



Overview of Solver's BI360 Suite

Reporting - Planning – Dashboards – Collaboration – Data Warehouse

A Solver White Paper

Jan 2015
solverusa.com
Copyright © 2015



Table of Contents

| | |
|---|----|
| Introduction | 3 |
| Architecture Overview | 3 |
| BI360 – Reporting Module | 4 |
| User Interface Overview | 5 |
| Reporting Components | 6 |
| Excel Ribbon | 6 |
| Excel Task Pane..... | 7 |
| Composer for Ad-Hoc Reporting..... | 9 |
| Reporting with the BI360 Web Portal and Mobile Apps..... | 10 |
| Practical Usage Examples | 11 |
| Typical Implementation Process | 13 |
| BI360 – Planning Module | 14 |
| User Interface Overview | 15 |
| Planning Components | 15 |
| Data Settings | 15 |
| Interface Settings | 16 |
| Data Entry Window | 17 |
| Budgeting and Forecasting with the BI360 Web Portal | 18 |
| Practical Usage Examples | 19 |
| Typical Implementation Process | 21 |
| BI360 – Dashboard Module | 22 |
| User Interface Overview | 23 |
| Collaboration Features in the BI360 Web Portal | 24 |
| BI360 – Data Warehouse | 26 |
| Data Warehouse Interface (Admin Console) Overview | 26 |
| Data Warehouse Manager Components | 26 |
| Modules..... | 26 |
| Dimensions | 27 |

| | |
|--------------------------------------|----|
| Currency | 28 |
| Data Explorer | 29 |
| Processes | 30 |
| Practical Usage Examples | 31 |
| Typical Implementation Process | 32 |
| Module – Dimension Mapping..... | 33 |
| BI360 System Requirements..... | 34 |

Introduction

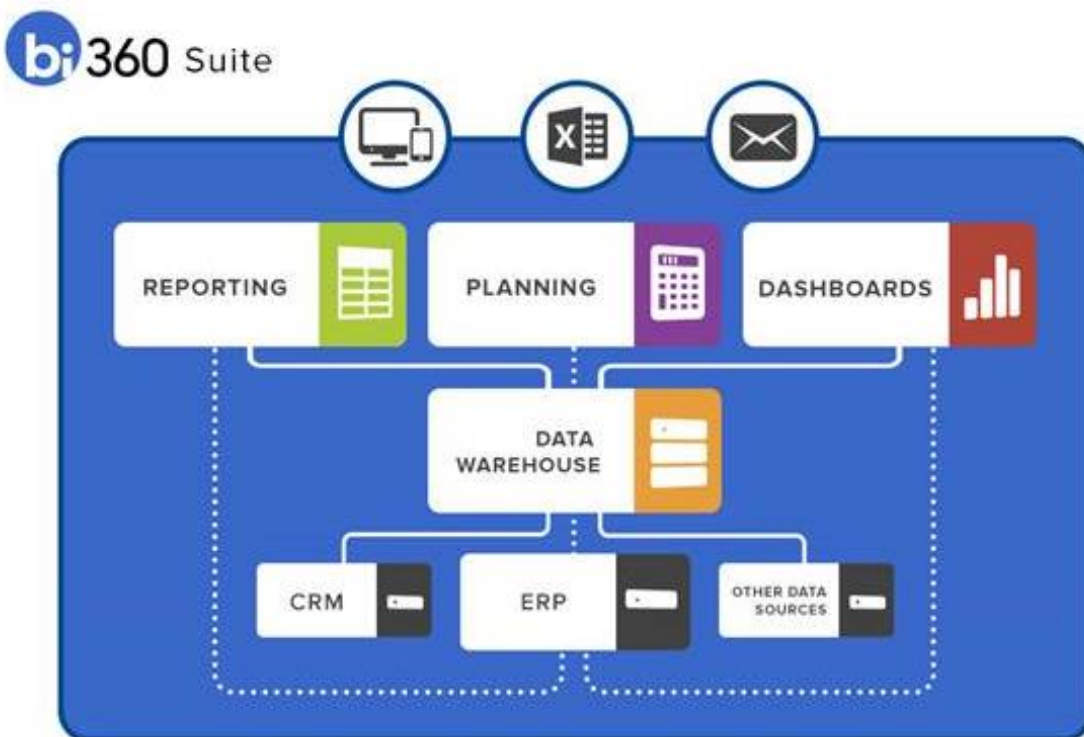
BI360 is the first full Business Intelligence (BI) suite powered by Microsoft Excel (Budgeting and Reporting) and Microsoft SQL Server (Data Warehouse) with a modern Web Portal and mobile apps. Built for quick, low risk implementations and to be managed by business users, BI360 is designed to completely satisfy the business performance management needs of departments, divisions as well as corporate headquarters.

The features that differentiate BI360 the most from other BI applications are:

1. Third generation Excel add-ins for simple or complex reporting and budgeting processes.
2. Pre-Configured and extensible, “smart” data warehouse.
3. Modern web and mobile end-user front-ends for easy access to information and powerful collaboration.

Architecture Overview

Below you can see a simplified architecture with all the BI360 modules. The *Reporting*, *Planning* and *Dashboard* modules can both run live on a number of different ERP systems as well as off the BI360 *Data Warehouse*.



The innovative and user-friendly BI360 *Data Warehouse* allows an organization to radically improve their business intelligence capabilities by consolidating any number of internal or external data sources into providing a single, central SQL Server data warehouse repository.

