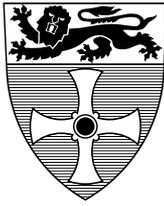


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# COMPUTING SCIENCE

Re-configuring the health supplier market: Changing relationships in the primary care supplier market in England

B. Sugden, R. Wilson and J. Cornford.

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Bob manages the computing support team for the School of Computing Science, which includes 4 Computing Officers and 1 Senior Technician. Bob is a Chartered Engineer and a Fellow of the British Computer Society. His research interests encompass the interrelationship of system requirements, design, organisational culture and business processes, via work at CSR and the Sowerby Centre for Health Informatics at Newcastle (SCHIN), where he was Director of Informatics. Prior to joining the University he worked in industry, the health service and local government, including directorships in a number of companies.

### Suggested keywords

PRIMARY HEALTH CARE INFORMATION SYSTEMS;  
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NPFIT,  
CONNECTING FOR HEALTH

## **Re-configuring the health supplier market: Changing relationships in the primary care supplier market in England**

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### **Keywords:**

Primary Health Care Information Systems; Electronic Health Record (EHR), Integrated Care Record Service (ICRS), NPfIT, Connecting for Health.

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## **Introduction**

The English National Programme for IT (NPfIT), now delivered by the new Department of Health agency NHS Connecting for Health (CfH), aims to bring modern computer systems into the NHS to improve patient care and services. Over the next ten years, the National Programme for IT plans to connect over 30,000 GPs in England to almost 300 hospitals and give patients access to their personal health and care information, transforming the way the NHS works by enabling service-wide information sharing of electronic patient records.

According to CfH<sup>1</sup>, “the National Programme has enormous potential to improve patient safety, patient outcomes and the working lives of primary care teams. It also, of course, risks being disruptive”. They go on to say that “General practice has the most advanced clinical record-keeping in the NHS .... let down by the links between our practices’ clinical database and the wider NHS”. The vision is that “Within a few years, each patient will have a Summary Care Record containing key diagnoses and problems, current and recent prescriptions, and important information such as allergies and drug reactions. Discharge and out-patient care summaries will be there as will highlights from out of hours or A&E care. The Summary Care Record will be available to a health professional when a patient consults them anywhere in England”.

In pursuit of these goals, NPfIT has re-configured the health supplier market in England. In particular the changed relationships in the primary care supplier market have caused considerable concern amongst clinicians. NPfIT has also swept aside the existing relationship structure between the Department of Health (DH), the National Health Service (NHS), primary care computing suppliers and General Practitioners (GPs). The implications of this re-configuration are now becoming apparent and have potentially significant affects on the delivery of information and information systems in the health context. This paper explores the changes in these relationships by drawing on comparison with the previous system for procuring information systems for primary care (which ran for much of the 1990s) and characteristics of the overall NPfIT procurement/contracting process. The differing responses from the three major primary care computing suppliers to

these changes in the environment are analysed. The paper concludes with a discussion of the potential implications of this approach to procurement of healthcare systems.

### **The world before NPfIT: Reimbursement and Requirements for Accreditation**

Requirements for Accreditation (RFA) was first introduced in April 1993 to ensure that primary care computer systems provided agreed core functionality and conformed to national standards. The DH recommended that health authorities should only reimburse primary care practice expenditure in respect of systems if the expenditure related to a system accredited to RFA standards.

The goals of RFA were stated in the final version, RFA99, as:

- To promote the development and use of information management systems that deliver benefits for patients and clinicians.
- To facilitate the implementation of the NHS IM&T strategy, and
- To ensure value for money.

To achieve these overall goals RFA99 focussed on:

- The shared primary care Electronic Patient Record (EPR)
- Electronic communications - GP data exchanges with other GPs, with other care providers, and with other NHS organisations, via appropriate connections
- Data aggregation & analysis
- Decision support
- Management and administrative support
- Privacy and Safety - quality, data confidentiality, integrity & medico-legal validity
- Open and compatible systems
- Common user interfaces (e.g. GUIs)
- National data dictionaries (e.g. Read3, Drugs)
- Supplier and organisational requirements - Training, education, implementation and support services

These issues do not seem dissimilar from those which occupy NPfIT, but the approach to

setting minimum standards and achieving implementation was very different. Although RFA99 was produced against the background of *the New NHS* and *Information for Health*<sup>2</sup>, it was decided that the main aim of RFA99 should be to refine and clarify existing functional requirements already present in primary care systems, in order to provide a firm basis on which future requirements for GP systems (single enterprise) could be built.

