

THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY



LOCATION:
Leeds, United Kingdom

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Medicine

NOMINATING COMPANY:
Sybase

ORGANIZATION:

Leeds Hospital

PROJECT NAME:

SPNet

Summary

The Leeds Teaching Hospitals NHS Trust each year treats more than 230,000 patients in the emergency department; 730,000 outpatients and around 200,000 first contact inpatients. In all there are nearly 2 million patient contacts.

The Trust is the largest trust in the UK by some margin almost 15,000 staff, which comprises around 600 consultant staff and 4,500 nursing staff.

The Trust has an income of around £730m and provides acute services for the population of Leeds and is a regional center for the treatment of illnesses such as cancer and heart disease. A new £220m Oncology wing will open in 2007. The new wing will centralize and expand a number of key cancer services for Leeds and the wider region. The new wing will provide all non-surgical oncology services (radiotherapy, chemotherapy, clinical hematology and palliative care) and a small number of specialist surgical services. The aim is to create a world-class facility which achieves the highest standards of design and quality of environment

Provisioning supplies is crucial to this organization. If the process is not managed efficiently and accurately, patients' health could be at risk. To cut paperwork, increase efficiency, enforce contract compliance in order to realize the greatest discounts and to provide management with accurate and timely information on procurement, Leeds embarked on an "e-commerce in action" project.

The project, designed to improve the efficiency and cost-effectiveness of supply procurement while providing management with real-time visibility into the procurement system has produced impressive results, not the least of which are millions of pounds in cost savings and an improved ability to comply with audit requirements.

Introductory Overview

As the largest trust in the UK, The Leeds Teaching Hospitals NHS Trust each year treats more than 230,000 patients in the emergency department; 730,000 outpatients and around 200,000 first contact inpatients. In all there are nearly 2 million patient contacts.



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Given the size and scope of its activities, the provisioning of supplies is a mission critical activity. If not managed efficiently and accurately, patients' lives could be at risk.

To cut paperwork, increase efficiency, enforce contract compliance to realize the greatest discounts and to provide management with accurate and timely information on procurement, the Trust embarked on an "e-commerce in action" project designed to improve the efficiency and cost-effectiveness of supply procurement while providing management with real-time visibility into the procurement system.

Prior to this project, Leeds' procurement environment was a tangle of inflexible, disconnected systems (some electronic, some manual), a vast number of suppliers, and centrally and locally negotiated contracts. In addition, Leeds had no catalog management capability.

As a consequence, the procurement system was rife with problems. For instance:

- there was no recording of local stock levels
- the procurement process relied on paper requisitions that required manual approvals
- 70% of purchasing bypassed the supplies department
- 30% of purchasing was out of contract
- there was a two-week cycle time between ordering and receipt of goods
- 25% of paper invoices were inaccurate
- the cost of generating each order was £30

After analyzing its existing procurement processes, Leeds determined it needed an eProcurement system based on a common item catalogue that would work with its existing purchasing and finance systems – interfacing with them but not affecting their normal operational performance.

Among the key requirements for this system were:

- a simple, customizable, user friendly interface
- the ability to provide the necessary control of purchasing activities via tendering, contract compliance and requisitioning
- the ability to provide complete management information to all levels of the organization
- minimal system maintenance, freeing the Supplies Department staff to focus on getting the best contract prices for products and managing purchase authorizations
- the capability to consolidate and share management information from multiple NHS Trusts for use by strategic health authorities (SHAs) and purchasing confederations
- the capability to share and consolidate information from the different purchasing systems in use, without replacing them

Simply put, this meant the new system would have to provide a clean catalog, automatic checks on contract compliance, automatic electronic order status, electronic shipping notices and invoices, the ability to work with multiple Trusts and multiple purchasing systems, and mobile access for requisitioning.

Leeds' initial steps in its procurement reengineering project included the development of a



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catalog and a system to clean and maintain the catalog data. The Supplies Department also deployed a Sybase Adaptive Server Enterprise database to provide management with access to procurement information. It then developed modules, using Sybase PowerBuilder, to enable online requisitioning, ensure contract compliance and manage its catalog of a half a million items. The system also provides management information at all levels of the hierarchy from Trusts and Departments to SHAs and Confederations.

Building on this initial work, Leeds expanded development to extend its eProcurement system to the wider Leeds Teaching Hospitals user community via the Web. This initiative led to the creation of SPNet.

SPNet is a total eProcurement, management information and purchasing control system that provides automatic contract compliance, extensive management information capabilities, a user-friendly Web-based requisitioning module, a Trust and Confederation view of expenditures at all levels, integration of current systems, mobile functionality, an interface to tendering packages for contract generation and eTrading via XML, email and autofax options.

The SPNet eProcurement architecture delivers a fully integrated and personalized user interface. The solution gives multi-organization support from SHAs and Confederations to Trusts, sites and departments.

Using SPNet, Leeds can now roll out electronic requisitioning across the Trust using browser-based technology. In addition to rolling out SPNet reporting to budget holders, the Trust is currently looking at how to make best use of the extra facilities the new system offers to link procurement to clinical legacy systems.”

These include linking electronic patient records to products used. A number of areas, such as Radiology, have already begun piloting the reporting of patient data and products used in procedures via SPNet as they happen.

By linking patient data with the products used in a procedure, SPNet provides vital management information. It also ensures that the item catalog details are synchronized between SPNet and the radiology legacy system, eliminating the need for manual intervention in the requisitioning process.

