CHAPTER 4: BUSINESS ANALYTICS

Objectives

The objectives are:

- Describe Business Analytics
- Explain the terminology associated with Business Analytics
- Describe the data warehouse and the elements of the data warehouse
- Demonstrate the process of setting up a Business Analytics database and cube
- Explain the process of setting up and scheduling the Configurator
- Describe the setup of virtual cubes and the mapping of existing dimensions to a cube

Introduction

Business Analytics (BA) is a decision support and analysis tool that provides users with a range of visibility—both detailed to aggregated—into different aspects of their business. It allows users to quickly get to the information they are looking for at the desired level of detail.

BA was designed to make advanced features and analytical capabilities available to end-users without the need for long implementation cycles and lengthy training in complex software. It capitalizes on an implementer's knowledge of Microsoft Dynamics® NAV, and in its basic version, the user's experience with Microsoft® Office Excel® 2007. Business Analytics Advanced provides an environment that includes predefined "smart calculations" and the ability to create advanced calculations and complex charts. Because the process for setting up BA Advanced is involved, and this course is designed to give information workers ready access to available analysis and reporting capabilities, BA Advanced will not be covered.

Introduced herein are concepts related to any data mining software, including Microsoft® SQL Server® Analysis Services. These concepts include online transaction processing (OLTP) and online analytical processing (OLAP), data marts, measures, dimensions, and cubes.
Business Analytics Overview

Business Analytics helps businesses derive and analyze information from raw data. The data mining process involves the following:

- Examining the raw data in several different contexts and from several different points of view
- Determining how these facts relate to other data
- Recognizing how this data reflects overall business goals and objectives

Business Analytics

Business Analytics is data analysis software that aims to fulfill most of the data analysis needs of all decision makers in a company.

While Business Analytics has reporting capabilities, it is mainly an analytical tool that supports dynamic objects to enable or empower decision makers to make the right decisions at the right time.

Another major benefit of Business Analytics is its language capabilities. You can share analysis between employees from different countries without translation. This is handled automatically by the language tier of Business Analytics, ensuring smooth and fast sharing of vital information across the enterprise.

Business Analytics and Microsoft Dynamics NAV

The base Microsoft Dynamics NAV solution Business Analytics tool:

- Collects data from multiple domains within Microsoft Dynamics NAV
- Arranges the data in a hierarchical form
- Lends itself to users for analysis purposes through a client

The client chosen for the base solution is Office Excel 2007; although a variety of other clients are available. Through the client, users can roll up or drill down at the desired level of detail for easy data analysis. For example, users can see the total sales across all products, and then drill down to the sales at the product family level or to a detailed product level.

Because most analysts use Excel 2007 for data analysis purposes, it is used as the client for the base solution. It serves as a good two-dimensional client to represent data, with capability to not only represent data, but to allow users to manipulate it using their own formulas.
Terminology Associated with Business Analytics

A typical Business Analytics solution incorporates three essential components:

- A database
- Online Analytical Processing (OLAP)
- Desktop BA tools - the Microsoft Dynamics NAV Data Configurator

Online Transaction Processing/ERP

Online Transaction Processing (OLTP) constitutes the origin of data: the database. OLTP systems are often also categorized as ERP (Enterprise Resource Planning) systems and are all designed to store data transactions.

ERP solutions such as Microsoft Dynamics NAV collect or gather transactions in database structures. These databases are the foundation of the data mart used by the BA tool. Data is retrieved from the ERP database through OLAP cubes.

Online Analytical Processing

Online Analytical Processing (OLAP) is effectively the processing unit. To make queries happen more quickly, business intelligence applications use a technology called OLAP. OLAP pre-processes the data in an information unit called a cube, making it quicker and simpler to find.

In Microsoft Dynamics NAV, OLAP is performed by Microsoft SQL Server Analysis Services, a capability that is part of SQL Server 2000 or later.