This is typical of standards bodies, which commonly seek to reach agreement on a baseline rather than seeking to establish the way forward in innovating new functionality. RFA99 states that: "... in many areas we cannot yet be specific about the detail of the developments that will flow from Information for Health implementation and the impact of other changes in primary care such as Primary Care Group/Trust implementation", confirming its role as a follower rather than a leader.

However, RFA99 incorporated standards for links to laboratory test results, a novel specification for decision support<sup>3</sup>, and a standard for collection of comparative data [MIQUEST]. As almost all primary care systems were compliant with RFA99 standards it ensured that there was an installed base of systems on which initiatives such as Electronic Transmission of Prescriptions ETP<sup>4</sup> and GP2GP record transfer<sup>5</sup> could be piloted.

In terms of its defined objectives, the RFA99 initiative can be seen as successful. It raised the general standard of primary care systems to a baseline level of functionality which supported good, paper-light practice for medical records. It did not hinder innovation or diversity within and beyond that baseline. Although the primary care systems market cannot be seen as operating as a classic free market, RFA99 allowed considerable choice of supplier by the primary care practice. Complete freedom of choice was possible if the option of cost reimbursement from the local health authority was declined.

For all its success over many years, RFA did have failings. As is common with standards bodies, its standardisation process included representatives from the supplier community. If standard setting is seen as a game of power and dominance between the participants then the interests of the actors are clearly dominant in their input to the standard setting process. It has been suggested that suppliers are not pro-active in the standards setting process

unless they can see that it is in their commercial interest. Clearly, since the accreditation process directly influenced their ability to market their products, it was in their interest to influence RFA to their advantage. The principle actor in this was the Computer System Suppliers Association (CSSA) which represented the majority of suppliers, with the notable exception of a single supplier with a very large market share (EMIS). The cost of developing new version of systems is considerable, and it may be seen to be in the interests of suppliers to constrain standards, particularly in a market where the majority of revenue is obtained from ongoing support to an installed base of customers, rather than from new customer acquisition or the sale of enhanced functionality.

Together with user input, both from representatives of the GP community and local health authorities, and the NHS Executive, the RFA process was effectively self-governing, both in standard setting and enforcement via the NHS Information Authority (NHSIA) and reimbursement from local health authorities. A balance of power was ensured by the structure of the working groups contributing to the process. This might be seen as an opportunity for a pragmatic and gradual approach to system development and standardisation, with constant feedback from the development and implementation of systems and with open access and informal procedures, as evidenced in the Scottish approach to standards development in primary care<sup>6</sup>.

However, the sanction of non-reimbursement of costs for non-compliant systems constrained the standardisation process to a lowest common baseline approach since any attempts to innovate might have prejudiced the commercial survival of some of the suppliers involved. In this way, RFA99 can be seen to fail as a beacon of innovation, and at worst it can be seen merely as a grim reaper designed to remove the weakest suppliers from the marketplace.

### **The NPfIT procurement paradigm: the Portfolio Model**

The momentum for the Connecting for Health was established by 'Information for Health' (1998)<sup>7</sup> which was published by the National Health Service (NHS) as a framework for the development of information services for the NHS. This report led to a range of activities.

The most significant one in this context was the Electronic Record Development and Implementation Programme (ERDIP) commissioned by the NHS Information Authority (NHSIA). The aim of the programme was to promote in-service development and demonstration of best practice and progress towards shared Electronic Health Records and to investigate how electronic records could be used to share patient information across health and social service communities. The challenges of GP EPRs being addressed through RFA procedures increase exponentially in the case of Electronic Health Records.

The general priorities driving NPfIT at present are the implementation of an electronic appointment booking system (Choose and Book), electronic transmission of prescriptions (ETP), a national Care Records Service (CRS) or “spine”, and a new national network to provide the underpinning broadband network capacity (N3). Prime contracts for the provision of the bulk of these services have been let to five major suppliers<sup>1</sup> referred to as Local Service Providers (LSPs) and implementation is underway. Additionally, there is a need to implement additional functionality within primary care systems to meet the requirements of the new General Medical Services (GMS) contract for GPs.

Following the selection of LSPs and two “core” clinical applications<sup>2</sup> for the NHS, it has been implicit that these will replace existing clinical systems. However, until these systems can be replaced, the existing clinical systems will be retained. To understand the way in which existing systems should interface with both the CRS “spine” and the LSP solutions, NPfIT developed the diagram shown as figure 1. NPfIT expects that the majority of existing systems will have been replaced, or integrated within an LSP solution, at some point during the next two to five years<sup>8</sup>.

