## e-health

### the search for sustainable business models

Some new opportunities offered to healthcare by technology are enticing. However, despite the arrival of many new ICT-based health products, progress in this area remains patchy and slow. One reason for this has been the difficulty of harmonising procurement systems and revenue streams within the diverse mosaic of EU health provision.

At the same time, the cost of healthcare as a component of national budgets is expected to rise so far as to put the creditworthiness of large EU states at risk. According to a report by Standard & Poor the healthcare costs of Germany, the U.K. and France will increase from 6.3 per cent of GDP in 2010 to 11.1 per cent of GDP by 2050<sup>1</sup>.

Thus the challenge for the future is to ensure that individual medical practitioners, and the institutions that employ them, can ensure funding for systems that improve patient outcomes and achieve long-term reductions in overall expenditure.

*For the purposes of this paper, «e-health» refers to ICT technology used for therapeutic and non-therapeutic support of health services. In the main, e-health services are not new treatments but improvements of existing practise to get better patient results. «Telemedicine» is the delivery of a medical service by some sort of networked device and is thus a part of e-health.*

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<sup>1</sup> [http://www.iscintelligence.com/archivos\\_subidos/s&p\\_health\\_creditworthiness.pdf](http://www.iscintelligence.com/archivos_subidos/s&p_health_creditworthiness.pdf)

## understanding the market

ICT-based services can be provided to patients directly - activity or exercise monitoring for example - or to a health provider in the form of a diagnostic tool. Procurement and use can be at regional level - a medical image storage system - or at GP level, using a patient data record reader. For these reasons, the need find generally applicable market models is becoming more pressing as time passes. Nevertheless, there are some specific problems which might be remedied to some extent by administrative or policy measures.

## measuring benefits

Service measurement, using a transparent and widely accepted methodology, is a truly crucial component of increased uptake. There are two types of benefit that can be derived from new technology services:

- soft or qualitative benefits for patients - wellness, improved relations between patient and healthcare professional, increased patient comfort.
- hard benefits: cost reduction, reduced number of hospital admissions, reduced number of trips between home and hospital for the patient, smaller number of emergency hospital admissions and decreased levels of hospital re-admission.

With these there are two typical cost/benefit analysis types:

- healthcare system level: costs of investments (training, technologies) and benefits in terms of health for the patients and overall cost reduction of treatment.
- hospitals and clinic level: return on investment (ROI) methods are often used. In Norway for example the evaluation combines care efficiency (care reactivity, reliability of diagnosis etc) with increased comfort for the patient (measured in fewer days in hospital).

The need for progress in the development of some standard assessment techniques is urgent if we are to see the growth of a receptive market for new ICT-based services among health providers.



## Who pays now?

Innovation and system deployment are currently paid for in different ways:

- Research and development: is financed in several ways - industry or national funds or at an international level (WHO, EU).
- Pilot project costs are usually financed by industry, hospitals and clinics and at regional level.
- Routine applications: currently a very varied picture - public funding, (national health programs), national insurance, industry and sometimes patients.

## the role of market players

- Industry in many cases industry pays for new services if there is the possibility of further remuneration from data transmission fees for example or benefit in terms of differentiation brought to the market or some tangible cost reduction.

- For example: remote cardiac failure management costs are picked up by industry since they bring a differentiator to the market (case of the connected pacemaker Smartview™, Sorin)
  - For the pharma companies, e-health might help to handle the complete 'value chain' or to bring a differentiator advantage to the market.
- Patients might pay if the e-health service is related to 'lifestyle': nutrition, baby coaching or physical activities for example. Treatments in these areas are not traditionally financed by national insurance.
    - «E-coaching» services accessible from prevention and wellness sites such as WebMD for nutrition.
  - Company scheme complementary plans. These might partly finance e-health services in conjunction with company offers made available to employees. They would focusing on prevention and wellness where these tend to increase performance and reduce absenteeism.
  - National social security plans can pay in very specific cases when clear cost reductions are expected from a rigorous therapeutic observance, for example.

## main barriers to adoption

At the present time there is a clear argument to be made in support of the wider use of ICT systems in health services.

Such services can, as described above, reduce costs; reduce the impact of disease or disability; enable patients to live more independent lives and even reduce patient isolation. However, and for a number of reasons, wide-scale adoption is slow.

