Choosing the right Mobile BI tool: SSRS vs Power BI vs Datazen

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getlatestversion.it
dotNET {podcast}

ENQAOE IT SERVICES
U GISS
innova community

November 28°, 2015
Speaker | @bruco441

- Analyst/Developer working in IT department of Banco Popolare. I deal with all the application involved in Human Resources management.

- Main skills and tasks: SQL Server, Oracle, Data Warehouse, Reporting, BI, Analysis Services, C#.

- MCTS “SQL Server 2008 Developer”.

- Author on sqlservercentral.com
Agenda

- Mobile Business Intelligence - before Summit 2015
- Microsoft's reporting New Age: towards integration
- SS Reporting Services
- Datazen
- Power BI
- Choosing the right tool
- Conclusions
Mobile Business Intelligence tools

Up to PASS Summit 2015, Microsoft's BI stack for mobile reporting was made up of three different tools partially overlapping:

- Reporting Services (yes, it can!)

- Datazen

- Power BI
Microsoft's New Age for Reporting

During PASS Summit 2015, Microsoft announced its strategy to harmonize reporting content types across platforms and systems.

... Data is coming at us from every direction. From traditional sources – on-premises enterprise applications and databases. From sources developed over the last decade – websites, mobile applications, social media and SaaS business applications ...

... we are aligning our cloud and on-premises solutions. It is our intent that your reporting technology investments and expertise will transfer across these deployment modalities so you can easily mix and match on-premises and cloud components, and benefit from our unique hybrid scenarios.

Microsoft's New Age for Reporting

New Microsoft's approach distinguishes four types of reports, based on production technology and delivery method:

- **Paginated Report.** Standard report type, with many elements and complex business logic. Built with Report Builder or SSDT (Visual Studio).
- **Interactive Report.** Allows dynamic and interactive view. Built with Power BI Desktop.
- **Mobile Report.** Specially optimized for mobile devices with simple logic and few elements. Built with Datazen.
- **Analytical reports and charts.** Created with Excel directly by end users.
Microsoft's New Age for Reporting

...Unified Mobile BI experience
Whether using SQL Server Reporting Services on-premises, Power BI in the cloud, or both as your report delivery solution, we’ll have a single mobile application (for each of Windows, iOS and Android) for consumption of all report types. At PASS Summit 2015 we demonstrated a single Power BI mobile application delivering a combination of report types from both SQL Server Reporting Services 2016 and the Power BI service. All of your BI content will be at your fingertips from within a single, unified mobile app to deliver insights any way, anywhere and from any device.

...(Microsoft Business Intelligence – our reporting roadmap
Towards Integration

From parallel convergences ... To integration
What's new for SSRS 2016 (1)

The **2016 release for Reporting Services** provides full support for on-premises and mobile reports, hosting contents from **SSRS, Datazen, Excel and Power BI** (future development).

The web site has been totally revisited allowing users to access both paginated and mobile reports in one centralized location. **Datazen Engine will be totally merged into Reporting Services.** No more need for a dedicated server to publish its own reports.

![Image of Reporting Services interface]

From Report Manager

To modern integrated platform.

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What's new for SSRS 2016 (2)

Some other cool features are expected. Microsoft aims to bring Reporting Services to new life and modernize it, in order to make SSRS the central repository for on-premises development (versus using Power BI in the cloud).

**HTML engine was completely rewritten to HTML5**, to support every modern browser on every device.

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**Daily Store Report**

**Fabrikam**

*October 27, 2013 | Store: Seattle Downtown | Manager: James Phillips*

**STORE TRAFFIC**: +11% (WtW)

- **653**

**SALES**: +57% (WtW)

- **$38,331**

**CONVERSION RATE**: +61% (WtW)

---

**SEVEN-DAY SALES TREND**

*Last year | This year*
What's new for SSRS 2016 (3)

Report parameters can be moved anywhere in any order on the design surface.
What's new for SSRS 2016 (4)

- Unique release for SSDT, that includes BI tools, too.
- Export reports to PowerPoint format
- Print reports directly from the browser (without installing an ActiveX control).
What's new for SSRS 2016 (5)

Two new charts: sunburst and treemap
What's new for SSRS 2016 (6)