The impact on suppliers of existing systems is expected to be different in different specialist areas. Mental health and community health systems are expected to be replaced with new LSP provided systems from 2006 onwards. Hospital specialist departmental

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<sup>1</sup> Accenture is the Local Service Provider (LSP) for the North-East and Eastern Clusters; BT the LSP for London, the provider of the National Care Record “Spine” including the core ETP service, and the N3 service provider; CSC is the LSP for the North-West and West Midlands Cluster; and Fujitsu the LSP for the Southern Cluster. AtosOrigin is the provider of the Electronic Bookings Service.

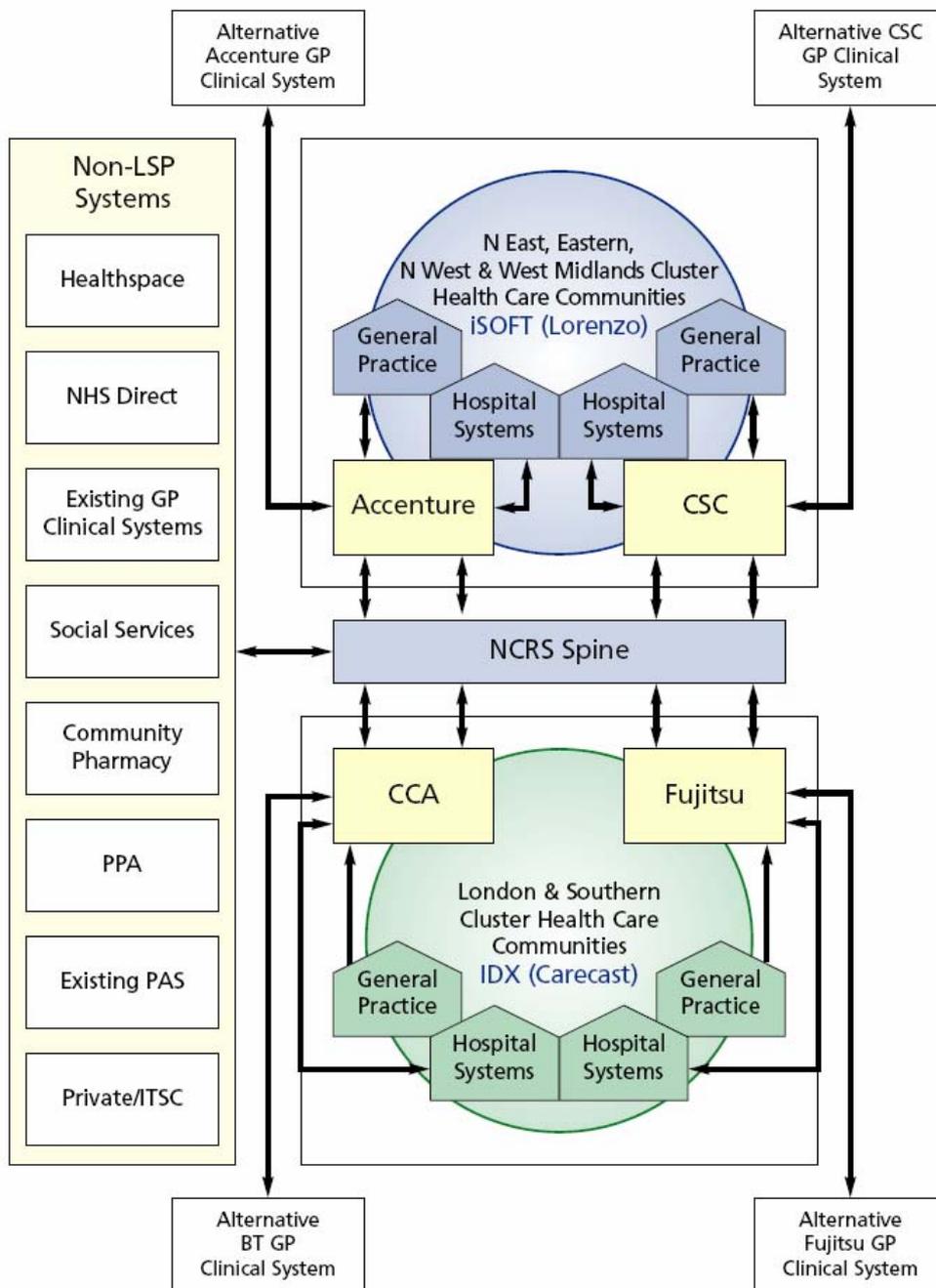
<sup>2</sup> iSOFT “Lorenzo” for North East, Eastern and North West & West Midlands Clusters; IDX Carecast for London & Southern Clusters

systems are expected to be retained, but adapted to interface to the LSP core solution. The LSP will choose which specialist departmental systems will be included in its own portfolio of services, and in most instances LSPs are expected to offer only one specialist solution per department. The only diversity which NPfIT anticipates is the difference in portfolios developed for interfacing with the iSOFT Lorenzo core application, and those interfacing with an IDX Carecast core.