Configuring OLAP Cubes

The Microsoft Dynamics NAV Configurator is a setup utility that creates the definition of cubes and the schema of fact tables and dimension tables. In addition, it creates the necessary data import scripts that are used by Microsoft Data Transformation Services (DTS) to migrate data from the Microsoft Dynamics NAV database to the data warehouse of the BA solution.

The Configurator can be further divided into two separate components:

- One for the definition of a configuration.
- Another for creation of actual configuration based on a pre-defined configuration.

This tool defines the attributes of OLAP cubes by selecting the data elements from Microsoft Dynamics NAV. The configurations are stored in an XML form with certain tags and attributes, drawing upon table relations, option captions, and field data types already existing within Microsoft Dynamics NAV.
The Configurator enables a user to:

- Save multiple configurations.
- Create a new configuration.
- Delete a configuration.
- Edit a configuration.

It is possible to have several definitions existing at the same time, although only one will be active at a time.

**Data Warehouse**

A data warehouse is a database specifically designed for querying large amounts of data. In theory, a data warehouse can embrace all data in the enterprise, depending on how data cubes are set up for data extraction. In a data warehouse, there are two groups of data:

- Measures
- Dimensions

The OLAP engine does not work directly against the Microsoft Dynamics NAV database. BA migrates the necessary data from Microsoft Dynamics NAV to a separate database and arranges it to facilitate large queries.

**Data Marts**

Data marts represent a subset of data from the enterprise from which the analysis is drawn. The data warehouse contains a collection of data marts combined together. Each data mart keeps data for a particular subject area along with the definition of dimension tables.

The dimension tables keep mapping between the members of a group and the group definition, such as mapping that specifies which products belong to a product family. In addition to the dimension tables, data marts also contain a fact table that stores the data to be aggregated at the lowest level of detail, such as employees' salary data in a human resource system.
Measures

Measures are logical data types in a data mart. Measures are the numerical values of principal interest to end users. The following are the rules of measures:

- A measure always represents a numerical value from the underlying table. If a field in a database table has not been defined as numerical, it cannot be used as a measure.
- All measures are numerical values, but not all numerical values are measures. Users decide through definition during the implementation process if a number is interesting enough to use as a measure. Otherwise it can only be used as a dimension.

Dimensions

Dimensions are the way data is categorized in the data mart. They are the attributes or descriptive properties of the measures that provide information about the measures. Dimensions can be based on all physical data types.

Several related dimensions can be collected or unified in a single dimension that displays the same general dimension in several levels containing different levels of detail. These are called hierarchies and are frequently used during the building of dimension structures in Microsoft Analysis Services.

Dimension Tables

Dimension tables contain only dimension values. A numerical value in what is defined as a dimension table cannot be used as a measure in that context.

Fact Tables

Fact tables always contain both measures and dimensions. Fact tables are the core of the star scheme and snowflake scheme structures.
Star Scheme

A star scheme, or star scheme construct, is a fact table with zero or more related dimension tables. A star scheme is recognized by the fact that all dimension tables (if any) are directly linked to the fact table.
Snowflake Scheme

A snowflake scheme, or snowflake construct, is based on a star scheme.

The only difference is that this scheme contains dimension tables that are not directly linked to the fact table.

![Snowflake Scheme Diagram](image)

FIGURE 4.2 SNOWFLAKE SCHEME DIAGRAM

Define a Configuration

In Microsoft Dynamics NAV, the most common task in using BA is to set up a new cube or to modify an existing one. Therefore, the user interface has been designed to make that task as simple as possible.

Setting up a new cube still requires some basic knowledge about the database structure in Microsoft Dynamics NAV; but to a large extent, it is possible to use the existing, built-in information in the database.

Because it is possible to set up cubes and use them in several companies, the first step is to set up cubes and then assign a company.

**NOTE:** In Microsoft Dynamics NAV 2009, Business Analytics setup is performed in the Classic client.

Demonstration: Set Up a New BA Database and Cube

**Scenario:** Kevin, the sales manager at CRONUS International Ltd., has been asked by his manager to create a report showing sales for each customer and other parameters. To meet this requirement, he creates a new Business Analytics cube to use for sales data reporting and analysis.