Pin charts to Power BI dashboards (currently available as CTP 3).
What's new for Power BI

In the view of integration, Microsoft announced some improvements in Power BI, to be released on a weekly basis:

- **DirectQuery** and live data sources to SQL Server, Azure SQL Database and Azure SQL Data Warehouse, SSAS
- **Enterprise Gateway** for on premises direct data connection
- Power BI mobile app integration to **display new SSRS mobile reports** as well
- PowerBI.com **dashboard tiles interactivity**, to pin entire reports as well as just individual components to them
- **Embedding ranges and charts** as well as **3D maps** from Excel workbooks into PowerBI.com reports
- **Personalized Visuals** developed directly from users
- **Globe Map** (not the same as Excel Power Map)
Power BI updates

Power BI

Power BI Weekly Service Update

Power BI Team  24 Nov 2015 1:00 PM  4

This week’s update has been in the making for some time now with a number of small improvements and with one very significant feature that has been requested by many of our customers.

Here’s a summary of all new features in this release:

- Pin Excel Ranges to Dashboards
- Chromeless Full Screen Mode for Dashboards and Reports
- Know Where Your Data is Stored
- Improved Loading of On-Premise Reports
- Share Dashboards Directly to Another User’s Workspace
- Improved Google Analytics Connection Experience
- Close Your Power BI Account

Source: Power BI Blog

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Power BI updates

November 2015 Update (2.29.4217.81)

You can now download the latest version of Power BI Desktop.

Another month, another big collection of new features and improvements for Power BI Desktop. Improvements range from new data connectors to new modeling capabilities. Here are 26 new features and improvements:

Report Authoring:
- Play Axis for Scatter Chart
- Horizontal Slicers
- Slicer Selection Behaviors (single vs. multi-select)
- Control Z-order
- Background Colors for Slides
- Interactions between visuals - Subview (tile by)
- Duplicate Pages
- Support for KPIs in Tables, Matrices and Cards
- Better Tooltips on Area Charts & Line Charts
- Ability to change Text size in Cards & Tables/Matrix
- Improved tooltips and labels in Field Well and Formatting panes
- Ability to see Categories with no data
- Improved Default Sort behaviors for visuals
- Ability to control Axis Scale display units
- Visuals Refresh Optimizations when applying basic modeling operations

Data Modeling:
- Basic Automatic Date Features

Data Connectivity:
- SSAS Multidimensional support
- SAP Hana
- K-Script
- DirectQuery for SQL Server, Azure SQL Database and Azure SQL Data Warehouse
- Azure Data Lake


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So where does that leave us?

The solution is an hybrid approach to mix the needs coming from a big data world where data live in many locations and can be gathered in different ways.
So where does that leave us?

With the new scenario arriving, how do all the components are positioned?

**Reporting Services:** paginated, on-premises reports with high interactivity and complex business logic. Fitted for local and distributed Corporate BI

**Datazen:** mobile, on-premises dashboard, with high interactivity and few elements. Fitted for distributed mobile Corporate BI

**Power BI:** hybrid reports and dashboards, integrating data from both on-premises, Internet and cloud data sources. Highly customizabible and advanced data shaping. Fitted for Self Service BI, data analyst, and groups collaboration
Mobile BI tools

Let's step back to present, to discover and explore how we can design and deliver Mobile BI with existing tools.
Reporting Services

SQL Server Reporting Services (SSRS) to date has focused on paginated reports and offers class-leading capabilities for that format. It does not (so far) support mobile BI natively, but we can build reports in a way that make them suitable to mobile devices (smartphone and tablets).

You create reports using Report Builder and Report Designer in SQL Server Data Tools.
Reporting Services architecture

Diagram showing the architecture of Reporting Services, including layers such as Data Sources (SQL, OLE DB, XML/A, ODBC, Oracle, Custom), Web UI, XML Web Service Interface, Report Server, and Security Services (NT, Passport, Custom). The diagram also illustrates output formats (HTML, Excel, PDF, Custom) and delivery targets (Email, SharePoint, Custom).
Reporting Services

How to develop SSRS reports for mobile supports (1/3):

- Set report dimensions based on screen's device width and height
- Every report is suited for one single device

