Research studies conducted in 2003 for Health Information Network Europe (HINE)* revealed a number of major concerns relating to healthcare IT policy areas in Europe. These included:

- discrete and outmoded government policies;
- little enthusiasm for providing central IT funding;
- predominance of ageing legacy systems in hospitals;
- little provision for integrated shared infrastructure;
- lack of large scale competitive service suppliers;
- problems with access, control and distribution of data.

Despite this, there are many signs that the healthcare IT market is at a critical flexing point with a period of substantial change expected over the coming years. This paper discusses the current situation for healthcare IT in Europe and the immediate prospects for change.

European healthcare IT facing period of unprecedented expansion

Over 25 years, healthcare has fallen progressively behind other service sectors in terms of relative levels of IT investment. Deployment of IT in many sectors has delivered major transformational change together with significant improvements in the personal productivity of service providers. These changes are reflected in many facets of modern society, and provoke the question: “Why has this not happened in healthcare?”

The answer lies partly in the nature of healthcare business processes themselves and partly in the delayed impact of consumer-based demand for improved healthcare services. Healthcare is one of the last great “unreconstructed” industry sectors in the Western World. Despite deploying amazing leading edge technologies in medical practice, basic service delivery concepts have remained effectively unchanged for 1000 years.

Healthcare business process differs fundamentally from other service industries. It is significantly more complex – and less amenable to a conventional systems approach. Personal health data is unusually voluminous, difficult to collect and changes over time. As medical technology has advanced, the process “components” that make up the full continuum of care have increased in number and sophistication.

Despite heroic efforts to cost justify higher expenditure, typical European investment levels in healthcare IT have remained static at around 1% of total revenue. Now, in the USA and Europe, a new set of common political imperatives is driving demands for additional funding to establish effective healthcare IT infrastructures:

- pressure to secure acceptable levels of patient safety;
- expectation of “consumer-type” access to health services;
- need for radical improvements in service productivity;
- impact of increasing complexity of healthcare processes.

These developments will generate unprecedented expansion in healthcare IT, with European eHealth expenditure predicted to approach 50 billion per annum by the end of this decade.
Demographic time bomb ticking for healthcare services

Increased life expectancy and lower birth rates have changed the balance between working (young) and retired (old) people. As average ages of the population increase, more and more elderly people are expected to survive for significant periods (tens of years) with medical conditions that require multiple medication and healthcare interventions. Latest population forecasts indicate that the number of retired and chronically sick people in Europe will exceed the working population by 2020.

Apart from the potential cost of dealing with this increase in demand for healthcare services, there is an even more serious problem in terms of lack of people (at whatever cost) to deliver services in the way to which we have become accustomed. These problems manifest themselves not only in failure of health provider systems to meet growing demand, but also in increasing consumer dissatisfaction with the quality and effectiveness of the sub-optimal services now being delivered.

Increasing clinical complexity driving need for IT support

To compound the problem, medical practice is growing exponentially more complex – with no sign of slowing. Coping with these changes presents a big challenge to individual clinicians (assimilating huge amounts of essential information) and healthcare enterprises (integrating interdependent services of many different healthcare professionals).

These challenges are typified by point of care IT support for electronic prescribing (EP). EP is considered a good measure of “gold standard” healthcare IT in the acute hospital sector. Current USA emphasis on reducing avoidable medication errors has generated a boom market for Computerised Physician Order Entry (CPOE) that will be replicated in European markets.

Prescribing processes in the USA are different from those in Europe. US clinicians enter prescriptions as notes in the patient record and then pharmacists transcribe these into the Medication Administration Record (MAR). Specific medication orders are supplied in individual packaging for each dose rather than as a bulk pack for distribution from ward stocks. In this respect, both legal status and supply processes are different. There is a potential opportunity to break these processes down into a more configurable approach where the same software components are appropriate for worldwide prescribing needs.

Medico-legal issues impacting European healthcare market

With widespread adoption of classic consumer attitudes towards healthcare delivery, there has been a rapid growth in European medical litigation. Given the alarming increase in adverse medical incidents (medication errors already result in deaths on a scale approaching that attributable to motor accidents), the rise in litigation levels is hardly surprising.

