

“ The Data Warehouse has unlocked the College’s ability to report on key statistics based both on data generated by the College’s activities and linked to a range of National datasets to significantly improve the potential for performance monitoring and quality improvement. Delivered to a wide range of internal stakeholders through Microsoft Reporting Services, the warehouse underpins a rapid development environment for generating a range of data structures and reports which have been adopted as the College’s single, central source of MI and operational data.

The extract and loading solutions that **visualmetrics** provided have proved flexible enough to accept a wide range of data from third party sources in a variety of formats, while proving robust and extensible. Their support service, though rarely required, has proved to be highly responsive and efficient in resolving any of the minor issues that have occurred.

Melvin Kenyon. *Operational Director, ICT/MIS & FM.*

Profile The National College for School Leadership (NCSL) was established in 2000 as the first leadership centre in the world to the leadership development of school leaders. Its base, opened by Prime Minister Tony Blair in October 2002, is the purpose built Learning and Conference Centre in Nottingham England. The organisation’s aim is to develop and support England’s aspiring and existing educational leaders by providing programmes, research and a professional community.



The Challenge

The difficulty in producing timely regional and functional impact analysis of College activities was hampering NCSL’s ability to quickly and efficiently react to trends gathered and held within their source systems. The absence of self service reporting left executives unable to promptly produce responses to satisfy public scrutiny, usually at the request of MPs.

Reliance on departmental analysts and external educational bodies undertaking "point in time" data analysis failed to constitute a suitable and reliable solution to meet NCSL’s information requirements.

Quality of Reporting system

Reporting was conducted on an ad-hoc basis utilising a combination of Microsoft Reporting and Analytical Services, recently bought Business Objects licenses, and Excel spreadsheets. The use of and education with these sub-optimally configured and complex analysis tools, combined with the requirement to pre-request specific extracts for a particular purposes, increased time to information delivery & action and constituted a substantial drain on resources.

The College relied on two analysts with the required skills and knowledge to liaise with various departments and produce their required reports. This both introduced the potential of human errors into the reporting process, and further slowed time to delivery and action.

Quality of Information

Whilst the information held within operational applications was of a high standard its selection and aggregation for reporting needed improvement. Five feeds supplied data for analysis; manual manipulation in gathering and relating data to produce reports introduced inevitable errors, and the solution failed to allow for exception reporting.

Relevance of Information

An inability to self service user reporting inevitably meant reports delivered often struggled to satisfy their original requirement. Reports produced could be of limited quality and granularity, and often outdated once delivered. Cross functional reporting, required for collaboration, was hampered

by the differing degrees of granularity required and delivered, and inherent challenges in cross department communication.

Timeliness of Information Delivery

The requirement for personnel to extract data and compile reports meant the solution inevitably resulted in poor time to information delivery and resource demand overload. In turn this was beginning to lead to a culture of ‘not requesting’ for fear of overburdening an already overstretched system.

Reporting became only practical on a monthly cycle and was largely restricted to exports in Excel format. Monitoring daily and weekly performance was impossible.

Modeling of Information

The old methods were unintuitive without the capability to query, drill down from summary reporting or pose “what if” questions without re-requesting new reports with updated criteria. Improved data analysis and modelling capabilities that could be employed by personnel with only basic IT skills and literacy were necessary.

Sharing of Information

The differing timescales against which report consumers received information, along with contrasting granularity, terminology and frequency of reports, impaired internal dialogue, customer knowledge and remedial responses to trends shown within the data. Without a single version of the truth to support action, decisions often had to be made based on agreed intuition further jeopardising collaboration.

The Solution

NCSL chose to partner with **visualmetrics**, an experienced Business Intelligence Solutions provider with a proven track record in delivering business driven Management Information Solutions. **DRIVE**, **visualmetrics** project implementation methodology, was utilised to first review NCSL's solution requirements. The results of **DRIVE's** first two phases, **Discover** and **Reveal**, were used to produce a Project Charter and Requirements Definition. These set out the scope, deliverables, resources and project plan for the solution, and recommended the use of **visualmetrics' visualintegrator** to automate the selective extraction, cleanse and organisation of data from source systems into a new, robust and more extensive Data Warehouse; the result was a dramatic reduction in development time.

Operational applications and extracts previously used for reporting were assessed and reconfigured, and new extracts built to provide all the relevant data for future reporting requirements. These extracts were then transformed before loading into the new consolidated **visualintegrator**-based Data Warehouse; whose configuration allows for simple expansion, administration and reconfiguration in line with changing business requirements. The solution delivered automatically generates the different reporting required by the separate levels and divisions of users, with the results being distributed immediately, automatically and securely via the web to both office and remote users.