<table>
<thead>
<tr>
<th>Device</th>
<th>Dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height:</td>
</tr>
<tr>
<td>iPhone</td>
<td>4.5 inches (115.5 mm)</td>
</tr>
<tr>
<td>iPad</td>
<td>9.7 inches (242.8 mm)</td>
</tr>
<tr>
<td></td>
<td>Width:</td>
</tr>
<tr>
<td>iPhone</td>
<td>2.4 inches (62.1 mm)</td>
</tr>
<tr>
<td>iPad</td>
<td>7.47 inches (189.7 mm)</td>
</tr>
<tr>
<td></td>
<td>Depth:</td>
</tr>
<tr>
<td>iPhone</td>
<td>0.46 inch (12.3 mm)</td>
</tr>
<tr>
<td>iPad</td>
<td>0.5 inch (13.4 mm)</td>
</tr>
<tr>
<td></td>
<td>Weight:</td>
</tr>
<tr>
<td>iPhone</td>
<td>4.8 ounces (135 g)</td>
</tr>
<tr>
<td>iPad</td>
<td>1.5 pounds (680 g)</td>
</tr>
</tbody>
</table>

Screen:

- iPhone: 3.5-inch (diagonal) widescreen
- iPad: 9.7-inch (diagonal) widescreen

480-by-320 pixel at 163 ppi

1024-by-768 pixel at 132 ppi
Reporting Services

How to develop SSRS reports for mobile supports (2/3):

- Simplicity is the best rule. Less is better than more
- If necessary, break a single complex report into several separate reports and set navigation
- Hide toolbars and other infrastructure elements. For instance, to the url you can add “rc:Toolbar=False”
- Make the data readable without zooming
- Security and profiling settings are inherited from Report Server
How to develop SSRS reports for mobile supports (3/3):

- Add “touch” interactivity based on SSRS standard features:
  - Sorting
  - Collapsing and expanding report item with (+)
  - Selecting and setting parameters values by tapping (exploit the Action property of most objects inside the report)
  - Navigating inside the report or among different reports
DEMO

Reporting Services

**Smartphone**

**Tablet**

User: SQLSat462 password: SQLSaturday462
Reporting Services – pro & cons

**Why use Reporting Service for mobile BI**

- Low learning path
- Standard features can be reused
- Highly customizable. Can add complex business logic
- Full control on every object (visibility, behavior, action, etc.)
- Part of Microsoft BI suite. Natively integrated into SQL Server
- Corporate integrated security and profiling
- Free

**Why not use Reporting Services for mobile BI**

- Reports must be adapted to mobile.
- Must develop as many reports as many devices and sizes. Every change must be replicated many times
- Tricky navigation technique. Reports may be complex to create and maintain
- Page refresh can be long and tedious
- Need IT professional to set up and develop
- Few data sources available
- No data modeling allowed
Datazen

Reporting tool focused mainly on develop and delivery for mobile BI. It became available to SQL Server's users on April 2015, since Microsoft acquired the company. With Datazen developers can easily realize reports, dashboards and KPIs and publish immediately on every device included mobile. Product keywords are: quickness and simpleness. It integrates natively with SQL Server databases and Microsoft's security infrastructure.
Datazen features

Datazen key features are:

• Unified dashboards designer for any visualization
• Build rich interactive visualizations
• KPI repository
• Native apps for all mobile platforms (Windows, iOS, Android)
• Direct browser access via HTML5 rendering
• Team collaboration
• Custom branding
• Native connection to cloud & enterprise data sources (SQL Server, Analysis Services, Azure, ODBC, …)
• Advanced and integrated security
• Server side data caching for performance improvement
• Client side data caching for offline access

Last but not least ... It's free!
At least if you use SQL Server Enterprise Edition with Software Assurance
Datazen architecture

Datazen is based on a client-server architecture.

Datazen Enterprise Server is the core application. It is installed on a Windows Server, is integrated with the existing security infrastructure and connected to all relevant data sources. (www.datazen.com)
Datazen delivery model

Dashboards are built locally on developer's pc and published on the server using the Datazen Publisher app.