Kevin first creates a new BA database, a cube, and then defines the Fact Table to use with the cube.
To set up a new BA Database, follow these steps:

1. Open the Microsoft Dynamics NAV 2009 Classic with Microsoft SQL Server client.
2. In the navigation pane, click Administration.
3. Click Application Setup, then General, and then click Business Analytics Setup.
4. In the Name field, click the look-up arrow to open the BA Databases window.
5. On the toolbar, click the New icon to insert a new row.
6. In the Code field, type Sales.
7. In the Name field, type Sales by Customer.
8. Click OK.

To set up a new cube for the new BA Database, follow these steps:

1. Click the line for Cube.
2. Click Functions and then select New.
3. Click Yes to create a new cube; the BA Db. Cube Card window opens.
4. In the Name field, type Sales_Demo.
5. In the Fact Table No. field, enter 379, Detailed Cust. Ledg. Entry.

The Detailed Customer Ledger Entry object information is added.

In setting up your cube, you will use the following options from the Cube button on the BA Db. Cube Card window.

<table>
<thead>
<tr>
<th>Menu Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Tables</td>
<td>Optional. Used when a fact table is related to other tables that can be used in the cube to further define the data. This produces the Snowflake Scheme.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Dimensions categorize data in the data mart. They are the attributes or descriptive properties of the measures and provide information about the measures.</td>
</tr>
<tr>
<td>Measures</td>
<td>Measures are logical data types in a data mart. Measures are the numerical values of principal interest to end users.</td>
</tr>
<tr>
<td>Functions</td>
<td>Optional. Functions are used to build upon existing measures.</td>
</tr>
</tbody>
</table>
Demonstration: Set Up New Cube Related Tables

Scenario: To associate the detailed customer ledger entry with information from the customer ledger entry table and customer table, Kevin defines these related tables in the cube.

To set up related tables for the new cube, follow these steps:

1. Click Cube, and then select Related Tables.

   ![FIGURE 4.3 BA DB. CUBE TABLE RELATIONS WINDOW]

2. Click the Select Fields button; the BA Field Selection window opens.

3. In the BA Field Selection window, select the Selected check boxes for the following fields:
   - No. 2, Cust. Ledger Entry No.
   - No. 9, Customer No.

4. Click OK.
   The tables and fields are now displayed in the BA Db. Cube Table Relations window. The related tables are now set up for the cube.

5. Close the BA Db. Cube Table Relations window.
Demonstration: Set Up New Cube Measures

Scenario: Kevin now defines the measures to include in the cube. Because he wants to analyze sales by Amount and Amount in local currency (LCY), he chooses these fields from the Detailed Cust. Ledg. Entry table.

To set up measures for the new cube, follow these steps:

1. Click Cube and select Measures.

   ![Figure 4.4 BA DB. CUBE MEASURES WINDOW](image)

   FIGURE 4.4 BA DB. CUBE MEASURES WINDOW

   2. Click the Select Fields button; the BA Field Selection window opens.
   This window lists all of the amount fields in all of the tables in the cube. In this case, the tables are the Detailed Cust. Ledg. Entry table and the Customer and Customer Ledger Entry tables from the Related Table setup.

   3. Select the Selected check boxes for the following fields:
      - No. 7, Amount
      - No. 8, Amount (LCY)

   4. Click OK; the tables and fields are displayed in the BA Db. Cube Measures window.
   The Measures are now set up for the cube. Note that the Name field can be modified as needed.


Demonstration: Set Up New Cube Dimensions

Scenario: From the Customer Ledger Entry table, Kevin now selects the following field dimensions to include in the cube:

- Customer No.
- Posting Date
• Document Type
• Currency Code
• Sell-to Customer No.

By adding these fields, Kevin is able to analyze sales for each selected dimension. For example, with these settings, he can view sales by posting date.

To set up dimensions for the new cube, follow these steps:

1. Click **Cube** and then select **Dimensions**.

2. Click **Functions**, and then click **Select Fields**; the **BA Field Selection** window opens, with fields from the three related tables.

