Mahindra Satyam

BI Capabilities in SharePoint Online using Infragistics Controls

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Introduction

Microsoft® SharePoint® Online is a collaboration and messaging tool that is part of the Microsoft Business Productivity Online Suite (BPOS). SharePoint Online is available over the cloud on a subscription basis.

SharePoint Online enables customers to quickly build custom portals/sites for their business needs by using a browser that can be further customized using SharePoint designer.

Since SharePoint Online is available over the cloud, Microsoft reduces Total Cost of Ownership (TCO) for customers by handing operational aspects such as provisioning, feature delivery (through regular updates), availability (through regular backup and maintenance) etc.

Business Challenges

To meet company goals, many businesses will need to customize SharePoint Online's out of the box features.

Though SharePoint Online is built on top of SharePoint 2007, it does not offer all the features of SharePoint 2007. For example with on-premise SharePoint infrastructure, users have an option to customize the portal with custom Web Parts deployed on the server. As SharePoint Online does not have access to these servers, users cannot build and deploy custom Web Parts.

Since BI capabilities like KPIs, Chart Web Part, Excel services etc., are not available in SharePoint Online, there are further challenges to customization.

Hence an innovative solution is required that on the one hand overcomes some of these limitations in order to enable flexible customization and on the other hand leverages the benefits of the cloud.

Proposed Solution

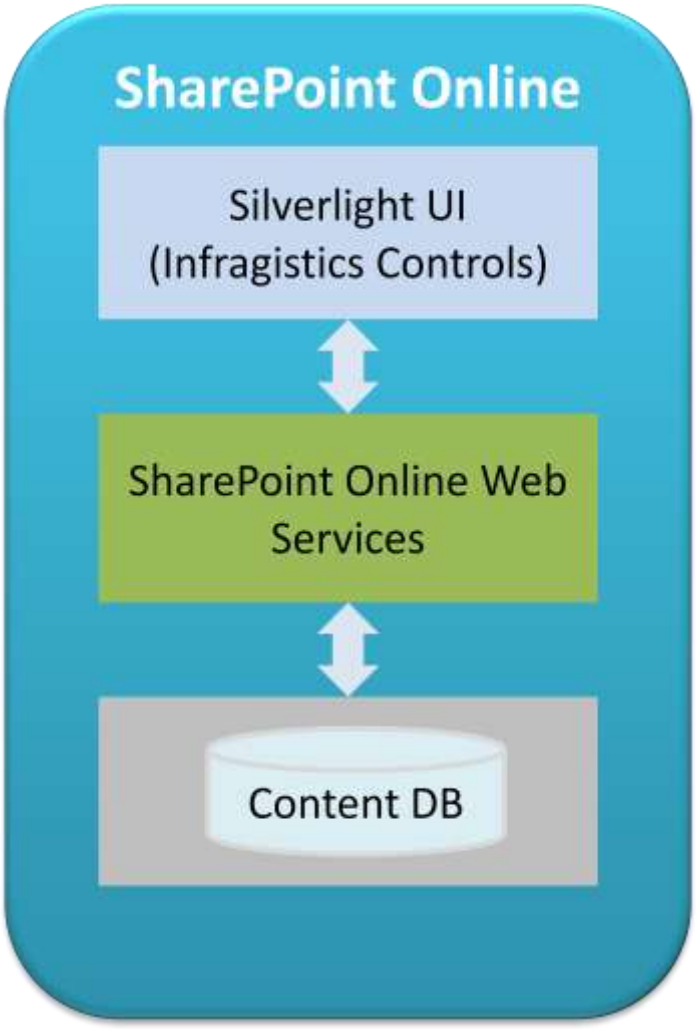
Since SharePoint Online does not allow any customization on the server side, the proposed solution is to implement a Silverlight-based user interface (UI), which uses Infragistics® controls for Silverlight to build the dashboard. The proposed solution relies on Infragistics controls for Silverlight (xamTileView™) to deliver the rich and unique user experience to end users and to enable customization.

We will look at a scenario where a business needs a portal for the sales team to manage sales targets and actuals for each quarter. And through a sales dashboard, management can track the sales progress. The sales dashboard should show a chart with quarterly metrics of target vs. actual sales for each sales person.

In this scenario, sales data is stored in a custom list created on the SharePoint Online portal. SharePoint Online exposes the web services to get the various SharePoint Online artifacts.

