Brio 101 Training

Course Presentation
and Reference Material

Day 1 Agenda

- Training Overview
- Data Warehouse and Business Intelligence Basics
- The Brio Environment at Rensselaer
- Brio Portal Demonstration
  - User Exercise: Portal Navigation and Password Change
- Star Schemas
- The Brio Insight Interface
- Basic Query Building
  - Class completes Lab 1
- Query Building Process
- Query Building with Data Functions
  - Class completes Lab 2
- Table Reports
  - Class completes Lab 3
Day 2 Agenda

- Day 1 Review
- Brio Portal
  - Subscribing to Documents
  - Adding Bookmarks
- Brio Meta Topics
- Pivot Reports
  - Class completes Lab 4
  - Class completes Lab 5
- Pivot Analysis
  - Class completes Lab 5a
- Charts
  - Class completes Lab 6
- Next Steps

Data Mart Rollout Training Program

http://www.rpi.edu/datawarehouse/dw-training-schedule.html

<table>
<thead>
<tr>
<th>Training Required</th>
<th>Track 1</th>
<th>Level 1: Data Mart Basics</th>
<th>Level 2: Advanced Brio Documents</th>
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<tbody>
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<td>High</td>
<td>Brio 101</td>
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Typically financial managers who will build ad-hoc queries and reports (i.e., Brio documents) from data mart star schemas and meta topics.

<table>
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<tr>
<th>Training Required</th>
<th>Track 2</th>
<th>Level 1: Portfolio/Dept-Specific Pre-Built Docs</th>
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This track includes users who will work primarily with pre-built Brio documents.

<table>
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<th>Training Required</th>
<th>Track 3</th>
<th>Dashboard &amp; Portal training</th>
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<tr>
<td>Low</td>
<td></td>
<td>One-on-one or small group format</td>
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Designed for Executive users, this track focuses on Dashboards and the Brio Portal.

See the Data Warehouse Training Website for course descriptions and schedules. Additional Courses may be added as needed.
What is a Data Warehouse?

- A read-only, centralized repository of the Institute’s data.
- Organized by subject area (i.e., data marts).
- Based on reporting and analytical needs.
- Populated from transaction systems and refreshed nightly.

Business Intelligence (BI): Knowledge gleaned from a data warehouse, used by organizations to improve processes and increase profitability. BI tools provide functionality that includes managed reporting, querying, data analysis, and data visualization.

Brio Products Overview (Brio Intelligence)

Each user will have separate Portal and database usernames and passwords. The Portal login provides the user with access to published content based on a security profile. The database login is necessary to extract data from the Data Warehouse.
Brio Portal and Brio Insight Overview

- **Brio Portal**: Allows users to access published documents (e.g., BQYs, Brio manuals, training documents) and personalize their content.

- **Brio Insight**: Web-based query, analysis, and reporting tool available via Brio Portal. Brio Insight is a browser plug-in that allows users to extract, analyze, and report on data from the Data Warehouse.
Executive Dashboard Overview

- Accessed via the Portal
- High-level, graphical views of Portfolio-specific data
- Designed primarily for executive use, though available to other users as well
- Currently, there are two dashboards in the Finance Data Mart:
  - Financial Analysis
  - Research and Grants
- Comprised of monthly summary data, refreshed periodically

Published BQYs

There will be several pre-built Brio Insight documents (i.e., BQYs) available on the Portal for Position Control Data Mart users.
Portal Demo and Exercises!

Portal: Password Change Exercise

- Login to the Brio Portal
- Click the Preferences tab, then click Password under the General heading
- Change your password, then click Save
- Exit the Portal by closing Internet Explorer
- Login to the Portal again using your new password
- Click the Browse tab and open the Sales Model Star Schema document in the Brio Training folder
Star Schemas

- In the Data Warehouse, data tables are organized in Star Schemas
- Star Schemas are...
  - Comprised of one Fact table joined to one or more Dimension tables
  - Designed for analysis and efficient performance

A Star Schema is comprised of one Fact table joined to one or more Dimension tables through Key fields

**Key**: A numeric field that identifies rows in fact and dimension tables.

**Dimension Table**: A table that describes the facts (e.g., expenditures by fund, account, etc.).

**Fact Table**: The central table in a Star Schema. It contains numeric performance measurements, i.e., facts. For example, revenue, expenditure, and encumbrance amounts are facts.
Star Schemas - Big Picture

Data mart tables are the building blocks of Star Schemas.

