


Government Healthcare IT: Lessons From the U.K. Project and Opportunities in Europe

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Agenda

- What is the English National Programme for IT, how was it procured and how is it being deployed? What are the lessons for other health systems considering similar projects?
- What are the opportunities in the United Kingdom and elsewhere in Europe for healthcare vendors and consultants?
- Recommendations

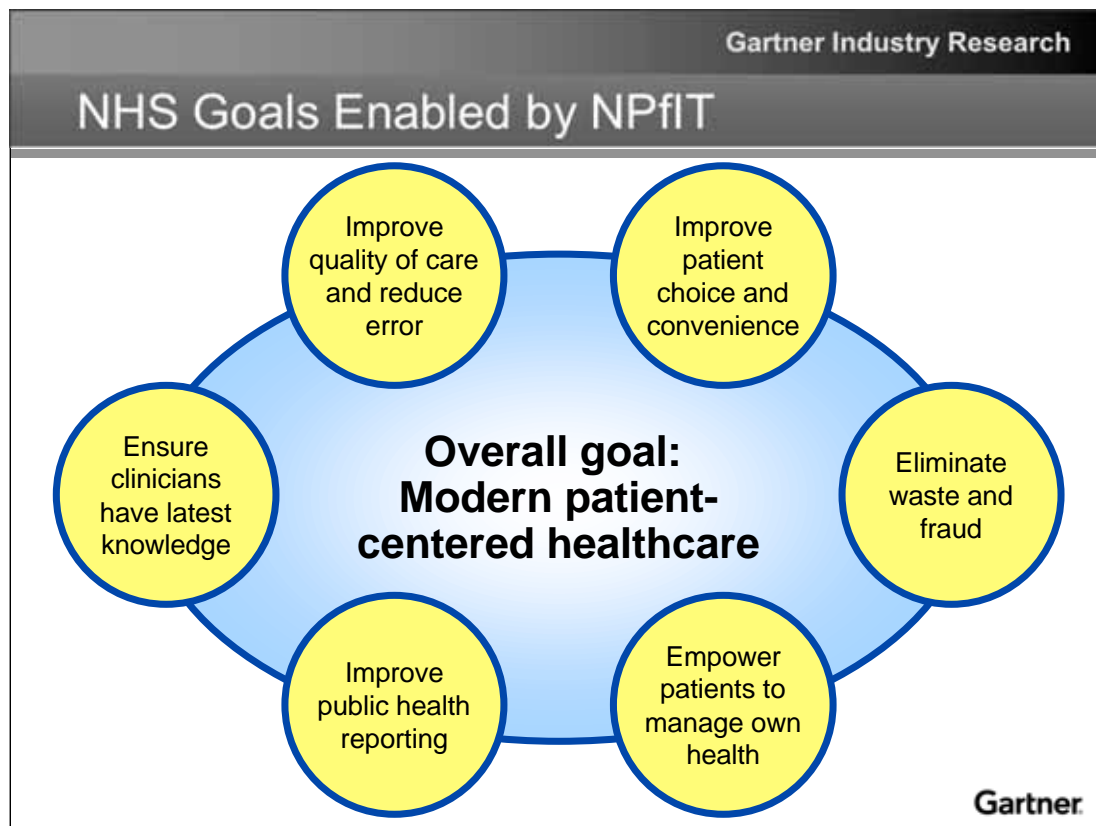
National Health Service and National Programme for IT: An Introduction

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- National Health Service
 - Founded 1948 to provide quality care to all equally
 - “The most significant event of the last century”?!
 - 1.3 million staff: third-largest employer in the world
 - NHS spending was £64 billion in 2003 (\$114 billion)
 - Centralized delivery, decentralized purchasing of care
- National Programme for IT in England
 - Largest IT procurement in the world
 - Initiated as part of overall health system reform
 - IT is seen as furthering the goals of the NHS

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The National Health Service (NHS) is of enormous political importance in the United Kingdom. In a recent opinion poll, 46 percent of British people ranked the creation of the NHS as the most-significant achievement of the past century. The next-highest scores were for establishing the welfare state (18 percent) and winning World War II (15 percent). Attachment to the NHS is such that no British government would ever consider abolishing it. The NHS is also of great economic importance to the United Kingdom. It is the United Kingdom's largest employer and consumed £64 billion in 2003; spending will rise by more than 7 percent per year between 2004 and 2008. In general, the NHS makes centralized decisions about which services are delivered and in which locations. In contrast, the purchasing of health services is done on a local level by primary care trusts (PCTs). The health systems of the United Kingdom's four countries are separately managed. The English National Programme for IT (NPfIT) was the heir of several earlier national strategies. The earlier strategies failed due to weak political support and because the money allocated to implement them was used for other purposes. The NPfIT was created in October 2002 with strong political backing, dedicated funding and the leadership of Richard Granger who had led London's Congestion Charge project, widely regarded as a success. It is considered to be the world's largest IT procurement, with £6.2 billion of contracts allocated so far. *Action Item: Ensure that government healthcare IT projects have firm political backing, strong leadership and dedicated funding.*



- *Improve patient choice and convenience:* Many patients miss their hospital appointments, resulting in wasted time for the NHS and delayed treatment for the patient. The Choose and Book service aims to allow patients to choose the time and place of their hospital visits and to book them instantly.
- *Eliminate waste and fraud:* Prescription data is entered three times: by the patient's general practitioner (GP), the pharmacy and the Prescription Pricing Authority. Electronic transfer of prescriptions aims to eliminate this duplication. It will also reduce fraudulent prescriptions by enabling pharmacies to check the validity of prescriptions and by allowing the NHS to monitor doctors' prescribing patterns for abnormalities.
- *Empower patients to manage their own health:* The NPfIT seeks to achieve this by giving patients access to their medical records and to nationally validated online health information.
- *Improve public health reporting:* Better data on disease trends will enable better resource allocation.
- *Improve quality of care and reduce medical error:* Lack of information is the principal cause of medical error. Often, clinicians do not know about a patient's drug allergies, test results or family history because the patient's medical records are lost. Clinicians do not know the latest treatment protocols and drug safety data because they do not have time to read them. Information sharing is fundamental.