   If fields are selected that have a table relation or are of type Option (like the Document Type), Microsoft Dynamics NAV checks whether an appropriate dimension already exists, and if not, it creates one.

   If the field type is Option, Microsoft Dynamics NAV also creates a Numbered List (Enumeration) for it that will form the basis for that dimension.

3. Scroll up to the Customer Ledger Entry tables and select the **Selected** check boxes for the following fields:

   o **No. 3**, Customer No.
   o **No. 4**, Posting Date
   o **No. 5**, Document Type
   o **No. 11**, Currency Code
   o **No. 21**, Sell-to Customer No.

4. Click **OK**.

   The tables and fields now appear in the **BA Db. Cube Dimensions** window.
Demonstration: Assign a Dimension to the New Cube

**Scenario:** Kevin also wants to look at sales by region, so he selects the Microsoft Dynamics NAV Area dimension.

To assign a dimension to the cube Dimension, follow these steps:

1. In the **BA Db. Cube Dimensions** window, click **Functions** and then click **Select Dimensions**; the **Dimension Selection** window appears.
2. Select the **Area** dimension check box.
3. Click **OK**.
   The Area dimension has been added to the **BA Db. Cube Dimensions** window. Dimensions are now set up for the cube.

Demonstration: Set Up New Cube Functions

**Scenario:** To allow users to review calculated sales amounts for specific dates or date ranges, Kevin adds a Posting Date time dimension to the cube.

To set up functions for the new cube, follow these steps:

1. Click **Cube** and then click **Functions**.

   ![BA DB. CUBE FUNCTIONS WINDOW](image)

   **FIGURE 4.6 BA DB. CUBE FUNCTIONS WINDOW**

2. In the **Measure Line No.** field, click the look-up arrow and select the **Amount (LCY)** line.
3. Click **OK**.
4. In the **Time Dimension Line No.** field, click the look-up arrow and select the **Posting Date** line.
5. Click **OK**.
The **BA Db. Cube Functions** window is populated with the Functions selections. The functions are now set up for the cube.

6. Close the **BA Db. Cube Functions** window.

7. Close the **BA Db. Cube Card** window.

**Demonstration: Review the New Cube**

**Scenario:** Once Kevin completes the cube setup process, he reviews it to confirm that the table relations, measures, functions, and dimensions are correct.

To review the new cube setup, follow these steps:

1. In the **BA Db. Overview** window, expand the **Cube** line.
2. Expand the **Sales_Demo ("Detailed Cust. Ledg. Entry")** line.
3. Table relations, Measures, Functions, and Dimensions are displayed. Expand each to review the setup.

![FIGURE 4.7 BA DB. OVERVIEW WINDOW, EXPANDED NODES](image)

**Demonstration: Update the XML**

**Scenario:** Now that the setup is complete, Kevin updates the XML. Whenever changes are made to the cube definitions, the Update XML process must be run.
To update the XML, follow these steps:

1. In the **BA Db. Overview** window, click the look-up arrow in the **Name** field.
2. Ensure the Sales by Customer line is selected.
3. Click **Functions** and then select **Update XML**.
4. Close the open windows.

### Set Up and Schedule the Configurator

Before using the Business Analytics Configurator to configure a BA database in SQL Analysis Services, you must set up a BA database and define the data cubes to export.

Once you have defined a configuration in the configurator interface, you can run the Business Analytics Configurator to create cubes. The configuration utility invokes the configuration engine, which performs several activities. It creates the schema for the staging database, the data mart, and the OLAP cubes. Additionally, it configures packages for transfer of measure and dimension data to the datamart.

The Configurator can be run manually or scheduled to run automatically.

**NOTE**: The Configurator.exe file is downloaded from PartnerSource; you can find it by searching for "BAConfigurator" and then download the BAConfigurator_MSSQL2005.exe file. Load the file in the image and then extract it into a BA folder in the Training Documents folder. You may need to extract the file again after it has been extracted to the BA folder.