Contents are accessed via the mobile clients and web browsers which connect to Datazen Server securely and don't need direct access to the rest of the IT environment. (www.datazen.com)
Datazen

Download the app!
Connect to server: datazenvmamt.cloudapp.net
Username : SQLSat462 pwd: SQLSaturday462

Via browser go to the url:
http://datazenvmamt.cloudapp.net/viewer
Username: SQLSat462 pwd: SQLSaturday462
# Datazen – pro & cons

<table>
<thead>
<tr>
<th>Why use Datazen for mobile BI</th>
<th>Why not use Datazen for mobile BI</th>
</tr>
</thead>
<tbody>
<tr>
<td>• It is made to this .... Fits natively for every device</td>
<td>• Simple business logic</td>
</tr>
<tr>
<td>• Low learning path</td>
<td>• No objects behavior personalization</td>
</tr>
<tr>
<td>• Rapid dashboards creation and development</td>
<td>• Simple navigation</td>
</tr>
<tr>
<td>• Easy delivery method</td>
<td>• Needs a app to be executed</td>
</tr>
<tr>
<td>• Many data sources available</td>
<td>• Windows 7 Publisher with bugs</td>
</tr>
<tr>
<td>• Corporate security and profiling. Active Directory authentication</td>
<td>• Need IT professional to set up and configure Server Core application</td>
</tr>
<tr>
<td>• Free for users with SQL Server Enterprise release</td>
<td>• No data manipulation allowed. Query must be prepared in advance</td>
</tr>
<tr>
<td></td>
<td>• Little volumes of data</td>
</tr>
</tbody>
</table>
Power BI

Power BI is the new cloud-based business analytics service that helps create live operational dashboards from on-premises and cloud data in one central location that you can access across a range of devices.

With Power BI, users can easily retrieve data from different data sources; explore, analyze, combine and model data, create reports or dashboards to share with others.
Power BI features

Power BI combines several components. Some were already released as add-in for Microsoft Excel:

- **Power Query**: connect to data sources and easily shape and transform data
- **Power Pivot**: in memory data blending and modelling tool
- **Power View**: data visualization
- **Power Map**: 3D Geo-spatial data visualization

Besides the above, other components are present to build the complete infrastructure:

- **Power Q&A**: engine for answering to questions put in natural language
- **Power BI Desktop**: Authoring tool for local development
- **Personal & Enterprise Gateway**, to connect to on-premises data
- **Mobile Apps** (for Windows phone, iOS, Android).
Power BI features

- A plethora of **data sources** available. Retrieve data from on-line, on-premises or cloud-based sources and services
- **No dependency on IT** to retrieve and process data
- **Graphic interfaces** to model and analyze data, set relationships, add measures and calculated columns. Tailored to self-service BI
- Need a **enterprise account** (no xxxxx@gmail.com!)
- **Data Catalog**, to share and reuse queries between users
- **Groups, content packs**, and other collaborative features
- **Visuals custom gallery**, made directly by users and freely available
- **Q&A** in natural language
- Delivery model: **mobile apps** for Windows phone, Android, iOS. Online web site **www.powerbi.com**
- **REST API** to access and consume objects
- Two license options: **Free** (with some limitations) and **Pro**
Power BI features

How many Connectors can you count?

46 (til now ...)
Power BI features

Visualize your data, your way using custom visuals in Power BI

The Power BI visuals gallery: a community site (visuals.powerbi.com) that allows creators to upload new Power BI visuals and for users to browse, select and download those visuals.

Power BI developer tools: With our developer tools every web developer can code, test and package new visuals directly in the Power BI service to be loaded to the gallery.
Power BI features

Mobile app landscape mode –

Just released!

Landscape mode allows users to view and navigate dashboards in the same way as they do in the Power BI web app.
Power BI architecture

Three basic objects type:

• **Datasets:** collection of data (tables). All tables of in a dataset can be completed with relationships, measures, calculated columns, etc.

• **Reports:** visualization tools arranged on a page

• **Dashboards:** collections of tiles pinned from reports.
Power BI architecture
Power BI updates

Direct Query – November new

Usually, in Power BI Desktop, when you connect to a data source, data are imported into the Power BI Desktop. For some data sources, an alternative approach is available: connect directly to the data source using DirectQuery. Direct Query queries directly you underlying data without import them.