A Data Mart contains data tables from a single business process, e.g., Finance.

A Data Warehouse is a centralized repository where operational data is arranged for query, analysis, and ease-of-use. A Data Warehouse is comprised of one or more Data Marts.

Finance Data Mart Tables

Brio Insight Interface

Process Button

Section Title Bar

Section Pane

Document Sections

Catalog Pane

Tool Bars

Command Lines

Content Pane
Sample Database

- The sample database represents three years of business operations for a retail store that sells books, music, and videos.
Lab 1: Query Building

- Using a Star Schema to Build a Request line
- Setting Limits
  - Using Show Values
  - Entering Custom Values
  - Creating Variable Limits
  - Customizing Limits
  - Using Operators: AND, OR, ( )
  - Placing multiple limits on one item
- Sorting a Query
  - The Sort Line
  - Sort Order
- Processing a Query
- Formatting a Results Section
  - Number formats
  - Fonts
  - Sizing columns
- Saving a Document
  - Save Options
  - Exporting

Brio Insight Query Building Process

Create a query in the Query Section
- Access a Star Schema or Meta Topic
- Build a Request Line
- Sort the Query (optional)
- Limit the Query (depends on your objective)
- Aggregate the Query (with data functions, e.g., Sum, Avg.)
- Add Computed Items (optional)
- Process the Query

Massage the Data in the Results Section
- Optional:
  - Set Local Limits
  - Sort the Results
  - Format the Results
  - Add Computed Items

Pivot Section
- Cross Tab Style

Chart Section
- Bar Chart
- Pie Chart
- Line Chart
- Area Chart
- Ribbon Chart

Table Section
- Tabular Style

Report Section
- Free-form Style

Query: A set of instructions used to pose a question to a database
Lab 2: Query Building with Data Functions

- Using a Star Schema to Build a Request line
- Setting Limits
  - Using Show Values
  - Entering Custom Values
  - Creating Variable Limits
  - Customizing Limits
- Sorting a Query
  - The Sort Line
  - Sort Order
- Aggregating a Query with Data Functions
  - Applying multiple Data Functions (Sum, Avg., Count, Min., Max.)
- Estimating the number of rows returned by a query
- Processing a Query
- Formatting a Results Section
  - Number formats
  - Fonts
  - Sizing columns

Lab 3: Table Reports

- Opening a Saved Document
- Inserting new Tables
- Using the Outliner
- Setting Local Limits
- Calculating Totals and Break Totals
  - Using Sum and Average Data Functions
  - Adding labels to Totals
  - Deleting Break Totals
- Formatting
  - Auto-sizing columns
  - Changing column widths
  - Number formats
  - Suppressing Duplicates
  - Formatting the border and background
- Print Preview
  - Working with Headers and Footers
  - Adjusting Page Margins
Data: Meta Topics

A Meta Topic is a simplified display of a Star Schema.

Fact and Dimension tables are rolled into one table where the fields are separated by category headings. Generally, a Meta Topic will contain a subset of the important items for analysis.

Lab 4: Pivot Reports

- Using a Meta Topic to build a Request Line
- Inserting a new Pivot
- Using the Outliner
- Applying Data Functions
  - % Category
  - % Increase
- Grouping
  - Grouping labels
- Spotlighting exceptional values
- Focusing on data
- Hiding data
- Formatting
  - Renaming labels
  - Justifying text
  - Changing column widths
  - Number formats
  - Repositioning Data Labels
  - Applying text
  - Modifying borders
- Converting a Pivot to a Chart
Lab 5: Pivot Reports and Analysis

- Opening a published BQY Document
- Inserting a new Pivot
- Using the Outliner
- Adding a Cume Column
- Applying Data Functions
- Surface Values and Underlying Values
- Drilling Down
  - Drill Anywhere
  - Using pre-defined drill paths
  - Drill to Detail
- Formatting
  - Renaming labels
  - Resizing columns
  - Number formats
- Duplicating Sections
- Renaming Sections