SPNet has already delivered dramatic benefits across the NHS Trust supply chain. It has slashed the total cost per order by 92%, dramatically improved staff productivity, increased contract compliance and management and provided better control over spending across the Trust.

SPNet is part of the future for Leeds. It is already used with other e-commerce initiatives and will soon be used to link patient legacy systems throughout the Trust as part of the organization's comprehensive e-commerce strategy. It's important that solutions implemented by Leeds be flexible and scalable enough to work now and in the future as business requirements and objectives evolve and mature. Leeds is confident that SPNet will continue to deliver substantial benefits for the Trust as well as for its patients.



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Benefits

By linking our eProcurement system directly to our clinical systems, critical stock can be re-ordered automatically while the patient is effectively still on the procedure table.

The Trust can accurately record and subsequently recover revenue to a far greater level of accuracy than ever before.

Lower levels of stock means a greater level of expenditure can be given to front line care.

Automated supply replenishment means less clinical time is spent on clerical activities. Through the use of bar coding, an accurate record of part numbers and serial/batch numbers is attached to patient records. In the event of product recall or safety alerts named patients can be identified and appropriate action taken.

Supply staff spend far less time in product identification and therefore spend more time on value add activities which provide greater commercial benefits for the Trust.

The e-commerce capabilities include an SPNet link through TecSol - the UK arm of the Global Healthcare Exchange (GHX). The GHX mission "To create a fully-connected and efficient healthcare supply chain: streamlining the purchasing process, leveraging accurate product information and maximizing connectivity between trading partners through an open and neutral exchange, resulting in cost savings for all participants"

The SPNet link provides a link through to many leading global healthcare suppliers including Johnson & Johnson, Baxter, Medtronic and Tyco. The system allows for data content, price matching and e-invoice capabilities.

Specific results achieved to date include:

- Overall cost savings of more than £2.6 million
- 92% reduction in total cost per order
- Reduction in time spent on supply issues from 20% to less than 5%
- Contract compliance and management improved by 30%
- Time between requisitions and purchase orders has been cut from 7 to 10 days to 3-4 hours
- Improved financial control to comply with audit requirements and management information, including key performance indicators (KPI) reporting
- Improved requisitioning capability and with integration to multiple systems

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The Importance of Technology

Advanced information technology, such as that used in the development of SPNet, is essential anytime and organization seeks to integrate and streamline business processes and information, to increase productivity and reduce costs.

That was certainly the case in this instance.

Originality

While there are many eProcurement solutions available on the market, this is the only one that links directly into clinical systems. For the first time, we can now look at patient attendance records, linked to equipment inventory systems and contact catalogue systems. In real time we can translate clinical activity into stock, and in turn, the actual cost of procedures.

The solution whilst integrated into Oracle 11i is original in that it is totally tailored for the health sector, linking critical clinical systems to business systems.

Success

The project has exceeded all expectations. For the first time clinicians have recognized the benefits of a fully integrated supply chain. The benefits to the patient are real in terms of a reduced number of cancelled procedures due to the lack of medical equipment. Yet the Trust is able to show a lower cost of acquisition and better value for its expenditures.

Through the newly introduced payments by results mechanism the Trust is able to identify key items of expenditure and ensure full cost recovery.

The project is live and operational. There is a roll out plan now to cover additional specialities within the hospital throughout the year. This is part of the Trust's change management program involving a dedicated task force focused exclusively on where long-term performance can be improved or savings achieved.

According to Leeds Information Manager, Graham Medwell, "Using SPNet, we can now roll out electronic requisitioning across the Trust using browser-based technology. In addition to rolling out SPNet reporting to budget holders, we are currently looking at how to make best use of the extra facilities the new system offers to link procurement to clinical legacy systems."

These include linking electronic patient records to products used. A number of areas, such as Radiology, have already begun piloting the reporting of patient data and products used in procedures via SPNet as they happen. "By linking patient data with the products used in a procedure," says Radiology Superintendent, Kevin Peters, "SPNet will provide us with vital management information. We can also ensure that the item catalog details are synchronized between SPNet and our radiology legacy system, eliminating the need for manual intervention in the



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requisitioning process.”

In terms of numbers of people touched by the system, this runs into many thousands given the size of Leeds Teaching Hospitals, ranging from electronic requisition users to key surgeons throughout the Trust. Suppliers are also affected by this system as we are able to promote the transmission of more accurate data to the supplier community in a more timely manner.

Payment of invoices to term has increased with over 97% of all invoices received being paid to terms.

The solution has been developed with users and particularly clinicians in mind. To this end the system is quick and easy to use and aimed at providing benefits to both staff (users) and patients. Uptake in the specified areas is excellent with more areas requesting the system than can be accomodated at present.

Difficulty

There were a number of obstacles that had to be overcome in order to create and implement this system. They included:

- lack of funding
- the need to continue the procurement process while developing the new system
- the lack of clean data at both Trust and supplier levels
- apprehension among purchasing professionals with the new system versus the traditional hands-on procurement process
- a lag among suppliers in understanding the new system
- no common coding structure within the NHS

We found that it is not the technology that is the most difficult obstacle to overcome. Rather, the key challenge when implementing e-procurement is influencing the hearts and minds of stakeholders. Implementing e-procurement effectively involves changing the way people have been working for many years.

It is also important that stakeholders throughout the Trust, understand the need to have good purchasing in place as well as automating transaction processes.

Funding in the English NHS is always difficult to secure, by working with Sybase we have been able to maximise our knowledge and knowhow at a minimum cost to the Trust.