



## Overview

**Country or Region:** United Kingdom

**Industry:** Healthcare

### Customer Profile

University Hospitals of Leicester (UHL) National Health Service (NHS) Trust is one of the largest and busiest teaching trusts in England, employing over 11,000 staff. It provides services to a local population of nearly a million people in Leicester, Leicestershire and Rutland.

### Business Situation

UHL wanted to gain a through understanding of its operational cost base as part of an ambitious transformational change programme, and in support of its preparation for NHS Foundation Trust status. UHL wanted to improve efficiency and effectiveness thereby freeing up resource for better patient care.

### Solution

Microsoft® Certified Partner TC Group implemented its Analyzer Lite proprietary modelling tool, with Microsoft Visual C#®, Visual Studio® .NET, Visio® 2002, and SQL Server™ 2000.

### Benefits

- Analyses case for remodelling services
- Produces scenarios in hours not weeks
- Minimal training required
- Cost benefit analyses for any new initiative
- Collaborating with NHS change consultants



## Hospitals Use Business Process Modelling Tool to Assess and Prioritise Service Plans

“Analyzer Lite running Microsoft Visio 2002/2003 is proving to be a vital tool in helping us map new models of acute healthcare and the impact of change on our hospital, business processes, and resources.”

Helen Seth, Deputy Director of Operations (Modernisation), University Hospitals of Leicester NHS Trust (UHL)

University Hospitals of Leicester NHS Trust (UHL), one of the largest acute teaching hospitals in the U.K.'s National Health Service (NHS), wanted to gain a more detailed understanding of its operational cost base at the level of specific care pathways. This was in the context of the national agenda for system reform and local plans for transformational change. UHL simulated the impact of change and challenged some of its existing business processes using a proprietary modelling tool. The tool, Analyzer Lite from TC Group, was developed with Microsoft® Visual C#®, Visual Studio® .NET, Visio® 2002, and SQL Server™ 2000. UHL was able to assess the financial and service benefits of early centralisation of elective orthopaedics ahead of UHL's £761 million (U.S.\$1.37 billion) Pathway Project.

## Situation

University Hospitals of Leicester NHS Trust (UHL) is one of the largest and busiest teaching hospitals in England, employing over 11,000 staff members and providing services to nearly a million people in Leicester, Leicestershire and Rutland. It was formed in 2000, following the merger of Glenfield Hospital, Leicester General Hospital, and Leicester Royal Infirmary, and has an annual budget in excess of £500 million (U.S. \$912 billion). UHL retained the maximum three-stars performance rating from the National Health Service (NHS) in the years 2004 and 2005. UHL is currently at the consultation stage of its Foundation Trust Application.

Within its current configuration, all three hospitals provide acute secondary and tertiary hospital services to a local population of one million. Most hospitals today face challenges from commissioners, patients, and ever-present financial constraints. UHL is no exception in wanting to modernise its services to cope with current and future pressures. But, as a pace setter within the NHS and one of the largest NHS acute-care teaching hospitals, UHL management wanted to model its key business processes to help inform and prioritise incremental improvements towards their strategic vision that underpins the Pathway Project.—a £761m (U.S. \$1.37bn) six-year scheme to support the modernisation of acute services in Leicester, Leicestershire, and Rutland. At the same time, it wanted to improve the level of understanding at the front-line of the operational cost of key pathways. It required a low-cost, simple to use, effective management tool to support this work.

Helen Seth, Deputy Director of Operations (Modernisation), University Hospitals of Leicester NHS Trust, observes, “One particular challenge was to examine whether, in the context of our challenging cost improvement programme, there would be financial benefit in accelerating the centralisation of the elective orthopaedic service. We needed to decide

where best to focus effort and resources. We also had to be sure that we understood the effects that the change would have on constituent business processes including financial, human resources, patient experience, and achievement of targets.”

Before going ahead, UHL decided to address several key questions by using a process review methodology:

- What are the real costs of delivering the current elective orthopaedic service?
- What beneficial improvements can be achieved by consolidating on a single site?
- What impact will the proposed changes have on the patient and staff experience?
- How can senior management best test ‘what if’ possible scenarios to inform the prioritization of a change programme?

## Solution

UHL turned to TC Group, an independent software vendor and Microsoft® Certified Partner, which specialises in providing business and technology solutions to the healthcare and financial services sectors. TC Group was founded in 1995,

The essential elements of the analysis using TC Group’s Analyzer Lite proprietary operational modelling tool are:

- Utilising existing operational processes, minimising duplication of effort, and maximising in-house expertise.
- Modelling the current state of a process, establishing a baseline for comparison, and a common understanding of the core operational processes.
- Identifying, highlighting, and simulating inefficiencies, if any.
- Developing scenarios to understand the alternatives and model the impact of change.