Action Item: Ensure that the healthcare IT project is part of an overall health system change project.

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NPfIT Structure: Local Services

5 LSPs

Five local service providers, one per region

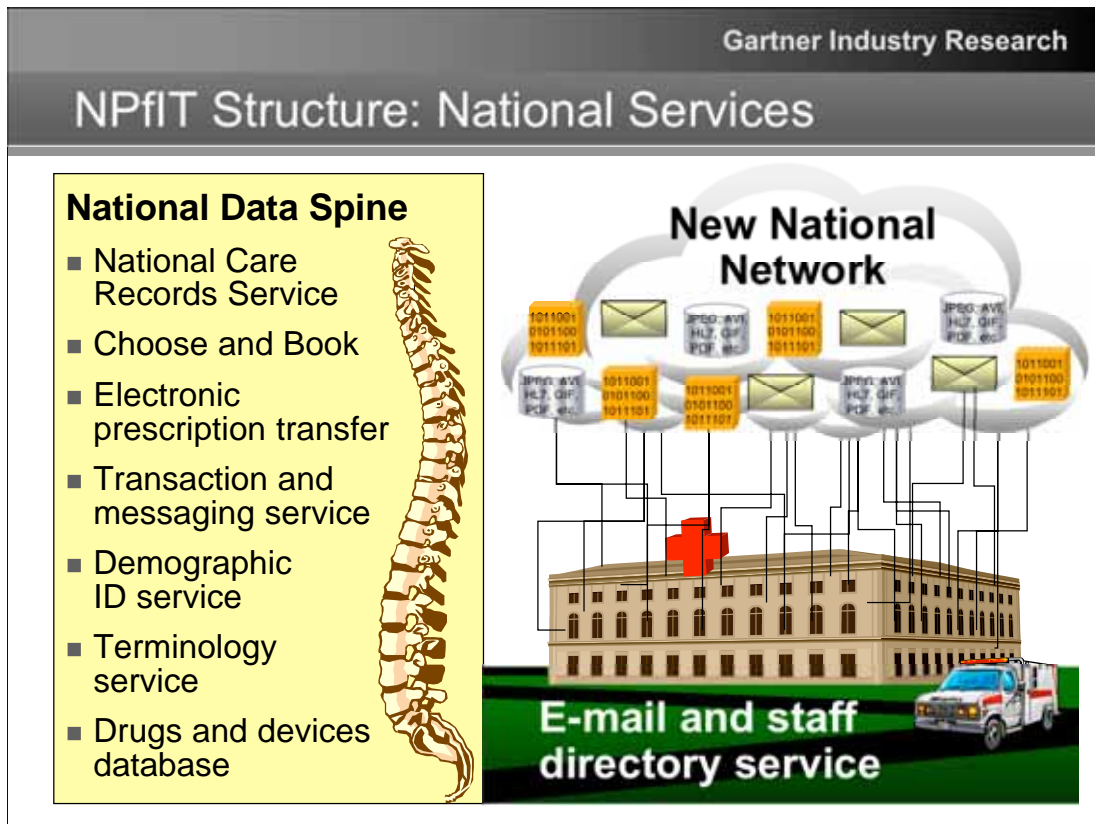
- Each region has approximately 10 million people, 50 acute hospitals, 1,850 GP practices, 5,800 GPs, 21,800 hospital doctors
- Each LSP is a consortium led by a prime contractor
- LSP has exclusive right to deliver core bundles of functionality
- Full IT outsourcing: hardware, software, services
- Penalties for delays and underperformance

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Five local service providers (LSPs) have been appointed to provide applications to all acute-care trusts (hospitals) and primary-care trusts (GP offices) in England. Each LSP has the exclusive right to deliver core “bundles” of functionality to its designated region or “cluster.” The core bundles include:

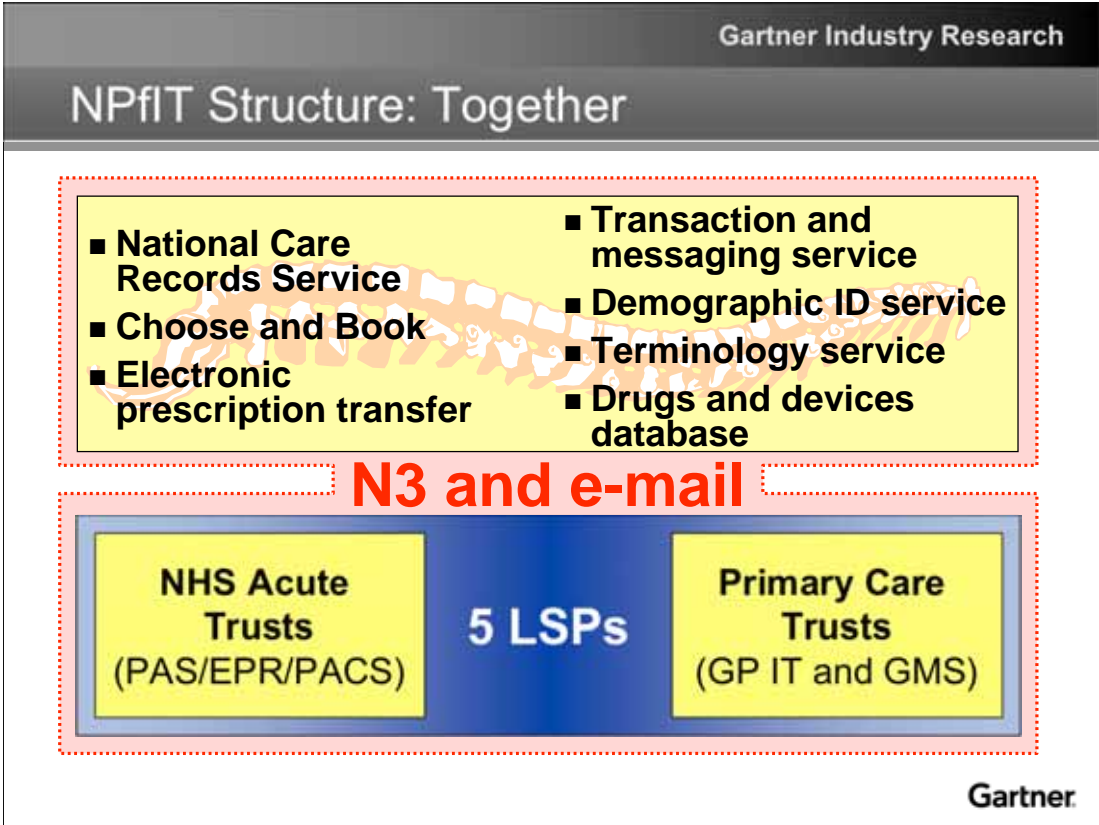
- **Administrative functionality:** patient registration, appointment booking, order entry, results reporting, support for new General Medical Services GP contracting arrangements
- **Clinical functionality:** electronic patient record, electronic prescribing, picture archiving and communication systems (PACS) for digital images, clinical decision support, knowledge management

