Introduction to Microsoft PowerPivot
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- App Dev, SharePoint, BI, EPM
- 5 years BI at Nuclear Power Co.
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“PowerPivot is Microsoft Self-Service Business Intelligence”
• Business Intelligence “BI” is all about taking data you already have and transforming it into knowledge you can take informed actions on.

• Every organization has someone doing BI, they just may not realize it.

• “That guy”
• How do you know if your organization is doing well?
• You find a quantitative value that acts as an indicator.
• Example 1 – Sales Manager

<table>
<thead>
<tr>
<th>SalesPerson</th>
<th>Total Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Randal</td>
<td>2,456,000</td>
</tr>
<tr>
<td>Kimberly Tripp</td>
<td>3,985,000</td>
</tr>
<tr>
<td>Andy Leonard</td>
<td>956,000</td>
</tr>
</tbody>
</table>

• Total sales becomes our measure.
• The measure is an aggregation of sales records.
Example 2 – Drilling down by dimensions

<table>
<thead>
<tr>
<th>SalesPerson</th>
<th>2007 Sales</th>
<th>2008 Sales</th>
<th>2009 Sales</th>
<th>Total Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Randal</td>
<td>1,200,000</td>
<td>850,000</td>
<td>406,000</td>
<td>2,456,000</td>
</tr>
<tr>
<td>Kimberly Tripp</td>
<td>1,285,000</td>
<td>1,340,000</td>
<td>1,360,000</td>
<td>3,985,000</td>
</tr>
<tr>
<td>Andy Leonard</td>
<td>0</td>
<td>150,000</td>
<td>806,000</td>
<td>956,000</td>
</tr>
</tbody>
</table>

Sales Person, yearly sales are dimensions

Dimensions are the who, what, where, when

The tool to use 2 or more dimensions to analyze measures is a pivot table

Data changes over time are known as trends
“That guy” has problems

• Two tools for doing BI today
• Excel
  – Pros:
    • Easily available on everyone’s desktop
    • Easy for user to create a solution on their own
  – Cons:
    • Data grows stale quickly, hard to refresh
    • Can only hold a limited volume of data
    • Sheets grow large quickly
    • Difficult to share
“That guy” has problems

- The second tool
- Programmed BI solution with SQL Server Analysis Services
  - Pros:
    - Very robust and fast
    - Easy to share the data
    - Stays fresh
  - Cons:
    - Requires a lot of planning, development
    - Long time from user need to solution delivery
    - Expensive to implement
Our Hero!

- PowerPivot!
- PowerPivot is not one tool but two:

  PowerPivot for Microsoft Excel 2010
  PowerPivot for Microsoft SharePoint 2010
PowerPivot for Microsoft Excel 2010

- An add-on for Excel 2010
- Brings the power of SSAS to Excel
- Data compression allows millions of rows to be stored in a compact disk space
- *Linked tables* allow data to be easily refreshed
- Data can come from wide array of sources
- Provides full functionality of Excel formulas, formatting
- Adds new tools in Data Analysis eXpressions (DAX)
- Gives “that guy” the power to create his own analysis tool
PowerPivot for Microsoft SharePoint 2010

• A new service for SharePoint 2010
• Enables the workbook to be viewed and manipulated in the browser
• Use the PowerPivot workbook as a data source
• Use pieces of the workbook in Dashboards
• Allows for automated updates of the underlying data
• Provides monitoring tools for usage
• Gives “that guy” the ability to share his PowerPivot worksheet easily
Limitations

• PowerPivot for Excel only works with 2010 version. No backward compatibility.

• PowerPivot for SharePoint requires SQL Server 2008 R2 Analysis Services to be installed. Not compatible with SQL Server 2005 or 2008.

• At some point usage may grow too much for PowerPivot to handle. At that point consider a full BI project. Monitoring tools can help with alerting before it becomes an issue.
PowerPivot Infrastructure Overview

- Power User
  - Excel 2010
    - PowerPivot Add-In
    - Data Sources

- Standard User
  - Browser
  - SharePoint
  - SSRS

- SharePoint 2010 Farm
  - WFE
  - App Servers
  - Content dBs
  - NLB
    - Excel Services
    - PowerPivot Service
    - 2008 R2 SSAS Engine
Demo
Resources

• Of course, my blog:
  – [http://arcanecode.com](http://arcanecode.com) or

• The official PowerPivot site:
  – [http://powerpivot.com](http://powerpivot.com)

• Handful of PowerPivot blogs

• New Planning & Deployment White Paper
Children in need

http://www.warchild.org
www.SQLServerMVPDeepDives.com
Thanks!

• Questions?
• All material available at either http://arcanecode.com or http://www.comframe.com/bi
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