Lab 6: Charts

- Opening a published BQY Document
- Inserting a new Chart
- Using the Outliner
- Creating a Computed Item
- Creating a Cluster Bar Chart
- Creating a Pie Chart
- Creating a Bar/Line Chart
- Creating a Cume Bar/Line Chart
- Converting a Chart to a Pivot
- Formatting Charts
  - Chart Properties
  - Display chart values and percentages
  - Pie slice positioning
  - Rotating charts
  - Adding color
  - Renaming chart titles
  - Renaming chart sections
  - Hiding Items
- Scaling Charts
- Sorting in Charts
- Focusing on Chart data
Next Steps

- Download the Brio Insight Web Browser Plug-in
  - See Appendix C, Getting Started...
- Recreate all of the training exercises and email them to Keith (cushik@rpi.edu) and Christa (wilarc@rpi.edu)
- Contact your Portfolio Financial Manager about attending data training sessions

Appendix A: Glossary

- Catalog Pane:
  - The Catalog pane contains objects that can be used to build a Table, Pivot, Chart, or Report. Objects can be dragged from the Catalog Pane to Contents Pane, Outliner, Limit or Sort Lines.
- Command Lines:
  - The Request, Sort, and Limit lines are drag-and-drop command lines that offer a visual way to complete operations in the query and reporting process. Command lines can be toggled on or off by clicking on the respective Command Line in the Section Title Bar
Appendix A: Glossary

Command Lines:

- **Request Line:**
  - The Request line appears in the Query section and references the items in your query/data set. Items are added to your query by dragging them from the Star Schema or Meta Topic to the Request line. You may also right-click an item and choose Add Selected Item. The Request Line is expandable and can wrap text to display multiple rows of request columns.

- **Limit Line:**
  - The Limit line provides a method of reducing and narrowing the volume of data returned by a query. Items may be added to the limit in the following manner:
    - Dragging the item from the Star Schema or Meta Topic in the Contents pane up to the Limit line
    - Right clicking on the item from the Data Model in the Contents pane and clicking "Limit"
    - Double clicking on the item in the Star Schema or Meta Topic in the Contents pane.
  - The AND operator retrieves data that meets both conditions. If you want to retrieve data which satisfies either of two conditions, use the OR operator.
  - By default, equations are solved from left to right, with enclosed sub-operations evaluated first. AND is evaluated before OR.

- **Sort Line:**
  - The Sort line tracks sort conditions applied to a data set, and allows you to specify compound and nested sorts.

Appendix A: Glossary

- **Content Pane:**
  - The Content Pane provides a view of the section that is being used. For example, in the Query Section, Star Schemas or Meta Topics are displayed.
Appendix A: Glossary

**Document Sections:**
- Brio Documents, i.e., BQYs consist of multiple sections, each of which governs one step of the query and reporting procedure. Document Sections include:
  - **Query:** Star Schemas and Meta Topics are displayed in the content area. Command Lines are used to create queries.
  - **Results:** Rows and columns of data retrieved from a query are displayed in a table format. Data may be processed further in a Results section.
  - **Table:** New Tables can be created based on data from a Results section, or from another Table section.
  - **Pivot:** A cross-tab report style where data can be repositioned for analysis.
  - **Chart:** A section where bar, line, pie, area, ribbon, and other types of charts can be created.
  - **Report:** Free-form reporting where results from multiple sections may be combined.
  - **EIS:** An Executive Information System that uses graphics and scripting to enable the creation of customized consoles.
  - **OLAP Query:** Queries can be built against multi-dimensional databases and data is returned in a cross-tabular format

**Items:**
- Items are listed in each Topic in the data model and represent columns in the database tables.

**Topics:**
- Topics are a visual representation of tables in the database. Each topic title bar displays the topic’s name. The topic shows a list of items, one for each column in the database table.

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Appendix A: Glossary

**Outliner:**
- Outliners are drag-and-drop templates used in the Pivot, Chart, Results, and Report sections. Each Outliner panel corresponds to a specific layout element of the report.

- Each section uses the Outliner differently, but all share a common attribute: the Outliner allows the user to easily view, plot and manipulate the data in the content.