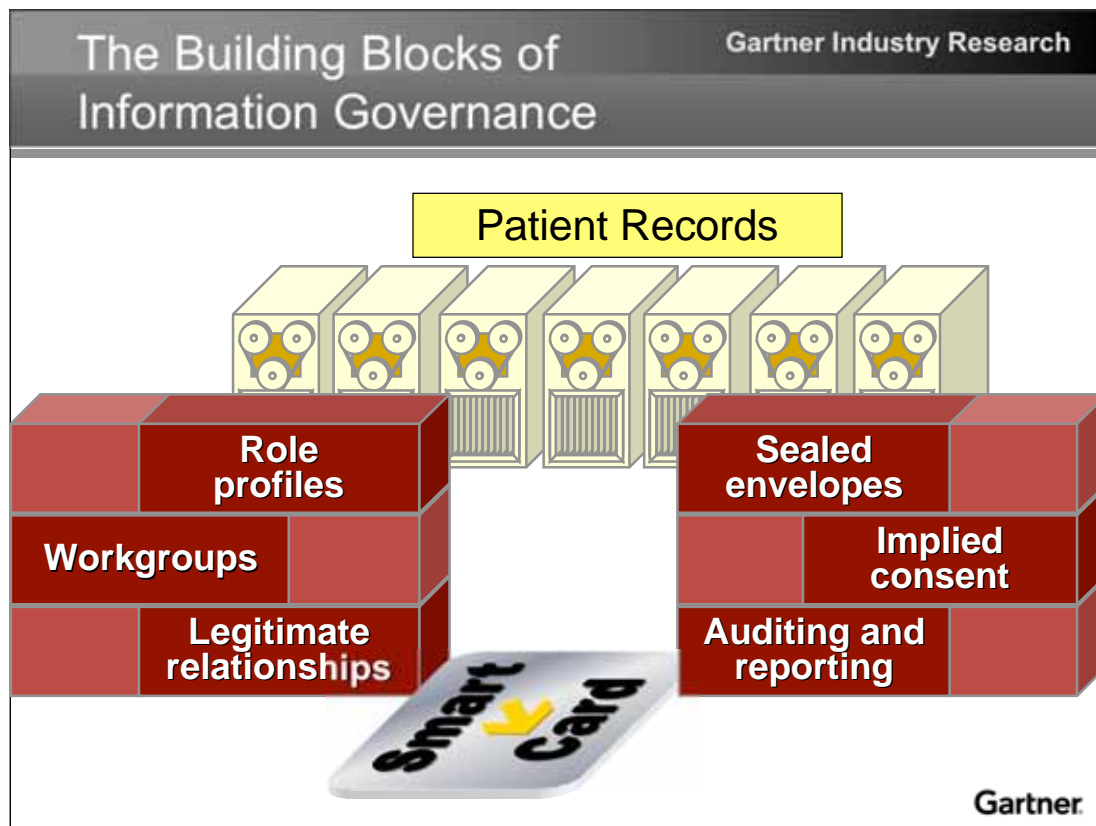
The NPfIT has defined additional bundles of functionality (such as radiology, laboratory, document management and financial applications) for which LSPs will compete for contracts. As in many outsourcing agreements, the LSPs deliver not only core applications but also the hardware to run the applications and the services necessary to design, implement and support them. Each LSP is a prime contractor heading up a consortium of vendors. As prime contractor, the LSP is responsible for project management and takes on most of the risk. The NPfIT contracts contain strict penalties for delays or underperformance and enable the NPfIT to replace an LSP that is in default. The risk for LSPs is compounded by the fact that they are not paid until they deliver the contracted services. *Action Item: Remember that in any outsourcing arrangement, supplier relationship management is key.*



The National Data Spine ties the NPfIT together. Its central feature is the NHS Care Records Service (NCRS). This will be a data repository containing a summary of clinical events. Each time a patient is treated, local applications will send summary data to NCRS. The intention is that NCRS will contain all the information that clinicians need to treat a patient. NCRS will also contain links to the complete patient records held at the local level so that clinicians can access additional details as needed. In addition to NCRS, the spine will host several national services, including Choose and Book; electronic prescription transfer; a transaction and messaging service that will route data transactions to their correct destinations; a demographic service to verify the identity of patients and clinicians; a terminology service to ensure consistent representation and coding of clinical data; and a database of drugs, devices and drug/drug interactions to facilitate prescribing and clinical decision support. The New National Network (N3) is a broadband data network that will underpin the NPfIT and replace the NHSNet. The e-mail and staff directory service will give all NHS employees an e-mail address that will remain with them, regardless of where in the NHS they work. It will also provide an electronic staff directory.

Action Item: Engage clinicians to define a minimum set of data necessary to treat a patient.





Information Governance (IG) is the NPfIT’s term for security and confidentiality protection. Although the NPfIT is arousing fear among some constituencies (Privacy International recently voted it “most appalling project”), it contains numerous provisions designed to protect patient data.

