UNIVERSITY OF BIRMINGHAM

A-Level Clearing in SharePoint Experiment Report

Summary

This experiment is a follow-up of a previous experiment on the BI features in MS SharePoint. The aim was to test the live SharePoint system using real time A-Level Clearing data to present a real time data visualisation on the display dashboards. There were 3 key stages in this experiment:
1. To gain access to A-level clearing data.
2. To configure the SharePoint site with BI features and set up connection to the data source.
3. To analyse the data and use the business intelligence features in SharePoint to present the data.

Access to real time clearing data was not granted and therefore it was not possible to demonstrate the visualisation features in real time. However, it was possible to set up a demo using historic data for the period 2010-2013. The experiment proved that:
1. With access to a live data set, it is possible to run data visualisations in real time.
2. SharePoint is not only useful as a platform to share data; there is added value using it as a tool to analyse and visualise data.
3. Once the system is configured, it is very easy for the authorised user to view, access, and present the data analysis result.

Experiment Overview

Stage 1 - Access to A-Level Clearing Data

Various channels were explored to get access to the data sources:

1. Admissions Team: After several attempts to schedule meetings to discuss access to clearing data, half way through the experiment it became clear that the admissions team couldn't provide access to the required data sources. Other channels were then tried to get access to a live data set.

2. Student systems: Direct access to Banner was not allowed by the Student Systems team. No response was given regarding the read only access. A meeting was held on to discuss access to the admissions data source. There was a suggestion to use historic data, and we were referred to Registry. A historic clearing data report was created from BOXI. An Excel version of this clearing report was used as local data source in SharePoint for this experiment.

3. BOXI: The Innovation Team were given read only access to BOXI to retrieve specific admissions data. An ODBC connection was successfully set up on the Lab PC.

Stage 2 - Configuration of SharePoint Innovation BI Site

- The configuration of Excel Services, PowerPivot Services and file size limitation were solved early in the process with the assistance of the SharePoint team.
- The external data sources connection to clearing data is still pending due to lack of resources and the complexity of the task. There are complications setting up a .NET connection to Oracle, as it seems that Microsoft does not provide suitable drivers – there is an Oracle product that can be installed, but this is not a trivial task. The SharePoint Team are looking at an alternative method using an indirect connection between SQL Server and Oracle2.
- Once the external data sources connection is set up, further testing will be required to determine the amount of data that can be imported at a time and to test the data refresh frequency.

Stage 3 - Analysis of Clearing Data

The analysis of A-Level clearing data was based on historic clearing data from BOXI. Four BOXI reports were created for clearing data from 2010 to 2013. We are still currently working on data analysis with these local data, if live connection from SharePoint to BOXI could be configured, further experiments could be carried on the live data.

Data visualisations in this experiment were implemented in two ways:

1. The first method used PowerPivot in Excel and the SharePoint Business Intelligence Web parts. PowerPivot is a free plugin in Excel 2010, and is integrated in Excel 2013. It is very convenient to do data mashing up, and then use SharePoint BI web parts to present the results in a web page.
2. The second method used Dashboard Designer. Dashboard Designer is part of the Performance Point Service in SharePoint Server. Dashboard Designer can connect to various data sources including analysis services, Excel services, SharePoint list, SQL Server table and Excel workbook. Once the data source is connected, the advantage of Dashboard Designer is that it provides many tools and templates to design the user's template. It also has scorecards, KPI, and various indicators etc. so users can choose the most suitable tools to represent their data.

Findings

- To connect SharePoint site to an external data source requires the involvement from the data source team, a SharePoint developer, and the SharePoint site administrator. Clear and specific requirements need to be defined. A deep understanding of the data is necessary. It is critical to set up and test the data connection thoroughly.

- There are certain limitations to expose large quantities of data in SharePoint as an external data list. First, it needs to have the unique identifier for each table to import. Second, it cannot import more than 5000 rows in a list view without experiencing potential timeout issues.

- For large quantities of data in SharePoint, it works better to publish the required analysis result (for instance, the PowerView report) on a SharePoint page or to use an Excel 2013 file stored in SharePoint that has a PowerPivot component with a data source defined.

- PowerView and PowerPivot comes with Office 2013, they provide more integrate functions and easy to use features to interact with SharePoint.

Conclusions

- The key factor that determined the outcome of this experiment was the lack of access to a real time data source.
- With access to a live data set, it is possible to run data visualisations in real time.
- The most significant BI features in SharePoint have been tested. SharePoint works well as a collaborative platform. Besides, it is not only useful for sharing data but also to give insights of the data. From a user's point of view, to display analysis results in a dashboard on a SharePoint site is straightforward and very easy to understand.
- Further work is still required in terms of configuration to connect SharePoint to external data sources.