Loughborough College: Managing your data using a commercial dashboard

Summary

In order to improve the visibility and availability of information, Loughborough College has invested in data dashboard software to visually represent the primary set of Key Performance Indicators. This has provided a one-stop shop and overcome the need for staff to go into a number of disparate systems in order to gain an overview of their area of responsibility. Overall it has also improved the College’s approach to business intelligence.

About Loughborough College

Loughborough College is a general further education college located in the Borough of Charnwood in Leicestershire. It shares a large educational campus with Loughborough University and the RNIB College Loughborough. It offers qualifications from pre-entry to Higher Education level.

The College was last inspected by Ofsted in November 2008 and was judged good for its overall effectiveness and outstanding for educational & social inclusion and for its financial management.

The challenge

Current government policy is forcing improved business efficiency, quality improvement and sustainability across all public services. Post-16 education is no exception to this aspiration.

For some time, Loughborough College has been producing management information that was organised to produce a scorecard effect. A series of named folders on the central filestore that covered a range of key performance areas was accessible to all staff.
The reports were usually in Excel format with appropriate subtotals, expand and collapse options. In order to use these, staff had to navigate through the central filestore and open the relevant report and then drill into their area of interest.

The disadvantages of this were that staff could not see the overall position of the performance indicators; they sometimes forgot where the data could be found and wasted precious time in trying to locate relevant information; and the reports produced were normally based on historical information which meant that it was often too late to take any necessary action.

Loughborough College has the majority of its business systems residing on Microsoft SQL 2008 R2 servers. There are also a small number of legacy systems that reside on other data platforms such as SQL Server 2000, MySQL and Oracle as well as a number of home-grown solutions based on Access or Excel.

Like many post-16 providers in the FE sector, this range of unconnected systems is managed by various teams across the organisation including:

- MIS (Management Information System)
- Computing Services
- Human Resources
- Finance

A limited amount of interfaces and interoperability between the various systems had been hand-crafted by either the original supplier of the software or by an in-house developer.

“A solution was needed to unite the data in one central place in order to simplify the production of real-time reports to help the college operate more efficiently.”

(Jon Brown, MIS Manager)

**The activity**

Loughborough College therefore started formulating the concept of using data dashboards late in Summer 2010.

A data dashboard is a visual, real-time reporting tool which retrieves business data from existing systems and displays it using charts, graphs and gauges. The data is often displayed in a web browser and allows multiple charts/graphs to be shown in the browser window.
To start with the College investigated various technologies to produce an in-house solution, including using Visual Studio for direct programming and Report Manager.

In March 2011 members of the MIS team attended an event on dashboards hosted by the Jisc Regional Support Centre for the East Midlands that included both in-house and external approaches. Following this a series of visits to other colleges and meetings with third-party solutions took place.

At the same time (Spring 2011) the College was successful in its application as lead partner for a consortium of colleges in Leicestershire to a regional funding pot organised by the Learning & Skills Improvement Service (LSIS) to research different approaches to data management and business intelligence.

The original timescale had been to have something in place in the Spring of 2012, however with this development the College Principal took the decision to bring the date forward and required the MIS team to have the initial dashboards with learner-related Key Performance Indicators (KPIs) implemented for the start of the academic year 2011/12.

Based on the research undertaken the College decided to purchase Active Dashboards from Dynistics.

“We looked at several options however Active Dashboards ticked all the boxes – it is simple to use and develop, requiring only a limited amount of SQL knowledge. We can make changes almost instantly instead of having to rely on expensive software houses, which in the current economic climate, was a big selling point.”

(Jon Brown, MIS Manager)
So the College started in earnest to create the dashboards. It used traditional SQL code in SQL views to provide sets of data to populate their reports and ad-hoc queries.

A new data architecture was adopted and the management of Loughborough College met to agree a set of Key Performance Indicators (KPIs) to monitor. (See the additional resources links at end of case study)

Access to the dashboards is controlled by Active Directory groups, so that people only see the data which they have permission for.

“I was impressed at how quickly we were able to get key information displayed on a dashboard and also how relatively easy it was to start delivering information sourced from disparate databases.”

(Jon Brown, MIS Manager)

The outcomes

The initial audience for the first phase dashboards was the senior management team (SMT). The data presented related to learners:

- Enrolment numbers with targets broken down by learner type;
- Withdrawals;
- Attendance;
- Missing results from the previous academic year;
- Success rates from the previous academic year.

Each of the dashboards has a drill-down facility to view the underlying data in more detail.

Once SMT were happy with the way in which data was presented, and this was almost immediately, the dashboards were rolled out to the curriculum manager group.
Some of the comments and reactions from staff include:

“The dashboard is providing a timely view of our position. Significantly the Curriculum Management is viewing it at the beginning of each weekly operational meeting and it is informing actions, improvements and celebrations of success.”

(Jan Leivers, Assistant Principal Curriculum & Standards)

“The dashboard is a great tool for monitoring key data required for management in an FE college. I particularly like the visual nature of it, and the ability to drill down into the detailed data.”

(Janet Ruffoni, Curriculum Manager responsible for STEM)

“The dashboards are an invaluable management tool – quick, real time, informative, accessible, hassle free. No more excuses about not having up-to-date data.”

(Sue Foreman, Assistant Principal Corporate Services)

The impact

The project has impacted the College in a number of ways. Some were entirely expected and others less so. In terms of direct impact the introduction of dashboards has begun to meet key objectives such as:

- Real time key performance measures delivered direct to the senior management;
- Attractive graphics focuses attention on issues to investigate;
- Ability to drill down to find causal areas;
- Debate regarding the actual performance measures needed and importantly how these are measured.

The college has been pleased to find the following benefits:

- MIS, Senior Management and extended management have been forced to resolve issues;
- MIS has needed to look at IT systems to enable cross College reporting;
- This in turn has produced questions about data quality and definitions of key measures;
- The MIS team has needed to look at how best to organise and manage College data, which led to the adoption of Business Intelligence techniques and data layer protocols, along with training and up-skilling of staff;
- A culture change process whereby staff look at the big picture rather than compartmentalised data silos;
- Data once the sole purview of one department is now exposed to challenge and understanding from peers.
“The by-products of the project are to my mind proving to be as or more important and beneficial than the dashboards themselves.

“Seeing the key data in one place in a simple visual format is liberating. A single source of information provides a new level of transparency and accountability which should result in improved performance across the College.”

(Jon Brown – MIS Manager)

The College is in a relatively early phase in its use of data dashboards and has plans to extend their use.

“We need many more dashboards, especially covering Personnel, Staff Development and Finance. I would like to see the project expanded to include individual dashboards for all staff and students.”

(Sue Foreman, Assistant Principal Corporate Services)

The lessons learned

Liz Butterworth, Project Officer, explains that the process of adopting a data dashboard forces you to look at key issues like:

- Fitness of purpose of systems and processes;
- Minimising duplication of data;
- How best to link databases;
- Recognition of key fields on each database;
- Quality of data held on each database.

To replicate this example of creating a data dashboard a learning provider would need:

- Some resource to buy in a commercial dashboard;
- Staff with technical skills to be able to write the code that extracts the data from the original system;
- Knowledge of the original systems data;
- Buy-in from senior management;
- A clear set of KPIs for their organisation.

Useful links

Loughborough College website

Dynistics website
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