All users will need smart cards to access patient data. Users will be classed according to:

- Job role profiles, e.g., nurses/cardiology nurses/cardiology nurses authorized to prescribe drugs
- Workgroups, e.g., all clinicians on a particular ward


Only those users with an appropriate job role and in an appropriate workgroup will be considered to have a legitimate relationship with the patient and, thereby, the authority to view the patient’s records. Under the model of “implied consent,” the NHS assumes that when a patient seeks care, he or she consents to his or her data being shared with those providing direct care and having a legitimate relationship with the patient. The exception is certain categories of data, such as mental and sexual health, which are restricted to professionals in these domains. Patients will be able to place additional data in “sealed envelopes” that will not be accessible to any clinicians. Access by clinicians to patient data will be continually audited by IG applications, and reports will be provided to local privacy ombudsmen (known as Caldicott Guardians).


Action Item: To gain the confidence of clinicians and the general public, ensure that you have a robust, sophisticated and publicly visible security framework.

The Physician View: Common User Interface

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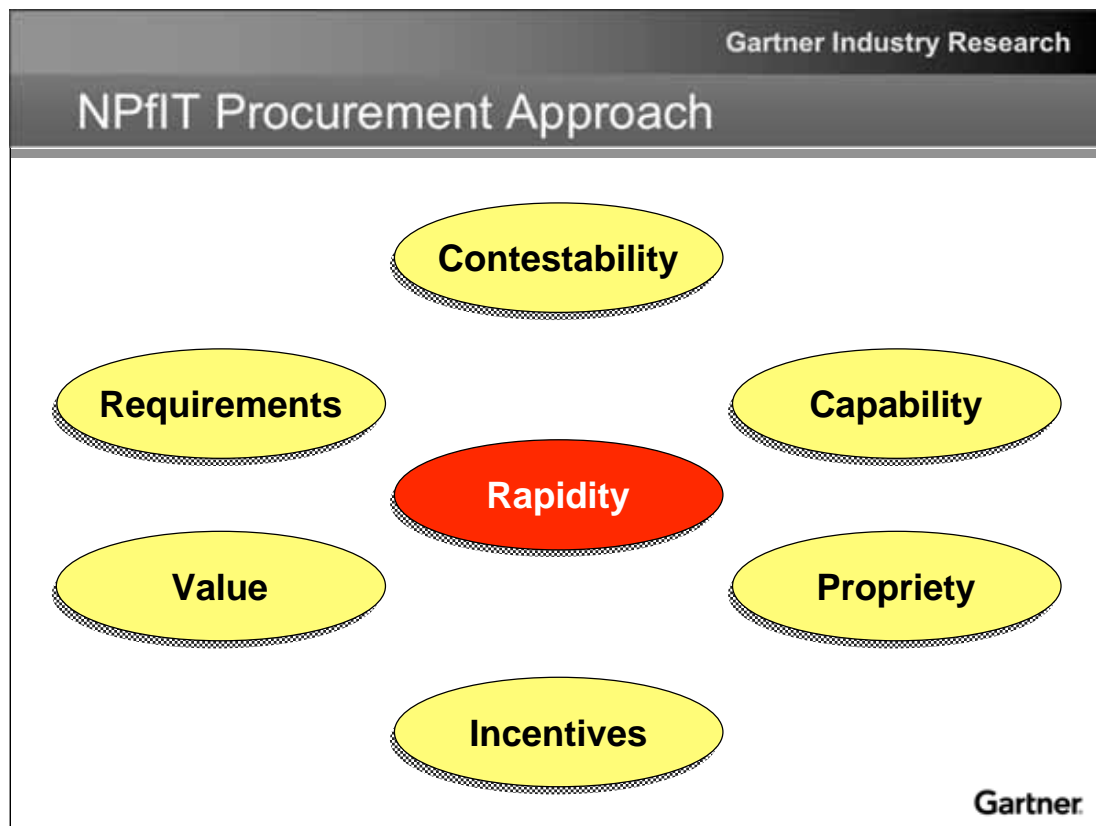
- Knowledge management
 - Medical knowledge (National Library for Health)
 - Patient data: orders, results, patient administration
- Clinical decision support
 - Alerts
 - Care pathways (Medic to Medic)
- Must coordinate with physician workflow





The volume of medical knowledge increases exponentially each year, and no clinician can keep up. The NHS National Library for Health is a rich Web-based repository of medical information, but GPs, who have an average of seven minutes with each patient, do not have time to consult it. The NPfIT is developing a common user interface that all clinicians will use to access local patient records and NCRS. The interface will include knowledge support so that when a clinician types in a medical condition, a pop-up window will display the latest online knowledge on that condition in an easily accessible format. The interface will also include clinical decision support. Decision support incorporates alerts for drug-to-drug interactions and allergies, as well as care pathways. Care pathways are model patient journeys from initial presentation through testing, diagnosis, treatment and follow-up care. They are developed using peer-reviewed evidence and are based on the understanding that although clinical care is an art as well as a science, some treatments are more effective than others. Care pathways are an important tool in standardizing medical treatment. They will be used only if clinicians find the decision support systems that underpin them to be informative, unintrusive and easy to incorporate into their care processes. Advice and suggestion must predominate over prohibition and coercion.

Action Item: Ensure that patient data and information on drugs and treatments is delivered to clinicians in an easily accessible format that integrates into their workflow.



The NPfIT procurement process sought to follow a set of core principles:

- Requirements were defined in advance.
- Contestability: The NPfIT tried to ensure more than one supplier to promote price competition and better quality, and to provide fall-back options in case a supplier defaults.
- Capability: The NPfIT required vendors to build prototypes of their proposed applications at a Proof of Solution site and to demonstrate the scalability and interoperability of the applications.
- Value: By aggregating purchasing power, the NPfIT achieved average price reductions of 50 percent over prices that would have been obtained if individual NHS trusts had done the purchasing.
- Incentives: Vendors are paid only on delivery and are penalized for delays and underperformance.
- Propriety: The NPfIT sought to avoid conflicts of interest and established an audit trail with certification by third-party advisors.

Key to the procurement process was speed. Historically, NHS IT procurements were so slow that by the time the solutions were deployed, they were technologically obsolete or the user needs had changed. The faster the procurement process, the less costly it is for the technology provider and purchaser.