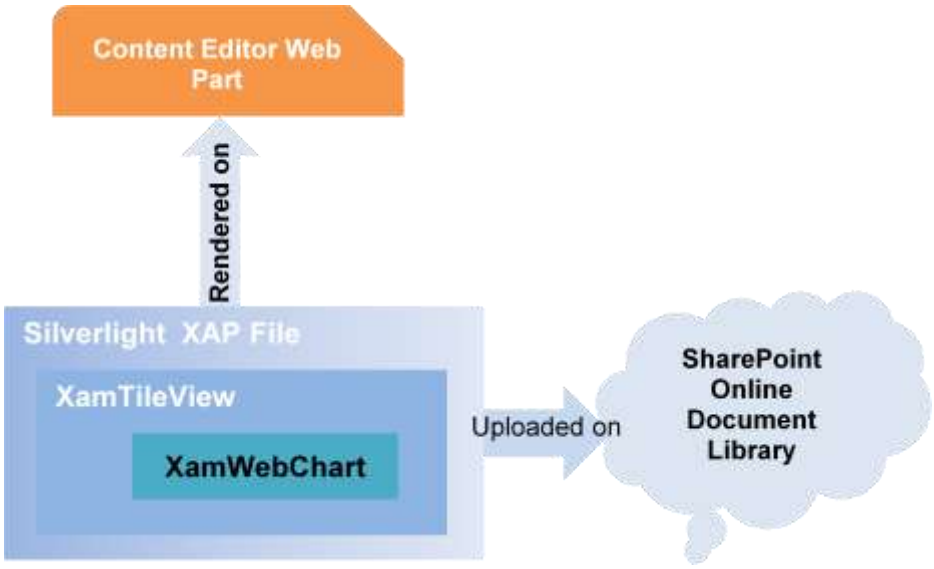
The Silverlight-based UI solution consumes the web services of SharePoint Online to retrieve data from the custom list. In this scenario, mySharePointOnlineURL/_vti_bin/Lists.asmx web service is used to retrieve the list data. The web service returns the data in XML format which can be converted into a collection of objects by using LINQ.

Once the data is fetched from the list into object collection, it is displayed in the Silverlight UI. The proposed solution creates multiple TilePane views (Infragistics control) at runtime to represent the data for each salesperson.



The proposed solution has the Silverlight user control, built using xamWebChart™ and added on each TilePane view at runtime, to display the sales actual vs. target data as a series for a particular sales person.

Once the Silverlight component (XAP file) is ready, it is hosted on the document library of SharePoint Online and rendered on a Content Editor Web Part in a Web Part page of the site.

