Newsletter Date

The Sick Authority

Stonemanor Analytics: A Case Study

The Client

* A large local authority
* SW of England
* 18,000 Employees
* £600 million + staffing budget

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The Challenge

HR had reported that the authority was losing 20 days per head every year. Even to the most junior manager this seemed excessive; at the time the Prison Service which had the highest staff sickness rate in the public sector, was reporting 15 days per head. Unfortunately the local press and worse, adverse television reporting had put the situation firmly in the public arena. Initially the authority responded by appointing an absence "tsar" to identify poorly performing areas and to put in place robust mechanisms for reducing absence but immediately the project ran into the sand. Results being reported by the HR IT system were not congruent with managers perceptions of their own teams, and even worse the information provided by the system just did not tally with individual managers own records or even individual employees personal history. The whole credibility of the HR and Corporate Service function was at stake. Resources were identified to tackle the issue but there was no clear idea of where to deploy them. What was needed was a comprehensive review of the corporate data, its business processes and the way in which useful knowledge was built from the data available. In addition a robust mechanism

was needed to deliver this knowledge to managers in an easily understandable and consistent way.

The Consequences

The absence figure as reported equated to £18 million in direct salary costs and substantially more when lost productivity, service delivery and staff replacement costs were factored in. Central Government had introduced the Best Value programme in 2000 in which one of the key performance indicators was sickness absence. Public sector bodies were expected to improve, i.e. reduce days lost through sickness absence. Failure to achieve satisfactory scores could result in funding cuts, the authority being put in special measures or in the worst case scenario, management of the authority

The Consequences continued

could be handed to a better performing authority. There was also a Political imperative as the authority's costs are to a large extent covered by local taxation, any increase in local taxes as a result of high levels of staff absence could potentially sway large numbers of voters, in particular those dependent on fixed, low incomes such as pensioners.

The immediate task in hand was to find out if the authority really was losing 20 days / head. Then, if not what was the real figure. Finally whatever the outcomes of the above, how can sickness absence be reduced.

"The council could well end up being handed to a better performing authority to manage"

Was There Really A Problem

When confronting a challenge like this an essential first step is to identify whether there really is a problem; in many cases what is perceived to be the problem is masking unrecognised issues. An almost forensic problem scanning approach is used to fully expose all of the contributory factors. Commonly the approach we use adopts the following framework:

- Research
- Review IT systems
- Review business processes
- Business environment and culture scan
- A full history of the problem

Once the problem scan is completed the findings are then related to the desired outcomes and a Gap Analysis is completed. This is a key document and provides the client with the first indication of the mismatches between the "inputs" and the desired "outcomes".

Data Horrors

For this local authority it quickly became apparent that there were numerous data quality issues. Their IT system in its default configuration reported sickness literally as calendar days for statutory sick pay purposes, correct for payroll purposes but not for lost working time purposes as in many cases non-working days such as Saturday were being included if the start and end dates overlapped a weekend.

A more fundamental problem was that the calculation algorithms used by the system rolled up the days lost when an absence started or ended before or after a reporting period. In simple terms if a manager was looking at their sickness return for June it would also include in total any absence that started in May and ended in June, started in June and ended in July and any other possible permutation.

Detailed research also showed that the BV indicator which related to sickness should be reported in full time equivalent days which meant that for any employee who was part time their absence would be over-

An OLAP Solution

reported. The authority recorded each day lost as one day rather than pro – rata to the employees working hours. A quick examination of the workforce contract data told us that well over half of the staff was part time so potentially this was a huge contributor to the high sickness absence rate.

Once the data was cleaned up and the days lost recalculated to FTE days our attention turned to a user friendly reporting solution. As the authority was already committed to Microsoft products with SQL Server 2000 and 2005 being the database of choice and Microsoft Office on every desktop we opted for a data warehouse approach to leverage the power of Analysis Services.

HR data presents a number of challenges to the data warehouse designer in particular sickness absence was subject to high data latency issues where data was entered onto the system sometime after the event. Any attempt to crystallize the data in standard fact tables would not be able to respond to this. In addition HR data typically makes use of slowly changing dimensions which are often very variable in depth – so called ragged dimensions. Using the tools built into SQL Server we were able to quickly model the business and overcome these challenges and for the first time for this organisation produce interactive, detailed and highly visual reports by utilizing the ability of Excel to connect to the OLAP cubes in Analysis Services.

"HR presents very particular challenges to the data warehouse designer."

Outcomes

The data analysis and cleaning phase of the project identified a number of serious issues ranging from 1000 days being entered instead of 1 to calendar days being used instead of FTE days. After we had processed, cleaned and reloaded the data back into the Authority's HR/Payroll database there was an immediate reduction of reported sickness from 20 to 12 days per head (FTE). First impressions were that such an improvement was highly improbable but rigorous testing and both internal and external audit confirmed the improvement. Whilst still in the "poorer" end of the spectrum of local authority sickness absence our authority now had a secure, accurate and consistent base to work from.

The OLAP tools we developed proved to be a key tool in managing down sickness absence over the next three years. By combining OLAP's ability to view data in a dimensional form managers were able to drill into the data by time, location and sickness cause. Visualized through Excel's pivot tables and pivot charts what was once a difficult statistical exercise became trivial as island of high sickness could be seen immediately. After three years the authority's sickness rate was down to 8.6 days / head (FTE) and was contributing to an award from central government of 4*, or placing the Authority into the best performing group of authorities in the UK.

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Your business has a story to tell

Stonemanor Analytics is a new business support and data analysis service run as a social enterprise. We are an association of four experienced data professionals with a wide range of experiences and qualifications. We are committed to providing a high quality, professional service to all clients but are particularly interested in working with other social enterprises, charities and organizations working in the care, environmental or educational sector. Our goal is to enable small businesses, charities and other social enterprises to make use of the wealth of knowledge that is locked up in their IT systems and in their employees. We do this by working in a genuine partnership with our clients which we feel rebalances the relationship between client and consultant. We are committed to knowledge transfer and will not leave your organization needing to buy continuing services unless you want them.

We're on the web: stonemanoranalytics.co.uk

An Analyst's Perspective

This project was particularly satisfying for a variety of reasons. Top of the list was the immediate positive benefit the organisation got from the project. For me another key outcome was the initiation of wider organisational change which revolved around the adoption of a more knowledge based decision making culture. Information came to be seen as an asset rather than a by product and data owners began to collaborate rather than operate in silos. For public sector organisations the data and the information that can be derived from it should be seen as a product as valuable in many ways as the services they provide.