Action Item: Ensure that the procurement process is fast, but do not cut corners.

Centralized Procurement Is a Key Imperative

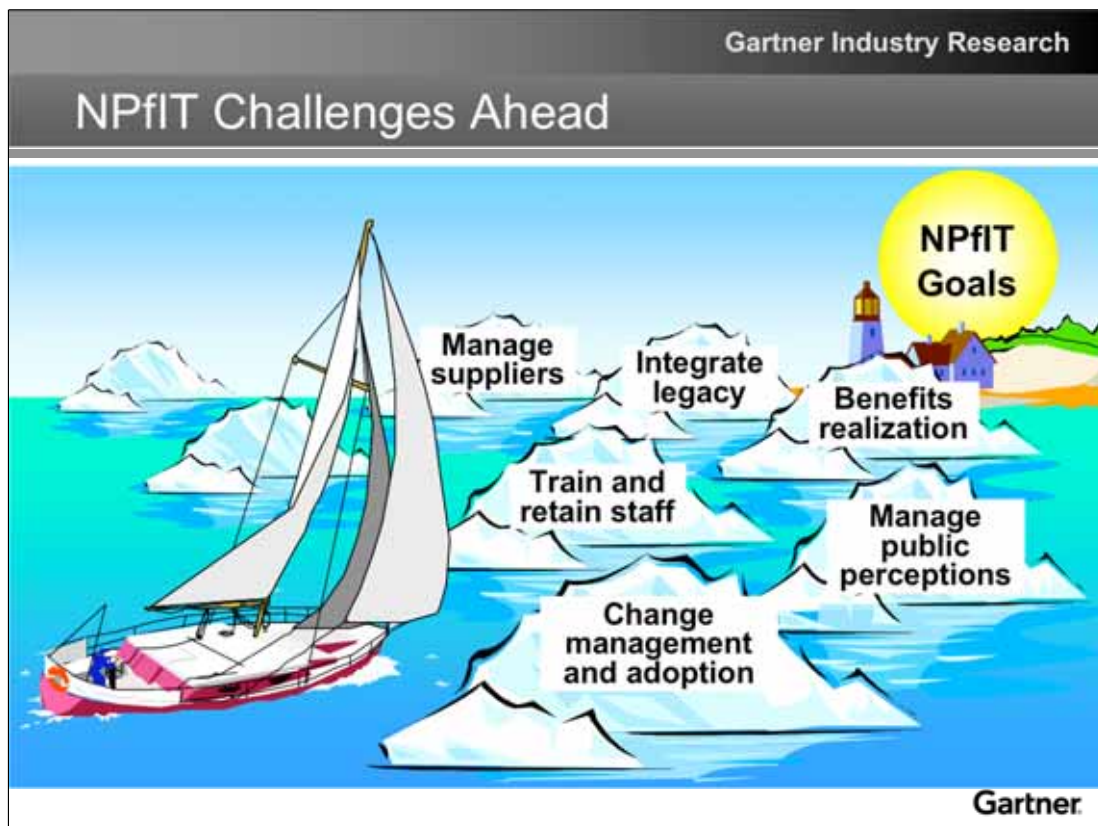
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- Government IT procurement is often done at the local level, which lacks sufficient skills and clout
- U.K. Office of Government Commerce negotiates centralized contracts on behalf of the government
 - OGC claims it saved the U.K. government £500 million per year during 2002 and 2003
- OGC model of centralized procurement was applied by NPfIT
- Health systems need a central body to conduct procurement

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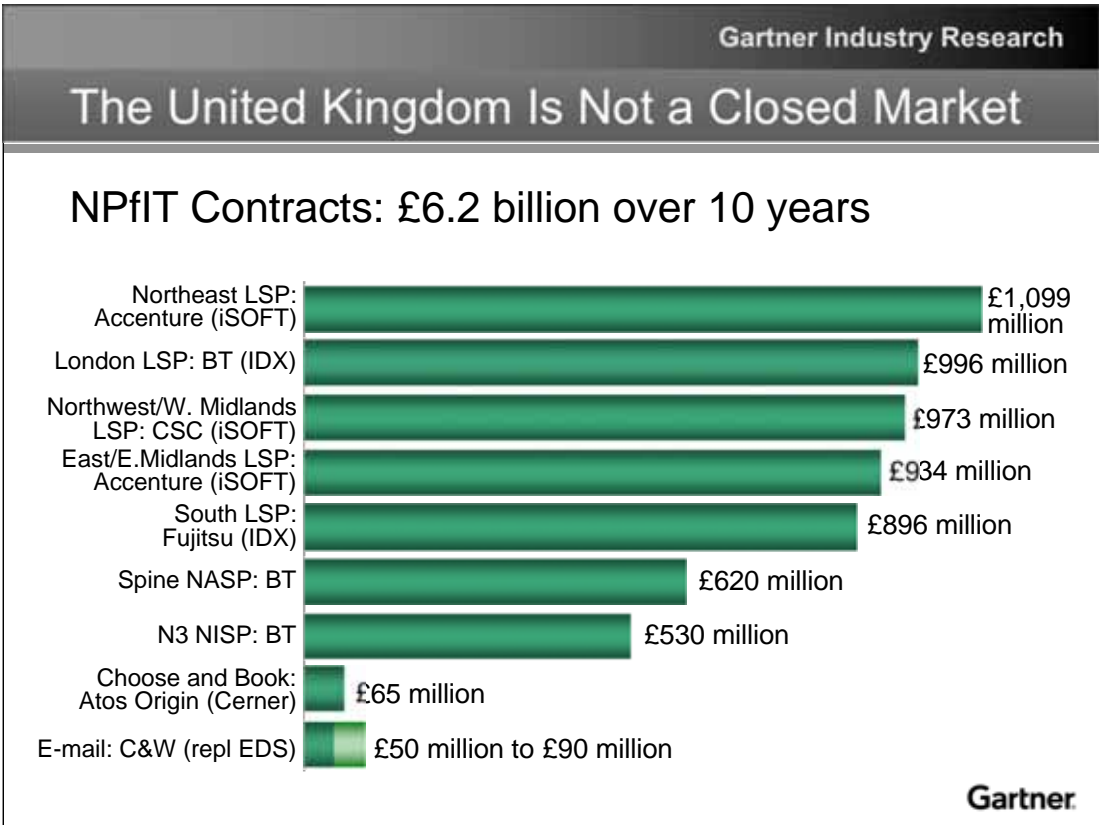
Most European health systems are considerably more decentralized than the U.K. NHS. Health services are the responsibility of cities or provinces rather than the central government, and healthcare IT solutions are procured at the local level. The danger of this approach is that, often, the local level lacks professional procurement skills and does not have sufficient negotiating clout to obtain the optimal deal. The U.K. Office of Government Commerce (OGC) was formed in 2000 to address this challenge. OGC negotiates framework contracts on behalf of government organizations that include a single discounted price governmentwide. OGC also provides oversight of procurements through a review process known as Gateway. OGC claims that its services saved the U.K. government £500 million per year during 2002 and 2003. The OGC model of centralized procurement was applied by the NPfIT, which negotiated enterprisewide agreements with Oracle, Cisco Systems, EMC, HP, SeeBeyond, Sun Microsystems, Tata and Health Language. We expect governments elsewhere in Europe to develop OGC-like organizations. Although spending decisions in health systems are often made regionally or locally, we recommend that a central body take responsibility for contract negotiation to obtain the best deals.