In contrast, all existing community pharmacy suppliers will be invited to achieve “ETP compliance”, and NPfIT is dealing directly with these suppliers rather than via the LSPs. This latter position may reflect the fact that the NHS does not fund the costs of community pharmacy systems and therefore NPfIT has little leverage on this sector.

The situation with regard to primary care systems is somewhat less clear. NPfIT decided that LSPs would provide a choice of GP clinical system as part of their service offering, but limited this to “a main and alternative system”. Under this plan, iSOFT (Lorenzo) and IDX (Carecast) would be the new health community-wide clinical systems provided by the LSPs, with each LSP in addition providing one alternative GP clinical system.

The BMA and RCGP wished to maintain more freedom of choice in the selection of primary care systems, and expressed the views of their GP membership in the BMA and RCGP *Guidance for GP practices in relation to the NPfIT*<sup>9</sup> issued in April 2004. This stated that practices with RFA99 accredited systems with which they are currently happy should not agree to transfer to an alternative system as long as their current supplier has confirmed their desire to make their system ‘NPfIT compliant’. This document goes on to say that “the National Programme expects LSPs to take all reasonable steps to support any accredited systems where local demand exists”.



**Figure 1: The NPfIT Portfolio Model (diagram published by NPfIT)**

The British Computer Society Primary Healthcare Specialist Group (BCS PHCSG) issued a document<sup>10</sup> in stating their concern about the NPfIT approach to replacement of primary

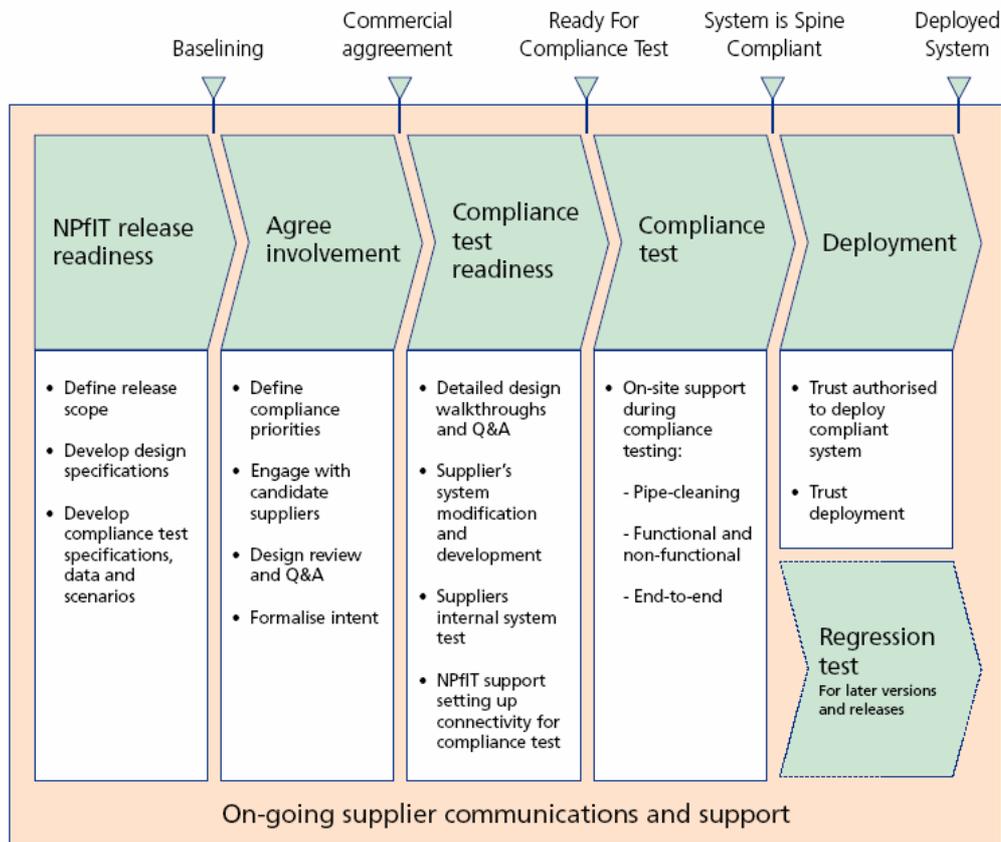
*care systems thus: “Previous procurement arrangements have created a strong sense of “ownership” by GP practices towards their IT systems resulting in a determination amongst practices to ensure they achieved promised benefits and value for money. This commitment has meant that GP practices have invested considerable time and effort in learning to get the most out of their systems and ensuring that the quality of data contained in them was fit for purpose. In turn this has led to a close but robust relationship between practices and their IT suppliers that has ensured that suppliers are firmly grounded and focused on meeting the needs of frontline staff and the patients they serve. We have a real concern that the new arrangements resulting from changes in the GMS Contract and the National IT Programme will result in a reduction in this sense of ownership by practices, and suppliers becoming less concerned with the real needs of frontline staff.”*