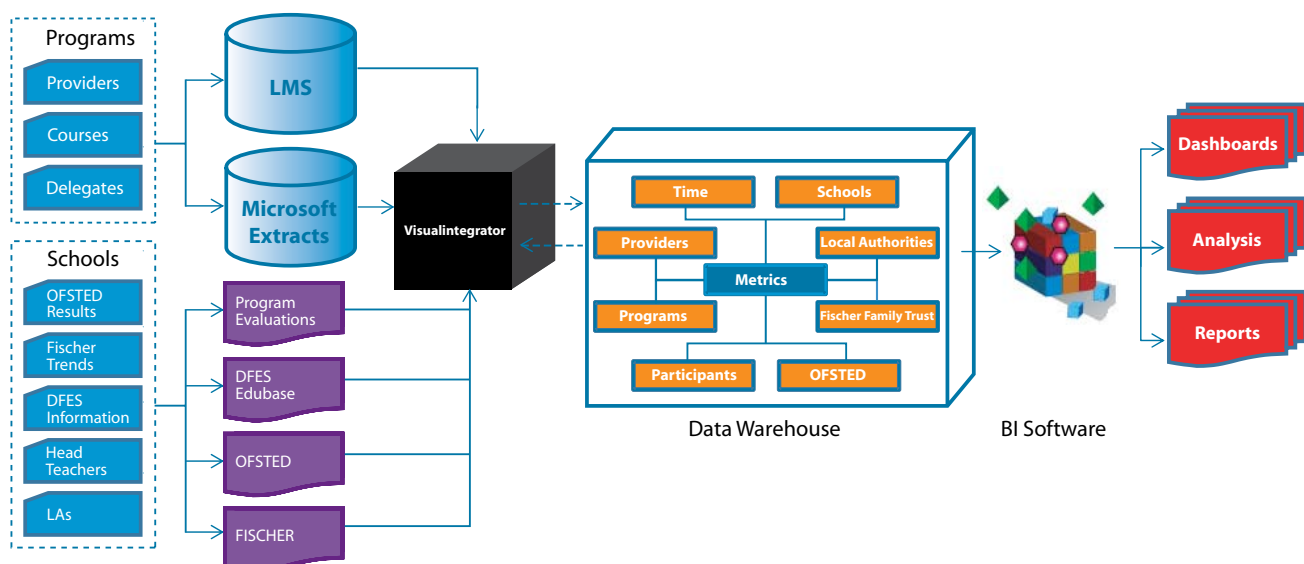
The solution identified a set of KPIs through which NCSL organisational performance is monitored:

- Count of Fischer Rates
- Duration on Programme
- Count of Evaluation scores
- No. on Programme
- Count of Ofsted Scores
- No. of Schools
- Count of DfES SATs scores
- No. of Delegates
- No. of Free School Meals

The Data Warehouse hierarchies reflect NCSL's required reporting structures:

- Schools
- Local Authorities
- Fischer Family Trust
- OFSTED
- National Strategies
- Participants
- Programmes
- Providers
- Time

Analysis & Reporting



visualmetrics segregated users into five distinct classes; 'Executives' were built dashboards to display a graphical overview of engagement across England with a regional RR&E report suite and School Intelligence report suite. 'Analysts' (or 'Super Users') were given the ability to identify trends and anomalies and drill to lowest level of detail to identify cause, as well as design and distribute new advanced reports. 'Power Users' were given the ability to 'tweak' and create new reports. 'Review Users' received reports relevant to their area of responsibility and the capability to Slice & Dice and drill using predefined queries, but no ability to create new reports or execute queries. Finally, 'Information Consumers' were granted access only to obtain data from the system via predefined PDFs or Excel spreadsheets.

The Benefits

Business Effectiveness

NCSL now has a Business Intelligence Solution capable of quickly and efficiently providing its employees with the necessary information to make informed decisions and support the organisation as it grows. Performance is reported in seven key dimensions with actual and target measures shown against KPIs:

- **Schools:** Publicly funded establishments responsible for providing Primary, Secondary and Further education to pupils across England.
- **Local Authorities:** Publicly funded establishments responsible for providing Primary, Secondary and Further education to pupils across England.
- **Fischer Family Trust:** Independent trust who undertake statistical trend analysis regarding the performance of schools across England.
- **OFSTED:** The results of inspections of schools across England
- **Participants:** Delegates (Teachers and Governors) participating on NCSL programmes.
- **Programs:** NCSL training courses, events and programmes for teachers and governors across England.
- **Providers:** Providers of NCSL training programmes across England both internal & external.
- **Time:** Time-based analysis allowing immediate views across the whole business with trending.