- The Outliner can be toggled on or off by clicking Outliner in the Section Title Bar.
Appendix A: Glossary

- **Process Button:**
  - Used to retrieve data from the Data Warehouse.
  - Since a document can contain multiple queries, there are three processing selections available from the Process pull-down list.
    - **Process Current:** Processes the current object. In some cases more than one query may be processed, for example, if a report references results sets from multiple queries. *Process Current* is the default selection.
    - **Process All:** Processes all the queries in the document. Queries are processed in the order in which they appear in the section catalog. For example, in a document with three queries, Query1, Query2, and Query3, the queries are executed in that order when "Process All" is pressed.
    - **Process Custom:** Opens the Process Custom dialog box so that you can select which queries to process by checking the checkbox next to each selected query.

- **Section Title Bar:**
  - Shown above the Request Line, displays the active section.

- **Section Pane:**
  - Lists all the sections available in a document.

- **Surface Values:**
  - Totals based on aggregate values displayed in a Pivot report. Note: Surface Values is NOT the default method for calculating totals in Pivots (see Underlying Values). To generate totals based on Surface Values, select Use Surface Values from the Pivot menu in a Pivot section.

- **Toolbars:**
  - Three toolbars provide access to frequently used features. Toolbars can be toggled on or off via the View menu.

- **Underlying Values:**
  - Refers to the default method of calculating totals in a Pivot report; i.e., totals are calculated from values from the Results section. Note: When aggregate values are used in a Pivot report, they may not appear correct because the totals are calculated from the detail values in the Results section. Use Surface Values to display accurate aggregated values.
Appendix B: Keyboard and Mouse Commands

- Selecting Items:
  - Shift-click: Select a contiguous range of items
  - Ctrl-click: Select discontinuous items
  - Alt-Click: Highlight a total row in a Pivot report
- Cancel a Query:
  - Alt-end: press and hold the [Alt] and [End] keys at the same time on your keyboard until the query is cancelled.
- Delete Key:
  - Used to remove items from display. For example, Request Line items can be removed with the Delete key
- Page Up and Page Down:
  - Can be used in the Results and Report Sections to move up or down.
- Speed Menus:
  - Right-click the mouse to issues commands on-the-fly. The speed menu changes according to the section.
- Ctrl-C: Copy
- Ctrl-P: Paste

Appendix C: Help Documents
Brio Portal and Brio Insight Overview

- Getting started with Portal and Insight:
  - The link below brings you to a document that provides detailed instructions for accessing Brio Portal and downloading Brio Insight
Appendix C: Help Documents

Brio Portal Username and Password

- The Data Warehouse team will provide you with a Portal username and password
- Change your Portal password after your initial login:
  - The link below brings you to a document that provides detailed instructions for changing your Portal password:
  - [http://www.rpi.edu/datawarehouse/docs/Changing-Portal-Password.doc](http://www.rpi.edu/datawarehouse/docs/Changing-Portal-Password.doc)

Appendix C: Help Documents

Database Username and Password

- The Data Warehouse team will provide you with a database username and password
- Change your database password after your initial login:
  - The link below brings you to a document that provides detailed instructions for changing your database password:
  - [http://www.rpi.edu/datawarehouse/docs/Changing-Production-Database-Password.doc](http://www.rpi.edu/datawarehouse/docs/Changing-Production-Database-Password.doc)
DW Team: Contact Information

- Data Warehouse team contacts:
  - Keith Cushing (Brio training and development)
    - Phone: 518-276-4038
    - Email: cushik@rpi.edu
    - Training Website:
      - [http://www.rpi.edu/datawarehouse/dw-training-schedule.html](http://www.rpi.edu/datawarehouse/dw-training-schedule.html)
  - Christa Wilary (User security and setup)
    - Phone: 518-276-2117
    - Email: wilarc@rpi.edu

- Other DW Team Contacts:
  - [http://www.rpi.edu/datawarehouse/dw-team.html](http://www.rpi.edu/datawarehouse/dw-team.html)

- User Community
  - Brio-users-l@lists.rpi.edu
  - Help, Support
  - Iacs-dw-sup-l@lists.rpi.edu