The following data sources are currently supported:
- SQL Server - Azure SQL Database - Azure SQL Data Warehouse – SAP HANA (preview)
# Power BI prices

## Free vs Pro subscription

<table>
<thead>
<tr>
<th>Feature</th>
<th>Free POWER BI</th>
<th>$9.99 user / month POWER BI PRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data capacity limit</td>
<td>1 GB/user</td>
<td>10 GB/user</td>
</tr>
<tr>
<td>Create, view and share your personal dashboards and reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Author content with the Power BI Desktop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explore data with Natural Language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access your dashboards on mobile devices using native apps for iOS, Windows, and Android</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consume curated content packs for services like Dynamics, Salesforce, and Google Analytics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Import data and reports from Excel, CSV and Power BI Desktop files</td>
<td></td>
<td></td>
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</tbody>
</table>

### Collaboration

<table>
<thead>
<tr>
<th>Feature</th>
<th>Free POWER BI</th>
<th>$9.99 user / month POWER BI PRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborate with your team using Office 365 Groups in Power BI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create, publish and view organizational content packs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manage access control and sharing through Active Directory groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared data queries through the Data Catalog</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Power BI
Have you got an account?
Power BI – pro & cons

Why use Power BI for mobile BI

- Fits perfectly on every device
- Lots of data sources both on-premises and on-line
- Advanced data modeling and manipulation (Power Query, M language)
- Simple report and dashboards creation and development
- User custom visuals
- Easy delivery method
- Suitable for expert users to perform Self Service Analysis. No need for IT professionals.
- Developer API

Why not use Power BI for mobile BI

- Cloud service
- No easy manual settings for groups collaboration and content packs creation
- No real time access to data (partially resolved). It needs a Gateway anymore
- Needs a app and a login to be executed
- Cost (9,99$ month/user)
Conclusions: choosing the right tool

There isn't one tool that fulfils every requirement. The choice depends on your expectations, your needs and your organization's infrastructure.

If you are ...

A company that needs to distribute reports and analytics to a medium number of users, with complex business logic and drill down capabilities.
Then you should use ...

A company that needs to distribute summary reports and dashboards to a small number of users with some metrics clearly visible.
Then you should use ...

A company, an individual, a small group of users who need to compare data from many sources, analyze data, manipulate data, build custom visualizations of data, share them with other user and draw a synthesis from data.
Then you should use ...
# Conclusions: what is best for ...

<table>
<thead>
<tr>
<th>IT (low) requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Keep data on-premises</strong></td>
</tr>
<tr>
<td><strong>Data sources and connections availability</strong></td>
</tr>
<tr>
<td><strong>Data volumes &gt; 100.000 records</strong></td>
</tr>
<tr>
<td><strong>Security, authentication and profiling</strong></td>
</tr>
<tr>
<td><strong>Querying transforming and formatting data</strong></td>
</tr>
<tr>
<td><strong>Retrieving data from multiple sources even on the web</strong></td>
</tr>
<tr>
<td><strong>Report authoring easiness and quickness</strong></td>
</tr>
<tr>
<td><strong>Delivery model and mobile fruiction</strong></td>
</tr>
<tr>
<td><strong>Off line access</strong></td>
</tr>
</tbody>
</table>
### Conclusions: what is the best for ...

<table>
<thead>
<tr>
<th>Feature</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigability and drill-down</td>
<td><img src="image1" alt="SQL Server" /></td>
</tr>
<tr>
<td>KPI repository</td>
<td><img src="image2" alt="DataZen" /></td>
</tr>
<tr>
<td>Self service analytics and data discovery</td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td>Mapping</td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td>Customization and branding</td>
<td><img src="image5" alt="Diagram" /></td>
</tr>
<tr>
<td>Collaborative features; groups, sharing ...</td>
<td><img src="image6" alt="Diagram" /></td>
</tr>
<tr>
<td>Subscriptions</td>
<td><img src="image7" alt="Diagram" /></td>
</tr>
<tr>
<td>Cost</td>
<td><img src="image8" alt="Diagram" /></td>
</tr>
</tbody>
</table>
Resources

Q&A

Questions?
THANKS!

http://speakerscore.com/SqlSatParma2015
http://speakerscore.com/BITool

#sqlsatParma
#sqlsat462