### Procedure: Set Up the Configurator

To set up the Configurator on a BA database, follow these steps:

1. On the **Application Setup** menu, click **General** and then click **Business Analytics Setup**.
2. In the **Name** field, click the look-up arrow.
3. In the **Path to Configurator** field, click the look-up arrow and browse to the Configurator.exe file. This file triggers the Configurator.
4. Click **Open**.
5. Click **BA Database** and then select **Companies**; the **BA Db. Companies** window opens.

This window displays all companies that exist in this database. The current company has been selected as default, but any of them can be selected.
6. Close the **BA Db. Companies** window.
7. Repeat steps 3-6 for all BA databases that need to be set up. However, only one database can be active at a time. To indicate the database you intend to use, select the **Active** check box for that database.

**Procedure: Schedule the Configurator to Run Automatically**

The Configurator engine can be set up to run automatically at the same time every day.

To complete this setup, follow these steps:

1. In the **BA Databases** window, click the database with the Configurator to schedule.
2. Click **BA Database** and then click **Schedules**.

   In the **BA Db. Schedules** window, the first line contains a default time that can be changed. Additional lines can also be added to have the engine run automatically more than once a day.

   **NOTE**: For security reasons, the Configurator must be run on the same server that hosts the OLAP database.

**Procedure: Run the Configurator Manually**

In addition to running automatically on a schedule, the Configurator can be started manually at any time.

To run the Configurator at an unscheduled time, follow these steps:

1. Open the **BA Databases** window.
2. Click **Functions** and then click **Start Configurator**.
3. If necessary, click **Yes** in the information dialog box; the **BA Configurator** wizard window opens.
4. Follow the prompts until the process is complete.
Lab 4.1 - Create a New BA Database and Cube

The purpose of this lab is to reinforce your understanding of the process required to create a new BA database and cube.

Scenario

A new Sales cube showing sales for each country/region and customer must be created based on the Detailed Customer Ledger Entry table. Create a new "Sales_Lab" database with the name "Sales by Country/Region and Customer", and then set up the new Sales Lab cube based on the following criteria:

<table>
<thead>
<tr>
<th>Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fact Table</td>
<td>379</td>
</tr>
<tr>
<td>Related Table</td>
<td>9 (Customer No.)</td>
</tr>
<tr>
<td>Dimensions-Customer</td>
<td>35 (Country Code)</td>
</tr>
<tr>
<td>Dimensions-Detailed Cust. Ledg. Entry</td>
<td>3 (Entry Type)</td>
</tr>
<tr>
<td></td>
<td>4 (Posting Date)</td>
</tr>
<tr>
<td></td>
<td>5 (Document Type)</td>
</tr>
<tr>
<td></td>
<td>9 (Customer No.)</td>
</tr>
<tr>
<td></td>
<td>10 (Currency Code)</td>
</tr>
<tr>
<td></td>
<td>12 (Source Code)</td>
</tr>
<tr>
<td>Measures-Detailed Cust. Ledg. Entry</td>
<td>7 (Amount)</td>
</tr>
<tr>
<td></td>
<td>8 (Amount (LCY))</td>
</tr>
<tr>
<td></td>
<td>16 (Debit Amount)</td>
</tr>
<tr>
<td></td>
<td>17 (Credit Amount)</td>
</tr>
<tr>
<td></td>
<td>18 (Debit Amount (LCY))</td>
</tr>
<tr>
<td></td>
<td>19 (Credit Amount (LCY))</td>
</tr>
</tbody>
</table>

After setting up the cube, open the Country/Region dimension and add the name to the Field Numbers. The final steps are to activate the database and update XML.
Challenge Yourself!

1. Create a new cube as specified in the scenario.
2. Update the XML.

Need a Little Help?

1. Open the BA Db. Overview window.
2. Open the BA Databases window.
3. Create and open the new sales database.
4. Create the new cube.
5. Add the related tables.
6. Add the dimensions.
7. Add the measures.
8. On the BA Db. Overview window, open the Dimensions and add the Name to the Country/Region dimension.
9. Activate the new BA database and update the XML.