Matt Oxley, Product Manager of TC Group, adds, “When carrying out operational analysis,

hospitals would typically use a process modelling tool with a time-consuming combination of spreadsheet formulas, requiring considerable manual data input, with varying degrees of accuracy and efficiency.”

Analyzer Lite builds on the older tool's practices, while reducing the time necessary to develop the operational models—and at the same time minimizing risk to the business significantly. It benefits hospitals by conserving previously wasted costs. With its intelligent scenario-building feature, Analyzer Lite can produce an infinite number of possible or probable scenarios, which produce a detailed business case.

Seth says: “Such information means we can make more timely evidence-based business decisions with greater consistency and confidence than ever before.”

The operational modelling tool benefits from the power and extensibility of Microsoft tools that were used to develop it. Oxley adds, “Microsoft technology supports Analyzer Lite in several ways. With the look and feel of Microsoft software, Analyzer Lite is highly intuitive and easy to navigate. The tool integrates rapidly with existing systems.”

Analyzer Lite was developed with the Microsoft Visual C# development tool. The Microsoft Visual Studio® .NET development system was also used to develop the application and create the installation package. Microsoft Visio® 2002 drawing and diagramming software is integrated with Analyzer Lite but can also be integrated with the newer Microsoft Office Visio 2003, which imports data files for Visio to interpret. It uses business process information to make the calculations that are in turn captured in Microsoft SQL Server™ 2000.

Oxley explains, “Analyzer Lite then uses the outcomes of these calculations to map the customer’s business processes. It integrates

easily with the Microsoft Windows® XP operating system and Microsoft Office.”

## Benefits

### Helps Define the Best Future for Orthopaedic Services

UHL wanted to examine the business case for centralisation of elective orthopaedic services onto one site, before undertaking the hospital's reorganization project. By using Analyzer Lite, UHL looked at every aspect of reengineering the business processes around the elective orthopaedic service in an objective manner.

Seth says: “We actually concluded that the total savings that would be realised in the immediate term were insufficient to justify the disruption to the service users and potential risk of failing to achieve the national waiting time target ahead of the planned redesign of the service as part of the Pathway project. Analyzer Lite running Visio 2002 is proving to be a vital tool in helping us to map different scenarios in healthcare. It has also been essential in learning and the impact of change on our hospital and its business processes and resources.”

### Faster Analysis of Operating Costs

UHL can now create business cases for investment and calculate the likely return on investment much more quickly than with conventional tools.

Seth says: “The modelling tool gives not only an accurate assessment of potential cost savings, but also the ability to plan scenarios for the impact of process changes.

“With Analyzer, we can generate possible scenarios about our clinical processes quickly and consistently. By adopting business process modelling techniques used in the private sector, we are enhancing our capacity and capability for continuous service improvement in the NHS.”

### User-Friendly Operational Modelling Tool

The key to the success of Analyzer Lite is its user friendliness. Oxley says: “After just two days of

## For More Information

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For more information about TC Group products and services, call or visit the Web site at:

[www.tcsg.co.uk](http://www.tcsg.co.uk)

For more information about University Hospitals of Leicester products and services, call or visit the Web site at:

[www.uhl-tr.nhs.uk](http://www.uhl-tr.nhs.uk)

training, NHS managers can use Analyzer Lite with confidence. With the look and feel of well-known Microsoft software, our Analyzer Lite product is highly intuitive and easy to navigate."

Analyzer Lite is comprised of eight modules:

- Scenario comparison
- Hospital personalisation
- Data repository
- Hospital hierarchy
- Base-model creation
- Process interrogation
- Cost and revenue
- Impact simulation

The first major step in building a business model is understanding the hierarchy in which the hospital wishes to review its business. Oxley says: "You can analyse your hospital to multiple levels. These levels could be location, department, ward process, yearly/quarterly, and so on."

From the process maps, mandatory data is collected about the process, which might be a service such as orthopaedics or the hospital pharmacy. The fixed costs are associated with the processes manually.

Oxley adds: "This creates the current scenario. This will be a true reflection of your hospital from a process, cost, and volume perspective. Once the current scenario has been validated, we can create as many possible scenarios as a manager would wish to perform."

## Comprehensive Cost Benefit Analysis for New Initiatives

Analyzer Lite helps hospitals to understand the cost versus benefit case of any new initiative. TC Group is one of the top three Visio partners in the United Kingdom that are exhibiting at the annual Microsoft NHS Summit. TC Group is in active talks about implementing Analyzer Lite at hospitals in the South West of England, the North West, and the West Midlands.

## Microsoft Office System

Microsoft Office is the business world's chosen environment for information work that provides the software, servers, and services that help you succeed by transforming information into impact. For more information about Microsoft Office System, go to:

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## Software and Services

### ■ Products

- Microsoft Visio 2002
- Microsoft Visual Studio .NET 2002
- Microsoft Visual C#
- Microsoft SQL Server 2000

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