Other industries would be neither prepared, nor allowed, to accept this level of malfunction in critical and potentially life threatening circumstances. Industries such as air travel, motor manufacture and food distribution have had to learn how to cope...
with management of quality and risk to acceptable and sustainable levels in the face of rapidly growing mass markets. European Governments are now becoming aware of the scale of this problem in healthcare, and more effective deployment of IT support is seen as an essential ingredient for improving patient safety.

Use of electronic communication of orders for tests and procedures, in conjunction with standard order sets, profiles of care and clinical governance protocols not only reduces the risk of adverse medical incidents but also improves productivity and supply chain efficiency. Legal precedent indicates that courts are prepared to accept electronic data from order communication systems as evidence of compliance with best practice. Clinicians are also becoming aware of the potential personal benefits of practising in an institution where clinical governance and operational best practice are built into corporate computer systems.

**Radical improvements being demanded in healthcare productivity**

Experience in other comparable service industry sectors indicates that effective deployment of IT support at the point of care is a key requirement in order to achieve really big increases in productivity. For these service industries, commodity networking and communication technologies, together with growth of the Internet and associated technologies, have revolutionised service delivery and enabled transformational change. If similar pressures for change and productivity improvement in healthcare delivery are to be met, a step change in the level of IT investment and the delivery capability of industry is required during the next decade.

Current emphasis on discrete IT solutions at the point of care addresses a perceived need for more “better” clinical systems. But this has led to replication and support of existing processes, rather than utilising full strategic capabilities of IT for enabling transformational change. It has proved consistently difficult to cost justify IT investment at the current sub-optimal level and there is clear evidence that substantially higher investment is required to generate significant returns in terms of greater productivity and better value for money as reflected in scale, scope and quality of healthcare services.

However, the current structure of healthcare IT markets in the Europe has given cause for concern on several different fronts:

- lack of large scale well financed suppliers of healthcare enterprise systems;
- problems with growth and profitability for innovative small-scale suppliers of specialist clinical systems;
- difficulties for major technology vendors in working through specialist healthcare solution IT suppliers as distribution channels;
- challenge to identify appropriate funding sources for shared ICT infrastructure at regional or national level;
- reluctance of healthcare users to deploy high level strategic and change management support;
- failure to engage necessary resources for large-scale technical integration and project management.

While traditional healthcare IT suppliers are struggling with integration at the healthcare enterprise level, European Governments are now working directly with technology suppliers to focus on integration between different enterprises within healthcare communities at regional, national or even international level. Progressive globalisation of IT and telecommunications industries – and also pharmaceutical and medical device suppliers – is helping drive demand for larger scale integration. Electronic patient records (EPR) represent a pivotal application enabling patient information to be shared between different authorised users – including patients themselves.

**Governments taking action to develop eHealth infrastructures**

The need for urgent action to stimulate IT investment in healthcare is now focused
clearly on the role of Government in dealing with provision of universal access to shared Healthcare IT infrastructure. The political imperatives are clear – and beginning to be recognised on a worldwide scale. Because of its political structure, Europe is uniquely positioned to take a strategic lead in this important aspect of the eHealth market. In addition to active programmes for promotion of specific telehealth applications, Europe also has unique industry strengths in telecommunications, biotechnology and diagnostic devices.

But healthcare is rapidly becoming a global industry, and Europe can no longer expect to act in isolation from other leading markets, notably the USA. The challenge, therefore, is to engage effectively with European and global industry representatives to ensure that Europe is properly equipped to take maximum advantage from emerging eHealth technologies and solutions. This involves high-level collaboration with leading industrial organisations that have the financial and technological strength to tackle intransigent structural and cultural problems in healthcare delivery.

To meet these challenges, European Governments need clarity and confidence in areas of:

- strategic future vision for eHealth;
- plans for modernising care delivery;
- identification of operational benefits;
- incentives for transformational change;
- understanding of infrastructure needs;
- effective partnerships with industry;
- awareness of global market trends;
- acceptance of need for market diversity;
- cross-agency policy collaboration;
- willingness to invest adequate funds.

However, time is not on our side if the demographic challenge is going to be met. Complex healthcare systems will require 10 years for effective implementation – and 2020 is only 15 years away. Now is the time for action, and the immediate need is to identify practical short-term steps that will make a positive contribution towards long-term transitional strategies – and then provide the political leadership to ensure they are put into effect.