Action Item: Set up a central procurement organization for your health system to promote best practices in procurement.



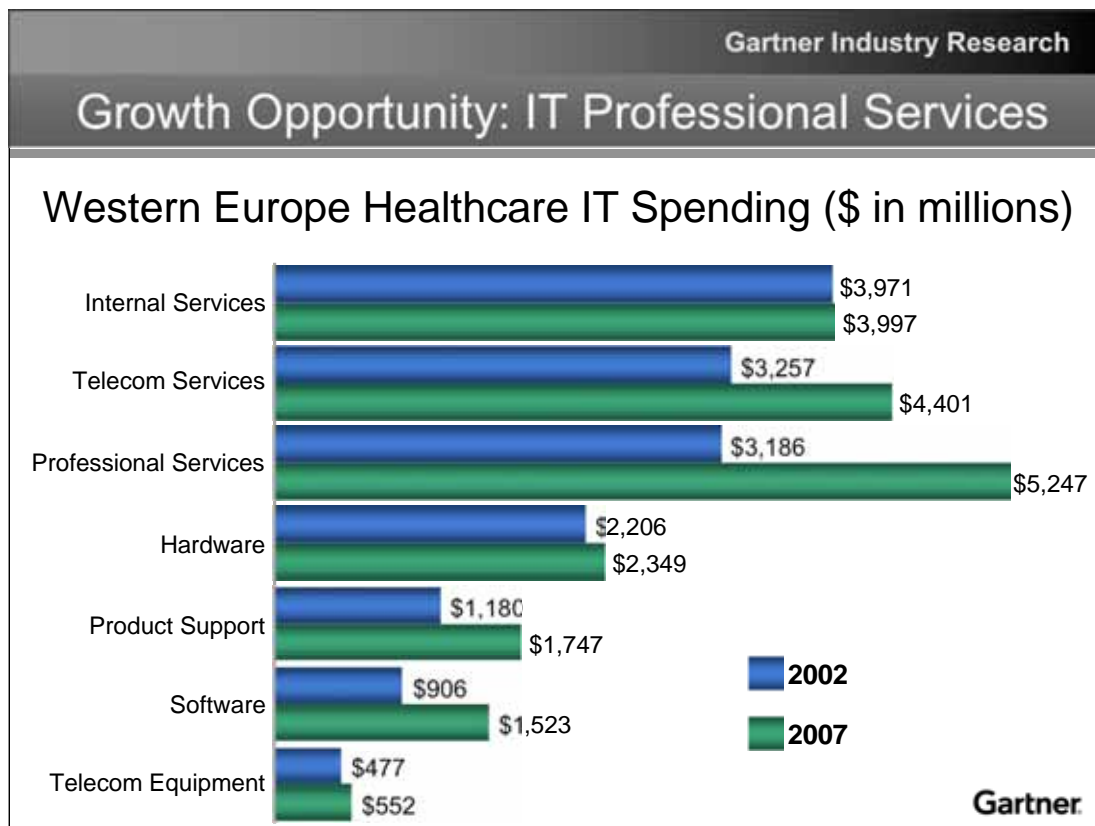
IT systems are of no value unless end users actually use them and derive benefit from them. Getting clinicians to adopt new IT systems and potentially change their working practices requires extensive training and change management. Because the NPfIT was designed centrally and procured rapidly, there was little time for widespread consultation with clinicians at the local level. Many clinicians feel left out; a vocal minority are openly hostile. A special NPfIT taskforce was created to address clinician engagement and the related problem of benefits realization. To justify the money being spent on it, the NPfIT must convince clinicians, taxpayers and the political establishment that it will deliver the benefits promised. However, it is notoriously difficult to measure the benefits of IT, particularly when IT is part of a business change project involving many factors. Integrating the myriad of applications into the NPfIT is another top priority. The NPfIT requires vendors to fund the costs of bringing their applications into compliance and has created a taskforce to decide which applications to retain.

Action Item: When planning a healthcare IT project, give top priority to clinician engagement, benefits realization and legacy system integration.