The following are just some of the reasons for limited progress so far:

- **health system remuneration structures**

Current rules in some member states leave it unclear who will reimburse a hospital for investment in ICT services. In addition, there is a tendency for GPs and hospitals to be paid for physical 'events' – meaning patient consultations or treatments. Novel systems that reduce hospital or GP visits - or treatment – can thus be seen as useful but also a threat to livelihoods.

- **scalability is often a factor**

Initial costs incurred by e-health investment might be recovered later on if, and only if, the project becomes large enough to produce revenue in excess of costs. Pilot schemes tend to address a specific, well defined perimeter with no associated deployment plan or business model. In Regional health procurement systems there will need to be better information sharing so that EU-wide performance data may be assessed.

- **training and culture**

ICT systems can produce large amounts of data or greatly increase the need for accurate data entry. They can also place a strain on existing equipment, requiring larger, better supported infrastructure. All these re-alignments require extra training for staff, perhaps more staff or additional pay in some cases - or a change in expectation about what a particular medical job will involve. These challenges are not to be ignored as doctors can resist the greater role of IT by pointing out that this was not what they «joined the profession for».

- **administration**

There is often considerable complexity in modern health systems which can be heavily centralised, as in England, or more dispersed, as in France. They can be centrally paid or based on a system of semi-public insurers as in Belgium. These significant variations can mean that no solution to procurement in one country will necessarily work in another. Moreover, they can also create problems of 'scalability' as described above.

- **centralised IT procurement failure**

Some member States have had real difficulties in procuring and adopting large-scale IT systems – in particular patient databases. Poor contract design - or administration - has led to a spreading loss of confidence in 'top-down' state procurement.

- patients expectations  
There are some ICT based systems that would help patients but for which – falling under a therapeutic heading – they would not, in most member States, expect to pay for. This is less the case with «lifestyle aid» payments which - while therapeutic in outcome - are more closely aligned with public expectation.
- security  
The management of highly confidential medical data remains a concern especially since large state projects have a patchy reputation in this area.

some policy options: «payment by results»

There are probably no policy formulas that can fully unlock the potential of technical services on their own. Nevertheless, Orange France Telecoms fully supports the gradual adoption of ‘payment-by-results’ systems, as already found in some EU regions. This could greatly assist with the rollout of systems that prove their value.

Although this is not a change that can be engineered at EU level, some member states or regions are already experimenting with payment systems that reward positive ‘outcomes’. Thus, measurements that focus on keeping the patient out of acute care can save a lot of money and improve lives – especially for those with chronic conditions. To enable this to happen, in a co-operative rather than coercive context, some thought needs to be given to information sharing – see below. A number of additional actions, at different levels, could also help:

- assessment criteria and raising awareness  
Given the centripetal tendencies of regional administrative bodies and the significant difficulties in comparing results – particularly across borders - it might be helpful to consider an annual EU assessment of health outcomes in the e-health context. Such figures, based on the EU «Euphoric»<sup>2</sup> programme proposals perhaps and compiled with relation to health inputs, would give the clearest possible signals to health providers and patient groups about which treatment regimes had the best outcomes. This alone would probably do much to unlock funds for innovative – but effective – treatments.



- integrate IT systems into medical education  
This would help address the «cultural and professional» expectations alluded to earlier.
- pilot projects and the European Health observatory  
EU level funding could be used to trial solutions in areas which could benefit most. This may for example include areas with disadvantaged or sparsely populated areas and for which technical linkages could increase the effect of health care and reduce isolation. The EU could also fund schemes designed to ensure that budget reduction does not provide the impetus to use technology in such a way that some patient groups – especially the elderly - are left more socially isolated than before. Once again ensuring these pilots receive the public attention they need is essential so thought should be given for developing a public e-health portal with updated results perhaps on the European Health Observatory<sup>3</sup>.

<sup>2</sup> <http://www.euphoric-project.eu/>

<sup>3</sup> <http://www.euro.who.int/en/who-we-are/partners/observatory>



## policy development

All these policies could help and the EU could play a part in all of them but perhaps the most potent of all would be to work with patient groups and even regional bodies to ensure that different initiatives - ones that meet accepted targets in improved outcomes and efficient use of resources - receive widespread attention.

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