

## BUSINESS INTELLIGENCE

### MICROSOFT APPLICATION SOLUTIONS

Microsoft Performance Point Server  
Microsoft Office SharePoint Server



## CUSTOMER PROFILE

Newcastle International is the principal airport in the North East of England, and is among the largest regional airports in the United Kingdom.

With around five million passengers annually, and 80 world-wide destinations available, Newcastle International is continuing to grow and develop strong relationships with their passengers and the local community.

The airport's shareholders include seven local authorities and Copenhagen Airports, creating a Public Private Partnership organisation.

Over the last few years, the airport's IT strategy has seen them improving operational efficiency by harnessing the latest IT technologies in a creative and adaptable manner.

# Business intelligence for revenue generation

"The project has delivered an exceptional business intelligence system that provides us with dynamic information which we can use to proactively improve our business performance. "

George Nesbitt, General Manager - Business Development & IT,  
Newcastle International

## CHALLENGE

With a range of technologies in use across the different business areas, Newcastle International found measuring the performance of the business a complicated, time-consuming process.

Although Key Performance Indicators (KPIs) had been defined, the data required to calculate them was locked away in many disparate systems, with separate, manual processes required to extract and view data from each source.

The airport required a solution to capture, store and utilise the information generated in an operational and management capacity to support future decision-making.

## SOLUTION

Newcastle International and Waterstons worked together to analyse the data sources available and relate these to the defined KPIs.

A secure data warehouse was designed to facilitate reporting and analysis. Data is extracted from a variety of sources, including: SAP ERP system, EPOS, Flight Information Display System (for passenger and flight data) and their car parking and telephone systems.

The extraction process was configured to run daily. Data is manipulated by ETL (Extract, Transform and Load) routines and inserted into the warehouse:

- Data is processed and held in "Analysis Cubes" which can be interrogated using various reporting tools. The efficient cube structure allows for quick delivery of results, even with the vast quantities of data involved.
- Data is delivered to the management team via scorecards which provide an overview of business performance and comparisons to forecast figures. Traffic light indicators highlight areas of concern.

- The advanced drill-through and slice-and-dice capabilities of hands-on reporting applications allow detailed exploration of the data; visualisation of trends over time; and provide factual bases for hypothetical analysis.

## BENEFITS

The solution provides real time information to efficiently assess Newcastle International's business performance and enables speedy decisions to be taken based on factual information in response to market conditions:

- Commercial Revenue and Operational cost performance can be tracked allowing continuous assessment of the business' performance.
- Collective data allows automatic calculation of operational KPIs such as passenger throughput and dwell time, enabling assessment of the passenger journey with the aim of reducing queue time.
- Scorecards are deployed through the existing Sharepoint based intranet system allowing managers to view performance data easily within team sites.
- Advanced reporting provides the data on which informed decisions can be made regarding operational performance, pricing, promotional offers, and advertising spend.
- Analysis of car park bookings and comparison to budget and previous year's performance allows for optimal resourcing and a more proactive marketing approach.
- The solution can monitor the timing of passengers' journeys at various stages from check-in through to gate, providing information to help minimise queuing time.



# More Information

## TECHNOLOGY

The solution at Newcastle International combines a number of tools to create the user interface and behind the scenes data storage and manipulation.

### Data Warehouse

Hosted using Microsoft SQL Server 2005, with Microsoft SQL Server Analysis Services providing OLAP (Online Analytical Processing) cubes and dimensions.

### System integration

Using Microsoft SQL Server Integration Services, data is extracted from various sources and transferred to the data warehouse in a consistent format.

## Administration interface

A number of custom interfaces were developed, using ASP .NET, allowing administrators to manage data uploads and static data, and re-process analysis cubes.

## Presentation technologies

Scorecards were built using Microsoft PerformancePoint Dashboard Designer, and deployed to Microsoft Office SharePoint Server 2007. For drill-through analysis, ProClarity Professional is used. Data can also be explored using Microsoft Excel, using its PivotTable functionality to facilitate direct connections to the warehouse cubes.

## BUILDING ON SUCCESS

The success of the project has led to an expansion of the data warehouse encompassing data from other areas of the business. New developments incorporate aeronautical, financial and human resources data, as well as data from security systems which allows monitoring of passenger movement habits in the terminal. The scalable design of the warehouse, and the choice of implementation technologies, mean that additional "modules" such as these can be added as and when data is made available.

*"Waterstons' development expertise and application of the latest Microsoft technology has been integral to the success of this project."*

George Nesbitt, General Manager  
- Business Development & IT.

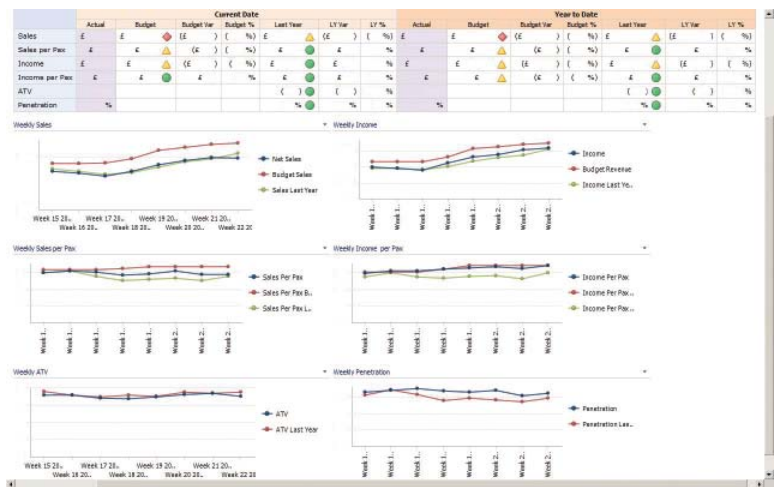


Figure 1:

Using easily developed and quickly deployed PerformancePoint 'scorecards' a wide range of information can be presented in an easily understood and highly-interactive form through SharePoint.

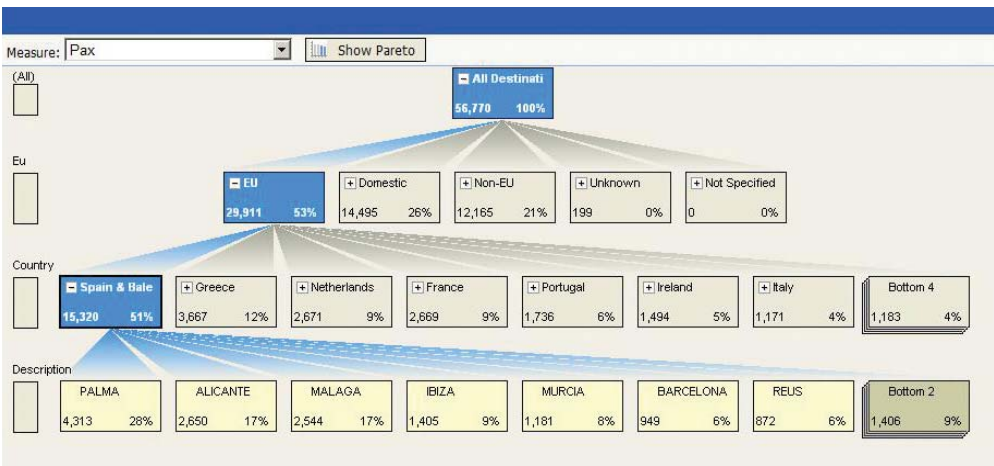


Figure 2:

Detailed users can harness the power of ProClarity Professional to analyse data using drill-through processes and complex visualisations to provide more detailed breakdowns of information.