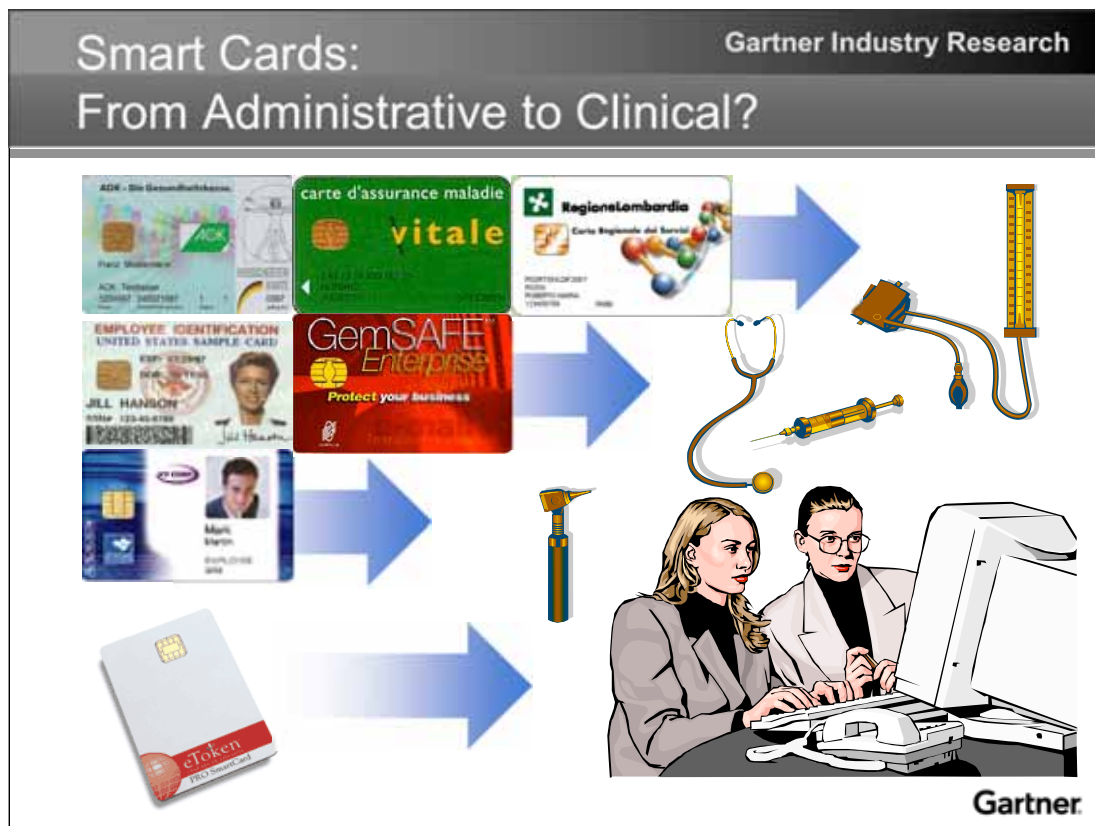
The NPfIT contracts total £6.2 billion over 10 years. This is in addition to baseline NHS IT spending of £850 million per year. Thus the NPfIT will cause average annual NHS IT spending to increase by 73 percent. Among prime contractors, the major winners were BT and Accenture; among LSP subcontractors, the major winners were iSOFT and IDX. Vendors and consultants should not assume that the award of the NPfIT contracts closes off opportunities in the U.K. market. Significant remaining opportunities in England include delivering additional bundles of NPfIT functionality, and delivering software and consulting services not covered by the NPfIT. Top opportunities in software include mental health, social care, disease management and departmental services. As for consulting, the British Computer Society estimates that the cost of making the changes in working practices necessary for doctors to use the data spine could exceed by four to eight times the £2.3 billion allocated to the NPfIT for 2004 to 2006. In addition, there are important opportunities in Scotland, Wales and Northern Ireland, which are launching their own national programs.

Action Item: Be aware of further opportunities in the U.K. market.



The greatest area of growth in healthcare IT will not lie in software, hardware or telecommunications products, but rather will be in IT professional services. This includes:

- **Consulting:** To be successful, healthcare IT projects must be part of wider business change projects. Consulting services help health systems engineer and manage the business change.
- **Development and integration:** The greatest technical challenge will not be in developing and deploying new applications; it will be in upgrading and integrating existing applications. It will also be in training users to get the best out of these applications.
- **IT management:** The large-scale outsourcing arrangements in the NHS NPfIT will become more common as health systems recognize that IT management is not their core strength. IT management includes operational services, application management and help desk management.
- **Business process outsourcing (BPO):** Full BPO arrangements are not suited for the clinical side of healthcare because the processes require customized, specialized expertise. BPO makes sense for back-office functions such as financial management, claims processing and supply chain management.



Opportunity: Deployment and integration of smart-card-enabled healthcare networks.

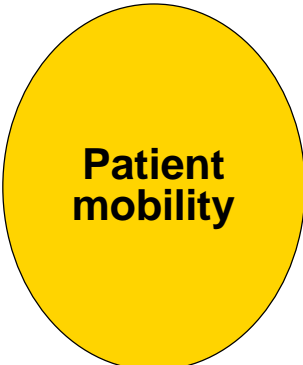
The driving forces behind healthcare smart cards are the desire to prevent benefit fraud and to verify the identity of those seeking health services; to ensure the security of electronic patient data and prevent unauthorized access by health service staff or external intruders; and to improve access to healthcare networks to enable sharing of administrative and clinical data held at the local level.

Healthcare smart cards were introduced in European insurance-based health systems such as France, Germany and Belgium. The first generation of cards is used purely for administrative purposes — that is, to verify that patients are covered by health insurance and to enable doctors to generate and submit claims. A second generation of cards is being issued in many European and Asian countries. These are also used for clinical purposes. The most common uses are to store emergency health data (e.g., blood group, allergies, next-of-kin information, organ donation preferences, immunization records) and to provide access to patient records stored at hospitals and doctors’ offices.

Typically, security is assured by a rule that data on the cards can only be accessed when the security key codes of the doctor’s and patient’s cards are mutually authenticated.

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The European Commission Gets Active



Patient mobility


E-Health Action Plan — Four guiding principles

- Interoperability and integration
- Matching supply and demand
- Equal access for all
- Electronic health cards



Coordinating national health reforms

European Health Insurance Card



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The European Commission (EC) is a driver of change and offers opportunities in itself.

In May 2004, the EC launched the E-Health Action Plan. In addition to the four guiding principles, the plan includes specific goals. By 2005, the EC wants a portal that allows clinicians, administrators and patients to access patient data. By 2006, the EC wants a common approach to health data exchange and patient identification. By 2008, the EC wants broadband infrastructure in all European health systems.