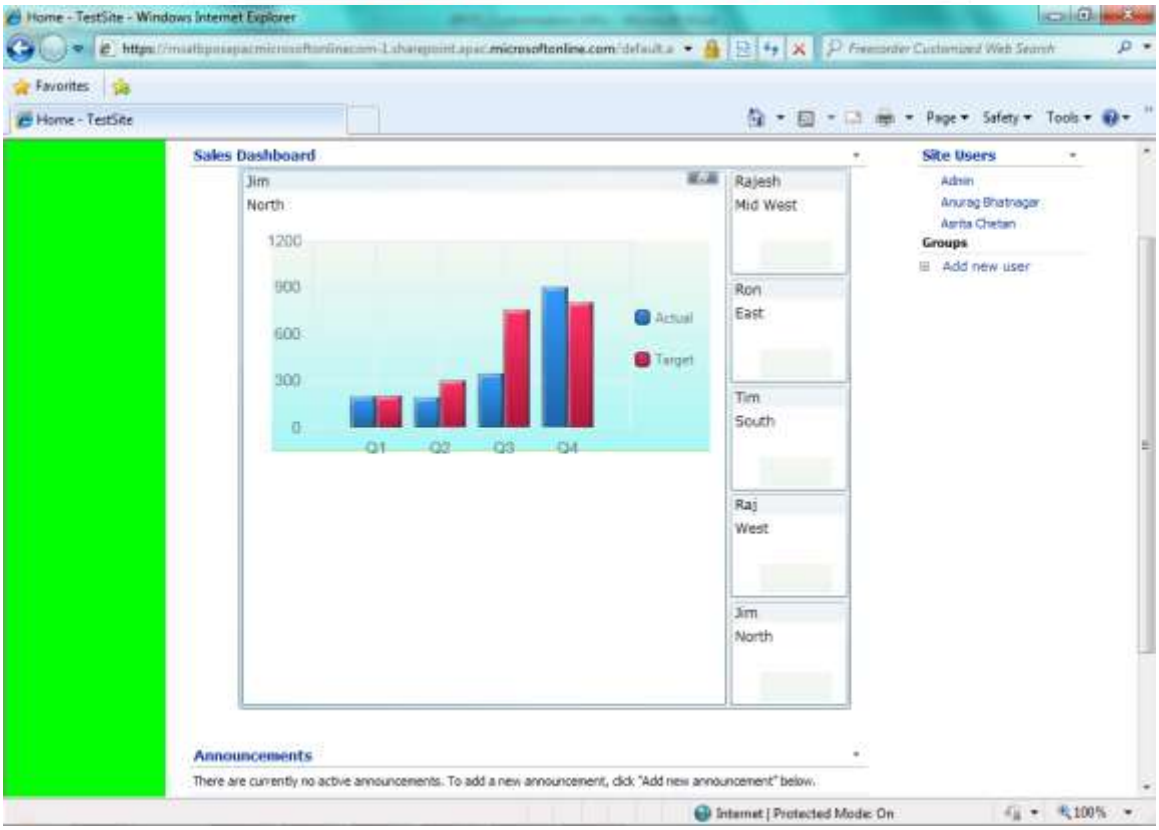


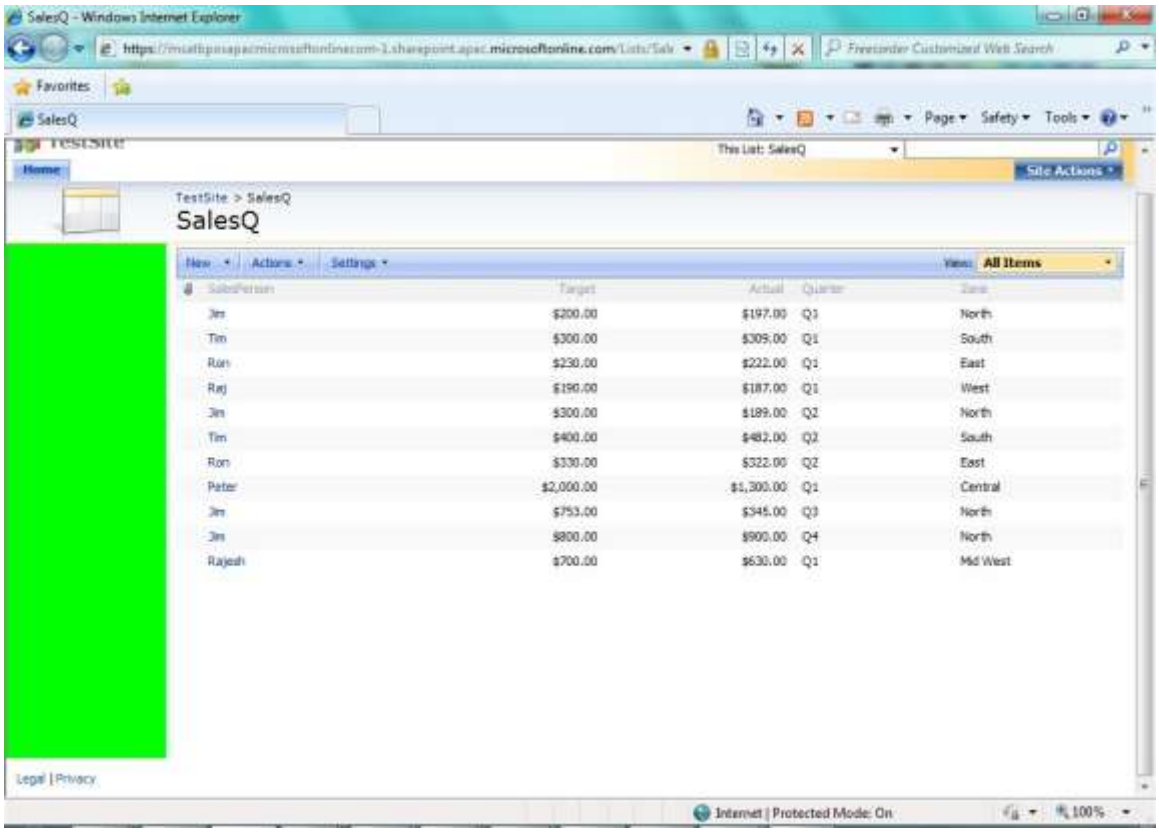
Note: Similar techniques can be used in some scenarios where data is stored on the premise database and needs to be presented on the SharePoint Online portal. The only difference would be consuming the web service exposing the on-premises data instead of consuming the SharePoint Online web service.

Business Benefits

- Achieved customization in SharePoint Online by developing a rich, unique and powerful user interface using Infragistics controls.
- Management gets the real time view of data in a dashboard format, which can be extended to support the drill down capabilities by clicking on any of the bars in the xamWebChart control.
- Less design, development and testing efforts by using industry-proven Infragistics controls to build the user interface. Minimal development effort is needed to consume data as these UI controls are well-tested and have rich features like animation, controls layout etc.
- No page post back while changing the view within xamTileView™ control.
- xamTileView supports the paging, so no code changes are required to accommodate additional sales persons' data.

Screenshots





Pseudo Code

- Create necessary custom list in SharePoint Online
- Create a Silverlight application using Visual Studio
- Add reference to necessary assemblies of Infragistics and SharePoint Online web service
- Create a user control in Silverlight by using Infragistics controls
- Get the required data from SharePoint Online list in XML format
- Create an Object to define the structure of the data (equivalent to list structure)
- Use LINQ to XML to get the data in an Object collection
- Once data is received in a defined Object collection, create Infragistics controls in code behind and bind the data for each controls
- Build the project to get the XAP file
- Upload the XAP file in one of the document libraries in SharePoint Online
- Create a Web Part page in SharePoint Online or edit any existing page and add Content Editor Web Part
- Modify the Content Editor Web Part content by adding code to display XAP file by using Source editor

References

1. Microsoft Business Productivity Online Service
   http://www.microsoft.com/online/products.aspx

2. Infragistics Controls
   http://www.infragistics.com/

3. Silverlight
   http://www.silverlight.net/