Whilst NPfIT is still expecting that the majority of existing systems will have been replaced at some point during the next two to five years, in line with the typical NHS IT contract lifecycle, it is interesting to note that it sets out some circumstances which might affect the implementation of this policy. These include: “The desire and ability of current suppliers to continue to support their systems and deliver a high quality IT service to NHS users, and a safe service to patients”, as well as dependence on when the LSPs can implement viable alternative systems.

NPfIT currently accepts that practices may continue to use their existing GP clinical systems (i.e. non-LSP systems), subject to such systems maintaining CRS or “spine” compliant status. This is to “... support the tactical, short-term interconnection with existing systems already in widespread and beneficial use within the NHS.”

NPfIT now works with a selected list of primary care system suppliers to implement new services such as the data interface to the Quality Management and Analysis System (QMAS) for the Quality and Outcome Framework (QOF) required under the GMS Contract. Although the cost of creating a compliant system is borne by the supplier, NPfIT will decide which systems to support in achieving compliance, and the priority order in which compliance is progressed<sup>11</sup>. The general term “spine compliance” (or “CRS compliance”) currently encompasses the provision of functionality for security, information

governance requirements, Choose and Book, and ETP.



**Figure 2: The NPfIT spine compliance process (diagram published by NPfIT)**

The spine compliance process, shown in figure 2, illustrates the centralist planning approach to system development and deployment. The BCS PHCSG document referred to the proviso procurement regime engendering a “close but robust relationship between practices and their IT suppliers that has ensured that suppliers are firmly grounded and focused on meeting the needs of frontline staff and the patients they serve”. In the NPfIT model we see ‘Develop design specifications’ appearing ahead of ‘Engage with candidate suppliers’ in the compliance process model.

The NPfIT guidance for suppliers describes the first two stages in the process as follows:

- *NPfIT release readiness – This is the internal preparation phase within the NPfIT in which the objectives of the compliance programme are agreed, and the scope of compliance are defined and documented. At the end of this stage NPfIT is ready to communicate the requirements to the suppliers concerned.*
- *Agree involvement – The NPfIT ... identifies specific systems that it wishes to support to compliance for the specific release ... The NPfIT then contacts the supplier.*

It is clearly stated that suppliers may or may not be invited to participate, at the discretion of NPfIT. Users are not mentioned at all. However, this is a pragmatic modification of the original position, and NPfIT now “recognises that significant dialogue is required with existing suppliers, with discussions required on many levels between NPfIT at national and cluster level, with LSPs and with trusts/PCTs.” A new Existing Systems Programme (ESP) has been established within NPfIT. This will engage with major existing suppliers of primary care systems as they are accepted for inclusion in the spine compliance programme.

#### NPfIT Approved Service Suppliers

The £5.5 billion procurement phase for the National Programme for IT in the NHS was completed in January 2004, as a result of which the following consortia now have contracts to transform all secondary and primary care IT services throughout the UK:

- Southern Region LSP: [Fujitsu Alliance](#) ([Fujitsu](#), Cerner (replacing [IDX](#)), [BT Syntegra](#), [Tata Consultancy Services](#), [PricewaterhouseCoopers LLP](#)) £896 million
- London LSP: [Capital Care Alliance](#) ([BT Syntegra](#), [Perot Systems](#), [IDX](#)) £996 million
- Northwest Region LSP: [CSC](#), [Hedra](#), [iSoft](#), [SystemC](#) £973 million
- Northeast Region LSP: [Accenture](#), [Siemens](#), [Microsoft](#), [iSoft](#), [Newchurch](#) £1099 million
- East Region LSP: [Accenture](#), [Siemens](#), [Microsoft](#), [iSoft](#), [Newchurch](#) £934 million

million

- NHS Spine/ICRS NASP: [BT Syntegra](#), [Oracle](#), [Sun Microsystems](#), [LogicaCMG](#), [CSW](#) £620 million
- e-Booking NASP [SchlumbergerSema](#), [Cerner](#) £64.5 million