NCSL employees are now able to analyse and assess the impacts of programmes across the country as a whole, by region or collective and by institution or individual. This has allowed NCSL to make confident informed decisions when allocating resources, or taking remedial action, thereby maximising the benefits it can deliver across the spectrum of education, academics and students. A consistent set of records accessible on demand, and which highlight an individual's or institution's involvement with NCSL's staff, programmes and communities, has increased their ability to forge relationships and react to individual requirements. NCSL can now objectively evaluate the effectiveness of both the programmes it delivers, and those of third party providers. Time and money once spent gathering disparate data and building reports can now be invested in valuable research and on implementing and affecting programmes of reform.

Information Integrity

The loading process for data into the **visualintegrator** Data Warehouse enforced controls on the checking and validation of data used for reporting purposes. The result is consistent data quality and a single, unified view of the data for use in the organisation.

Relevance of Information

visualintegrator refreshes the Data Warehouse nightly before reports are distributed over the web to all users, both remote and office based. This ensures all have access to up to date information. Reports are now built specifically for the needs of the user, assisting the decision making processes that directly influences performance.

Independence of Users

The new solution gives users a consistent, timely and easy to use reporting and analysis capability tailored to their individual class of reporting needs. All users have the functionality their role demands and those required to build ad-hoc reports or amend existing ones can do so independently of the IT department.

Ease of Use

Easy to use tools for interactive reporting allow users to manipulate the standard views and independently manage their own custom built reporting. The Business Intelligence tools also offer more advanced analysis capabilities, increased functionality and faster reporting performance. **visualintegrator's** advance administration tools allow the IT department to quickly and efficiently monitor, validate and control the data within the Data Warehouse, and efficiently introduced new data sources.

Communication across the Organisation

NCSL staff across all divisions now have access to one clear, consistent and accurate set of information. This has brought better communication across the organisation, allowing for greater internal collaboration and an easing of the demands placed on departmental analysts in doing so.



The case for Business Intelligence

We are familiar with the maxim

- We know what we know
- We know what we don't know
- We don't know what we don't know
- There is another dimension, just as important

We don't know what we know

To quote a former HR head of Hewlett Packard "if Hewlett Packard knew half of what it knows, it would be twice the size" This was an eloquent way of saying that HP understood that realizing its untapped knowledge was the most productive singular step the business could take. This is a situation familiar to many organisations. They know that within the wealth of data they have is knowledge that would help to run the business better. They often know where to find this information but the time and cost it takes to make it coherent diminishes its usefulness. Worse, they know that there is business critical knowledge within this data, if it could be identified.

They don't know what they know

This is the Business Intelligence challenge. To identify topics that are critical to business performance. To identify information within the data stores relevant to these topics. To mine the data and organize it in patterns that illustrate relationships. To manipulate this information to show the behaviour and trends which flow from these relationships. And finally to present the findings to decision makers in a time frame and form that allows insight to be drawn and action to be taken.

Business Intelligence (BI) answers this challenge through solutions based on a number of key principles.

One Version of the Truth

A common problem organisations face is that information used by different parts of the business is often collected from disparate sources of data. This can lead to inconsistency and conflict. BI applications developed by **visualmetrics** are based on a single repository of data. There is always only one **version of the truth**.

Business Intuitive

Traditional reporting often delivered little more than large reports containing even larger volumes of data. Interpretation was left to the reader. A key characteristic of the BI solution is that it presents information in a multidimensional format that allows cause and effect relationships to be interactively explored. By being **business intuitive** a BI application quickly brings insight into how the business is working.

Fit for Purpose

Different members of an organisation will require information pulled from the same sets of data but pitched at differing levels of detail and scope. The needs of the Board will differ from that of the Functions even when the same topic is being examined. BI applications present information that is **fit for purpose** for its user.

Just in Time

A reporting solution should optimally present up to date performance information with sufficient time for effective consequential actions to be taken. BI applications are designed with this **just in time** concept in mind.

Self Service

While information is designed so it is fit for purpose, there is often the need to manipulate it further by drilling down to greater detail, or to look for behavioural relationships between other sets of data. This needs to be achieved quickly and cost effectively. BI applications provide for a high level of **self service**.

Information Supply Chain

None of the preceding benefits of a BI application are possible without there being the capacity to identify, capture and consolidate data from an organisation's functional applications. To do this in the required time frame, and without operationally impacting these applications, requires sophisticated automation. **visualmetrics' visualintegrator** software automates the **information supply chain**.



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