Step by Step

1. Open the Microsoft Dynamics NAV 2009 Classic with Microsoft SQL Server client.
2. In the navigation pane, click Administration.
3. Click Application Setup, click General, and then click Business Analytics Setup.
4. In the Name field, click the look-up arrow.
5. Press F3 to insert a new row.
6. In the Code field, type Sales_Lab.
7. In the Name field, type Sales by Country/Region and Customer.
8. With the Sales database selected, click BA Database and then click Overview.
9. Click the Cube line.
10. Click Functions and then click New.
11. Click Yes to create a new cube.
12. In the Name field, type Sales_Lab.
13. In the Fact Table ID field, type 379.
14. Press TAB or ENTER.
15. In the BA Db. Cube Card window, click Cube and then click Related Tables.
16. Click Select Fields.
17. Select the Selected check box for No. 9, Customer No.
18. Click OK to close the BA Field Selection window.
19. Close the **BA Db. Cube Table Relations** window.
20. Click **Cube** and then click **Dimensions**.
21. Click **Functions** and then click **Select Fields**.
22. In the **Customer** tables fields, select the **Selected** check box for **No. 35**, Country/Region Code.
23. In the **Detailed Cust. Ledg. Entry** tables, select the **Selected** check boxes for the following fields:
   - **No. 3**, Entry Type
   - **No. 4**, Posting Date
   - **No. 5**, Document Type
   - **No. 9**, Customer No.
   - **No. 10**, Currency Code
   - **No. 12**, Source Code
24. Click **OK** to close the **BA Field Selection** window.
26. Click **Cube** and then click **Measures**.
27. Click **Select Fields**.
28. Select the **Selected** check boxes for the following fields:
   - **No. 7**, Amount
   - **No. 8**, Amount (LCY)
   - **No. 16**, Debit Amount
   - **No. 17**, Credit Amount
   - **No. 18**, Debit Amount (LCY)
   - **No. 19**, Credit Amount (LCY)
   - **No. 39**, Remaining Pmt. Dsc. Possible
29. Click **OK** to close the **BA Field Selection** window.
31. In the **BA Db. Overview** window, expand the **Dimension** line.
32. Click the **Country/Region** line and then click **Card**.
33. In the **Field Numbers** field, click the look-up arrow.
34. Select the **Selected** check box for **No. 2**, Name.
35. Click **OK** to close the **BA Field Selection** window.
36. Close the **BA Db. Dimension Card** window.
37. In the **BA Db. Overview** window, click the look-up arrow in the **Name** field to open the **BA Databases** window.
38. For the **SALES_LAB** database, select the **Active** check box.
39. Click **Functions** and then click **Update XML**.
40. If necessary, clear the **Active** check box on other lines.
41. Close the **BA Database** and **BA Db. Overview** windows.
Additional Business Analytics Tasks

Business Analytics provides some additional tasks that enable you to manage your analysis, including:

- Creating virtual cubes out of existing cubes. These can be used for further calculations and comparisons.
- Mapping existing dimensions to a new cube. This enables you to use existing dimensions when they already describe the data you need.

Procedure: Set Up a Virtual Cube

If several cubes have been specified in a configuration, for example a sales and a budget cube, a virtual cube can also be created that combines these two cubes for comparison purposes. Or, to create a data cube that includes unrelated tables, set up separate cubes for the tables, and then the cubes can be combined into a virtual cube.

Before creating virtual cubes, you must define the cubes that are to be included in the virtual cube. You must combine at least two cubes, but can include an unlimited number of cubes in a virtual cube.

Setting up a virtual cube is similar to setting up a regular cube, except it is not necessary to stipulate values for the Table Relations, Dimensions, Measures, and Functions because they have already been identified.

To set up a virtual cube, follow these steps:

1. On the Application Setup menu, click General and then click Business Analytics Setup.
2. Ensure that the appropriate BA database is selected.
3. Click the **Virtual Cube** line, click **Functions**, and then click **New**.
4. Click **Yes** to create a new virtual cube.