### **Alternative Supplier Responses**

Apart from iSOFT (see below), none of the companies directly involved in LSP consortia supply primary care systems, so each LSP will have to make arrangements to provide these from other sources. Prior to NPfIT, approximately 90% of the primary care systems market was supplied by one of three companies: EMIS, Torex and InPS. EMIS was rumoured to have close to 50% of the entire market, with Torex and InPS taking about 20% each.

How have these suppliers responded to this challenge? The three biggest players in the primary care systems market have responded in very different ways, as we describe here. It is interesting to note that whilst the market circumstances appear to be very different under NPfIT, their responses are ‘in character’ in terms of their previous behaviour in the market regulated by RFA99.

One relative newcomer to the market is also discussed below. TPP (the supplier formerly known as The Phoenix Partnership) has been adopted as the alternative primary care system supplier for the North East and Eastern clusters.

### EMIS

According to its web site<sup>12</sup>, EMIS is the UK’s leading IT supplier in primary healthcare, hosting over 33 million patient records within its systems, and at a conservative estimate around 55 per cent of primary care professionals in the UK using EMIS software, possibly over 30,000 users in all. Marketing its products under the strap line “designed for healthcare professionals” (originally “designed by doctors for doctors”), the company clearly believes that innovation and user-centred design are key factors in its success to date.

EMIS were not initially selected by any LSP as a primary care system supplier to be offered to practices under the new regime. Speculation and rumour attributed this to a

refusal by EMIS to accept the contract terms offered. Whatever the reason, it seems odd that the system with the largest installed base should not be included in any LSP offering. In response to the NPfIT's *Initial guidance for existing system suppliers*, the chair of the EMIS National User Group (EMIS NUG) urged all its members "to fight the standardisation of general-practice systems being forced through by England's National Programme for IT". The user group has over 1,500 practices as members, an indication of the strength of the user base and its active engagement in medical informatics.

In line with the company aims of being the leading innovator in the market, EMIS claim<sup>13</sup> to "lead the way with Connecting for Health projects". They cite success in trials of GP record transfer ("first ever patient records transferred electronically between practices via the NHS spine"), and accreditation to NPfIT for large scale implementation of ETP and CaB. As with RFA, they have continued to implement functionality which is not mandated by the common standard, such as online patient appointment booking and repeat prescription requests, in a clear attempt to mark their position as a leading player in the market through innovation in response to user demand.

EMIS has always adopted an independent stance in this market. Under RFA it was the only supplier not to join the Computer System Suppliers Association (CSSA), an industry body which represented the supplier community on the RFA99 working parties. Clearly informal communication between those involved in the RFA99 process and EMIS must have taken place to ensure no serious dislocation of the relationship between standards and market availability occurred. Under the new regime, an 'existing supplier' programme offers a channel for dialogue with companies such as EMIS, and one may speculate that discussion takes place via other channels as well.

In an interesting development, in March 2005, the Department of Health confirmed<sup>14</sup> that EMIS have contracted with CSC Alliance to provide the alternative GP system for the North West and West Midlands cluster.

#### iSOFT/Torex

Torex Health, part of the Torex group, was a company which historically grew by

acquisition, buying several well established primary care system suppliers including Medical Care Systems (MCS) and AAH Meditel. Over time the acquired products were merged or replaced with the aim of creating a single product line for primary care called Synergy.

In a move which may be seen as entirely in character, in 2004 Torex plc merged with iSOFT plc, which supplies over 50 hospitals internationally with complete Health Informatics Systems (HIS) solutions. The aim of the merger was to merge expertise in primary and secondary care systems in order to be able to penetrate the full spectrum of the healthcare market, enabling iSOFT to make a strong play for participation in NPfIT. Although another supplier complained to the Office of Fair Trading (OFT) that the merger would give the combination a massively dominant position in medical record software but the OFT eventually cleared the merger.

The iSOFT<sup>15</sup> offering to NPfIT is Lorenzo, a core “application set” designed so that organisations can continue to use existing systems, while also adding new functionality and services. iSOFT Lorenzo has been selected as one of the principal applications for deployment under NPfIT. Lorenzo claims to use a Service Oriented Architecture (SOA) approach to provide a framework based on international standards and open technologies that enables a highly flexible plug and play approach to integration of existing systems and the introduction of new ones. Within this framework, its offering for Primary care is the latest version of Synergy, which is RFA99 accredited and supports the new GMS contract reporting, monitoring and QMAS submission requirements.