The two other healthcare initiatives of the Commission are: 1) patient mobility — matching supply of services with demand; and 2) coordinating national health reforms so that best practices are shared. Although the EC has no jurisdiction over healthcare in the member states, it has an important advocacy role. The EC has spent approximately 500 million euros on healthcare IT projects during the past 10 years. Moreover, countries have a powerful economic interest in collaborating on healthcare. The European Health Insurance Card is being introduced to replace the E-111 form used by European Union citizens to verify eligibility for care in other countries. The card will also give clinicians access to patients' data.

The opportunities offered by the EC to IT service providers are to help set up and support the portal, to deploy and support a high-speed network infrastructure, to set up IT systems for matching healthcare supply and demand, and to integrate the European Health Insurance Card with patient data held locally.

Germany: Clinical IT Spending on the Rise

- Private health system with competing entities and historic neglect of clinical IT. This is changing: 
- Government mandate to collect outcomes data
- Need to link to healthcare smart card as of 2006
- New system of payment by procedure
 - Forces higher-cost hospitals to use IT to become more efficient
 - Gives lower-cost hospitals extra funds to improve care
 - Puts onus on insurers to invest in IT for utilization review

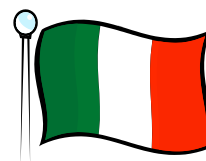
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In Germany, hospitals and health insurers are private entities that compete with one another. This results in widespread availability of care, but also duplication, overspending and poor coordination. German healthcare providers have traditionally spent a lot of money on administrative applications while neglecting clinical applications. Clinical IT spending is increasing rapidly for several reasons:

- The federal government has mandated that healthcare providers collect outcomes data and send it to a national organization responsible for clinical quality improvement.
- Hospitals need to collect clinical data to link to the healthcare smart card that will be rolled out in early 2006.
- In 2002, the German government introduced payments by procedure. Insurers used to pay hospitals according to how many days a patient spent in the hospital, which encouraged excessive hospital stays. They now pay fixed charges per procedure, which forces higher-cost hospitals to become more efficient. These hospitals are investing in clinical IT systems to track and control the costs of care. The new system also provides lower-cost hospitals with extra cash to spend on IT systems to improve patient care and satisfaction. The onus is now on insurers to prevent over-treatment by ensuring that healthcare providers only perform procedures that are necessary.

Lombardy: Regional Network Approach

- Regional integration vs. central procurement
- Regional portal will provide access to clinical and administrative data, but data will remain at local level
- Access by smart cards for all health professionals and citizens
- Electronic appointment booking
- More than 400 million euros over nine years
- Likely to expand to other Italian provinces
- Opportunity to sell applications and integration services



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Through 2009, most European healthcare IT initiatives will be based on regional integration rather than central procurement (0.8 probability).

Since most European health systems are decentralized, there is an inherent preference for regional IT solutions. Without the economies of scale of the U.K. NHS, many regional governments are unable to afford large-scale procurements and instead are pursuing regional integration projects. A good example is the network being set up by the Italian province of Lombardy. A portal will provide access to patient records, test results, prescriptions and administrative data; the data will be held at local organizations. Penetration of administrative and clinical applications is quite high, so little procurement of applications is necessary. The portal will be accessed using smart cards that will be provided to all health professionals and 9 million citizens. Patients will be able to use the portal to book appointments. The portal will be in place by early 2006 and will cost more than 400 million euros over nine years.

The Italian government announced a project to distribute health smart cards to all citizens. It is likely that other Italian provinces will copy the Lombardy project. This will generate opportunities for vendors to sell applications and integration services to healthcare providers in provinces where healthcare automation is less prevalent than in Lombardy.

Scandinavia: Denmark Leads the Way

■ Denmark

- Medcom: National network for healthcare data exchange
- National Patient Register
- Portal: sundhed.dk
- Regional EPR procurements by year-end 2006
- National architecture and strategy under development



■ Sweden

- Stockholm County Council (25% of population)
- Procuring countywide EPR, deployment by 2009

■ Norway

- Healthcare reform: five autonomous health regions created in 2002
- Standardizing IT governance, starting EPR procurements
- Regional networks for data exchange

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Opportunities in Scandinavia include electronic patient record (EPR) procurement, consulting and integration. Scandinavian countries are among the most advanced in terms of IT connectivity, bandwidth availability and penetration of mobile technologies. Thus, there are fewer infrastructure and cultural barriers.

Denmark is probably the leading European country in healthcare automation. A national data network, Medcom, conveys discharge letters, laboratory reports, prescriptions and reimbursements. A national patient register collects hospital data such as test orders and results. A national portal was launched in early 2004 and will provide e-booking, electronic prescription transfers and reimbursement, clinical guidelines and drug reference information for clinicians, care quality information for consumers and health planners, consumer disease management and patient/clinician e-mail. National data standards and architectures are being developed. An EPR procurement is under way at the health region level.

In Sweden, Stockholm County Council is procuring an EPR that will be deployed by 2006. Other regions of Sweden are likely to follow suit.

In Norway, until recently, healthcare was under the control of the provinces. Five health regions were created in 2002. They are starting EPR procurements and are standardizing infrastructure. The central government is playing a coordinating role.

Recommendations for Health Systems

- Ensure that IT projects have firm political backing, strong leadership and dedicated funding
- Ensure that the IT project is part of an overall business change project
- Set up a central procurement organization for your health system to promote best practice in procurement
- Ensure that you have a robust, sophisticated and publicly visible security framework
- Ensure that patient data and information on drugs and treatments is delivered to clinicians in an easily accessible format that integrates into their workflow
- When planning a healthcare IT project, give top priority to clinician engagement, benefits realization and legacy system integration

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Recommendations for Vendors and Consultants

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- Key opportunities are in professional services: consulting, development, integration, training, IT management and BPO
- Major opportunity in deployment and integration of smart-card-enabled healthcare networks
- Target markets for growth:
 - European Commission
 - United Kingdom (NPfIT, rest of English NHS, other U.K. countries)
 - Germany
 - Scandinavia
 - Ireland

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