![Figure 4.8 BA DB. VIRTUAL CUBE CARD](image)

5. In the **Cube Line No.** field, click the look-up arrow.
6. Select a cube from the list, and click **OK**.
7. Repeat steps 5-6 to add another cube to the virtual cube.

**Procedure: Map Existing Dimensions to a Cube**

If you already have defined an appropriate cube dimension, you can add that dimension to a new cube.

The steps to map existing dimensions to a cube are as follows:

1. In the **BA Db. Overview** window, expand the **Cube** list, and then click a cube to add a dimension.
2. Click the **Card** button; the **BA Db. Cube Card** window opens.
3. Click **Cube**, and then click **Dimensions**; the **BA Db. Cube Dimensions** window opens.
4. Click **Functions**, click **Select Dimensions**, and then select the dimension(s) to add to the cube.

New dimensions can also be added to an existing cube.
Summary

The process of creating OLAP cubes has raised a number of terms related to Business Intelligence. While this course has concentrated on using the Microsoft Dynamics NAV analysis software Business Analytics, the concepts described here—OLAP cubes, Data Mart, Measures, Dimensions, and Fact Tables—are inherent to any Business Intelligence analysis using other applications, including SQL Server 2005/2008.

Being able to create cubes enables users to set up a multi-dimensional view of their data, which in turn enables numerous ways to configure data to gain insights that simple two-dimensional analysis cannot provide. BA is one of many applications that can enable this, but has the added benefit of being part of Microsoft Dynamics NAV.

The Advanced version of Business Analytics enables users to make calculations, add charts to the data view, and create reports. Business Analytics Advanced requires setup that is covered in the Business Intelligence for IT Pros in Microsoft Dynamics NAV 2009 course.
Test Your Knowledge

Test your knowledge with the following questions.

1. Business Analytics provides users with a range of visibility, detailed and aggregated, into different aspects of their business. Business Analytics is which of the following?
   - ( ) A dashboard interface
   - ( ) A decision support and analysis tool
   - ( ) A stand-alone application
   - ( ) A tool used to calculate Key Performance Indicators

2. Which of the following are the three essential components of a typical Business Analytics solution?
   - ( ) A database created by an Online Transaction Processing (OLTP) system such as Microsoft Dynamics NAV
   - ( ) An Online Analytical Processing (OLAP) tool such as Microsoft SQL Server Analysis Services
   - ( ) A setup utility to create the definition of cubes and the schema of fact and dimension tables, such as the Microsoft Dynamics NAV Configurator
   - ( ) A tool for importing taxonomies and exporting setups such as the XBRL functionality in Microsoft Dynamics NAV

3. A data warehouse is a database designed for querying large amounts of data. Which of the following are the two groups of data contained in a data warehouse?
   - ( ) Variants
   - ( ) Measures
   - ( ) Dimensions
   - ( ) Raw
Quick Interaction: Lessons Learned

Take a moment and write down three key points you have learned from this chapter

1. 

2. 

3. 

Solutions

Test Your Knowledge

1. Business Analytics provides users with a range of visibility, detailed and aggregated, into different aspects of their business. Business Analytics is which of the following?
   - ( ) A dashboard interface
   - (●) A decision support and analysis tool
   - ( ) A stand-alone application
   - ( ) A tool used to calculate Key Performance Indicators

2. Which of the following are the three essential components of a typical Business Analytics solution?
   - (√) A database created by an Online Transaction Processing (OLTP) system such as Microsoft Dynamics NAV
   - (√) An Online Analytical Processing (OLAP) tool such as Microsoft SQL Server Analysis Services
   - (√) A setup utility to create the definition of cubes and the schema of fact and dimension tables, such as the Microsoft Dynamics NAV Configurator
   - ( ) A tool for importing taxonomies and exporting setups such as the XBRL functionality in Microsoft Dynamics NAV

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   - ( ) Variants
   - (√) Measures
   - (√) Dimensions
   - ( ) Raw