### InPS

InPS<sup>16</sup> (In Practice Systems) is now part of the Cegedim Group, a leading European company involved in medical informatics, which acquired InPS from Reuters in 1998. More recent acquisitions by Cegedim extend its interests in the healthcare market, including Cegedim RX (formerly NDC UK) and Enigma Health, both suppliers of pharmacy systems. As with iSOFT, the aim is to offer combine expertise in related healthcare sectors to be in a better position to meet the goals of NPfIT. The corporate website claims that they can offer applications to meet the needs of GP practices, primary care trusts, acute hospitals and community organisations. The company's

flagship product for primary care is now Vision, which has largely replaced the legacy VAMP system previously offered. It is RFA99 compliant.

### TPP

TPP was adopted as the alternative primary care system supplier for the North East and Eastern clusters. A relative newcomer to the market, TPP was founded as The Phoenix Partnership in 1998. The reason for their success, when other longer established suppliers were being excluded from the market, appears to be that their product, SystemOne, was designed from the start as an 'enterprise system' for all primary health care workers, rather than a GP-centric local server based clinical system. This 'single EPR' architectural approach, with role based access control, fits well with the goals of CfH. Despite their recent entry, and lack of backing from an established parent group (they are an independent company), the company claim that by November 2005 nearly 300 GP practices were using SystemOne. If they achieve their target for 2006, to convert 500 more practices in the two Accenture clusters, this could give TPP around 30% of the market in the North-east and East.

### **Conclusion**

RFA may be seen as a successful initiative by the NHSIA, utilising a 'ground up' approach involving users and suppliers who understood the complexity and diversity of the service requirements. Although critics claimed RFA99 stifled growth through a lack of incentive to develop new services, it provided a base on which new services such as GP2GP record transfer and ETP were piloted. The first major success of the new regime, QMAS, was also based on the existing primary care systems.

The NPfIT 'top down' approach has been criticised for appearing to ignore the complexity and diversity of local requirements and developing a 'one size fits all' solution. Whilst the NPfIT goals of information sharing and interoperability across the NHS are laudable, its centralised planning approach has resulted in a shift of the locus of control to management consultants, rather than users or suppliers. In contrast to the dearth of leadership demonstrated in the RFA99 process, which adopted a minimum baseline approach whilst permitting additional functionality through organic growth, the concern about NPfIT is that a 'Darth' of leadership will stifle innovation and diversity.

The BCS PHCSG comments that: “GP system suppliers need to understand that their historic business models are no longer appropriate to the new environment and must decide if they wish to evolve to be part of the new world or make an orderly exit from the market. In either case they have a duty to try and find a path which allows them and their customers to participate in the National Programme in the interim and which does not precipitate a hurried or premature transfer from existing systems.”

For the three market leading suppliers in primary care examined here, and one relative newcomer, it appears that all, for the time being, are successfully adapting to the challenge of NPfIT. Although the position of EMIS, initially outside any LSP solution, looked vulnerable in the long term, it seems that so long as LSPs were unable to provide alternative systems or find the resources to install them, NPfIT are content to work with existing suppliers providing they continue to offer all the enhancements required to meet the needs of the new NHS. Already in NPfIT there is an example of a failing supplier being replaced by one previously excluded, with Cerner recently replacing IDX in the South East cluster. With EMIS now included as an official supplier to the North West cluster, they are in an even better position to take advantage of any other such changes.

At the same time as confirming the EMIS position in the North West cluster, the Department of Health announced that all GP practices are to get a choice between any of the accredited systems offered by any of the four LSPs. This is a major change in direction for NPfIT, as the existing LSP contracts were negotiated on the basis of a high degree of standardisation via a limited portfolio of LSP offered solutions.

More recently, CfH has outlined new proposals for delivering GP system choice which could enable practices to buy systems either directly from suppliers or from their LSP. Any accredited system would be available to practices, meeting the contractual commitment to choice contained in the nGMS GP contract. This new arrangement could create the potential to bypass the LSPs on practice system, enabling them to choose from any accredited GP system with their PCT then being reimbursed directly by CfH.

This represents a spectacular U-turn in policy to the days of RFA which permitted all

suppliers to compete for business from practices as long as they could reach a minimum technical standard, albeit one which was progressively raised over time.

According to e-Health Media<sup>17</sup> *“The quandary over GP system choice stems from the fact that the new General Medical Services (nGMS) GP contract gave an explicit commitment to GP choice of system. It appears that CfH has been unable to achieve this via the LSPs, because the five different cluster contracts awarded to four LSPs have very different requirements on GP systems, all of which were based on single standard integrated solutions.*

*“Nominally LSPs have been offering a choice between their preferred, or 'core', primary care solution and an 'alternative' system. But in reality one of the core systems, Lorenzo Primary Care, remains under development, while it is no longer clear whether IDX are developing a primary care system. Similarly, Cerner, which replaced IDX as the main software supplier in the South in summer 2005, is not thought to be developing a primary care system.*

*“This has resulted in a situation in which The Phoenix Partnership's SystemOne solution has been the 'alternative' solution in the North East and Eastern clusters, and InPractice Systems Vision solution has been the 'alternative' for the South and London, with the North West and West Midlands left in limbo.*

*In many cases practices have been content to take the LSP solution to replace an outmoded existing system. There have also been reports, however, of practices that wish to keep their existing systems but find their local primary care trust refuses to fund practice server or other hardware upgrades unless the practices move to an NPfIT-funded LSP solution, irrespective of the commitment to systems choice provided in the GP contract.”*

## **Discussion**

The BCS PHCSG document quoted above claims that: “... it is neither desirable nor practical to deliver the requirements of the NHS through a single monolithic national system within the 10 year life of the current programme or indeed that this may not be

an appropriate objective on any timescale if we are to continue to get the benefits of competition, innovation, ownership and robustness that diversity brings.”

The goals of NPfIT are indeed incredibly ambitious, although there is no doubt that integration of medical records and other system and service improvements are necessary to meet the needs of increasingly complex patient care pathways involving a multitude of healthcare professionals. However, even the best technology will fail if there is no buy-in from patients and health care professionals. Whilst ETP (now called the Electronic Prescribing Service) has seen an eager take up by users, CaB appears to be languishing in a swamp of user indifference (patients) or antipathy (clinicians).

Hanseth<sup>18</sup> argues that: *“An information infrastructure is, like other infrastructures, evolving over long time. New infrastructures are designed as extensions and improvements of existing ones - not from scratch. The new or improved elements have to fit into the old. In this process the existing infrastructure, the installed base, heavily influences how the new elements can be designed. As the installed base grows its development and further growth become self-reinforcing. Successful development of infrastructures requires, first, the creation of such a self-reinforcing process, second, managing its direction. Strategies for creating and managing such processes are here called cultivation.”*

Central control may be the only option which will drive standardisation, integration and interoperability across the entire health sector. Centralising knowledge and effort in specific loci should also be advantageous. This task requires not only good intentions, but decision making power and budgetary control. Diversity of decision making and budgetary control may indeed foster competition, innovation, ownership and robustness, but it also fostered competing standards and the temptation locally to spend the IT budget on back-filling shortfalls in prescribing and other clinical treatment budgets. One can only hope that NPfIT is capable of the ‘cultivation’ of this new infrastructure, as Hanseth suggests.

What new problems does this centralised power introduce? There have been well publicised difficulties around the representation of clinical stakeholders, especially doctors. Structuring existing practice raises questions of control, responsibility, and

professional ethics which previously had been dormant. For example, organic growth of pharmacy systems had allowed pharmacists to create their own ad-hoc EPR based on consecutive dispensing episodes, and this practice had been accepted. ETP raised the possibility of pharmacists being able to access the shared EHR, which crosses professional boundaries in a novel way. Similarly, general interoperability across care systems leads to governance questions being raised between different sectors such as healthcare and social care. The failure of NPfIT as yet to make an official policy statement on Information Governance hints at an attempt to 'opt out' of this discussion, but implementation of IT solutions cannot be successful in practice unless these conversations take place.

It will take many years before it can be judged how well the NPfIT approach will serve future development of systems that meet local and evolving operation needs. The market relationship established under RFA and reimbursement provided for these since the primary customer was localised, with national accreditation and reimbursement taking care of baseline standardisation whilst also supporting national initiatives to introduce novel functionality and services. The NPfIT approach to cost and performance driven procurement through the use of Output Based Specifications (OBS) may be seen as an even-handed and cost effective approach, but it is unlikely to work in the short term unless solutions to meet the specifications must already exist in a mature state. It may also fail in the long term unless the OBS are accurate in predicting service needs, as there is no scope in supplier budgets under such contracts for adaptation local needs and organic growth on any scale.

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