Reporting



BI360 – Reporting Module

As a modern, business user friendly reporting tool, BI360 *Reporting* combines the best of several worlds:

1. Design reports in Excel, where power users can use their spreadsheet knowledge to build all the reports the business needs.
2. Run reports in Excel, Web portal or mobile apps.
3. Receive reports by e-mail.

BI360's Excel-based report writer can connect directly (real-time) to a number of pre-integrated ERP or CRM systems, and to the BI360 *Data Warehouse*. BI360 *Reporting* can be used for financial reporting and consolidations as well as any type of operational reporting.

With all, or a majority of their reports built with BI360 *Reporting*, organizations typically find that they now get 80% of the analysis and reporting done with 20% of the effort it previously required. In other words, some of the key reasons for implementing BI360 are:

1. Excel interface that most business users are comfortable with.
2. Anytime, anywhere access to reports through BI360 *Web Portal* and mobile apps.
3. Collaborative features and alerts (BI360 *Web Portal*) for vastly improved communication and performance discussions.
4. Easy to build reports with drag and drop wizards and pre-built formulas.
5. Reporting live on various ERP GL as well as sub-ledger modules, as well as Microsoft CRM.
6. Reporting on any data source populated into the BI360 *Data Warehouse*.
7. Single report writer for many purposes.
8. Consolidations across companies (requires BI360 *Data Warehouse* if multiple different ERP systems are in use).

9. Currency conversion (requires BI360 *Data Warehouse* for advanced currency conversion).
10. Special needs such as allocations and reconciliations.
11. Eliminate any manual Excel exports/reports as well as proprietary report writers.
12. Ad-hoc reporting (Report Composer module) without the need for formulas, OLAP cubes, and pivot tables.

As seen in the architecture diagram earlier in this document, BI360 *Reporting* is one of four BI360 modules. The other three modules are:

1. BI360 *Data Warehouse* module (optional).
2. BI360 *Planning* module (optional).
3. BI360 *Dashboard* module (optional).

In the architecture diagram you can see how BI360 *Reporting* interacts with the other BI360 modules. In essence, it serves as a report writer and an ad-hoc query tool both for live reporting on various ERP systems, as well as for the BI360 *Data Warehouse Manager*, in which case data can come from any source system, including cloud-based systems.

Here are some scenarios when BI360 *Reporting* is used with the BI360 *Data Warehouse*:

- Reporting across multiple source systems (like multiple ERP systems).
- Advanced currency conversion, allocations and eliminations.
- Performance (want faster reporting without slowing down the source system).
- Design of input templates and reports for Budgeting and Forecasting (either for BI360's Excel- or web-based *Planning* modules or for other budget system populating data into the Data Warehouse).

User Interface Overview

BI360 *Reporting* is a modern Excel add-in that has been designed with the latest Microsoft technologies and follows Microsoft best practices for interface design and usability. The Interface was designed to maintain a similar look and feel to the Microsoft Office products, including the use of a ribbon and an Outlook-style menu bar as the main navigation components.

BI360 *Reporting* also has a back-end tool called the Integration Customization tool used by power users to extend or customize the meta data that enables the live integrations between the Excel front-end and the data source (such as the ERP system). The meta data provides BI360 *Reporting* with major advantages over standard query tools and report writers that connects

directly to a data source and adds important logic. To begin with, it shields Report Designer users from any type of SQL queries and it translates often difficult SQL field and table names into plain English business terms. Maybe even more important, the Integration Customization (and it's more powerful counterpart, *Meta Data Designer*, used by Solver's integration team) allows developers and power users to pre-define important logic such as time/period logic, which then can eliminate the use of technical period formulas when users design reports.

Note: For a number of ERP systems and the BI360 *Data Warehouse* and certain other systems, the meta data is already developed and out-of-the box, while for other systems it takes configuration to be set up. The *Meta Data Designer* can also be made available to partners/customers so that they, on their own, can expand the use of BI360 *Reporting* to also provide live reporting on other in-house databases.

Reporting Components

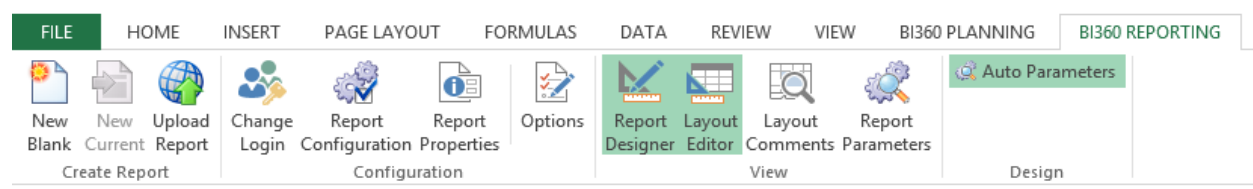
BI360 *Reporting* is an Excel add-in just like BI360's *Planning* module. As you see in the image below, both BI360 *Reporting* and BI360 *Planning* are located right next to each other on the Excel ribbon. In other words, *Reporting* and *Planning* are available side-by-side without the need to leave Excel. With the addition of BI360's *Web Portal*, end users can also run reports and enter budgets through the web with only the need for a web browser.

BI360 *Reporting* consists of two menus: The Excel ribbon and the Excel task pane. The Excel ribbon is usually only used by administrators for setup and maintenance of BI360 *Reporting* reports.

Excel Ribbon

The Excel ribbon has buttons that provide access to the following functions:

- Start the design of new reports (either from scratch or based on an existing Excel report).
- Manage your login (server connection).
- Manage configuration of the current report (as it relates to the data source).
- Manage report properties and setting options.
- Open/close Task pane and Design windows.
- Manage report parameters (prompts).



Excel Task Pane

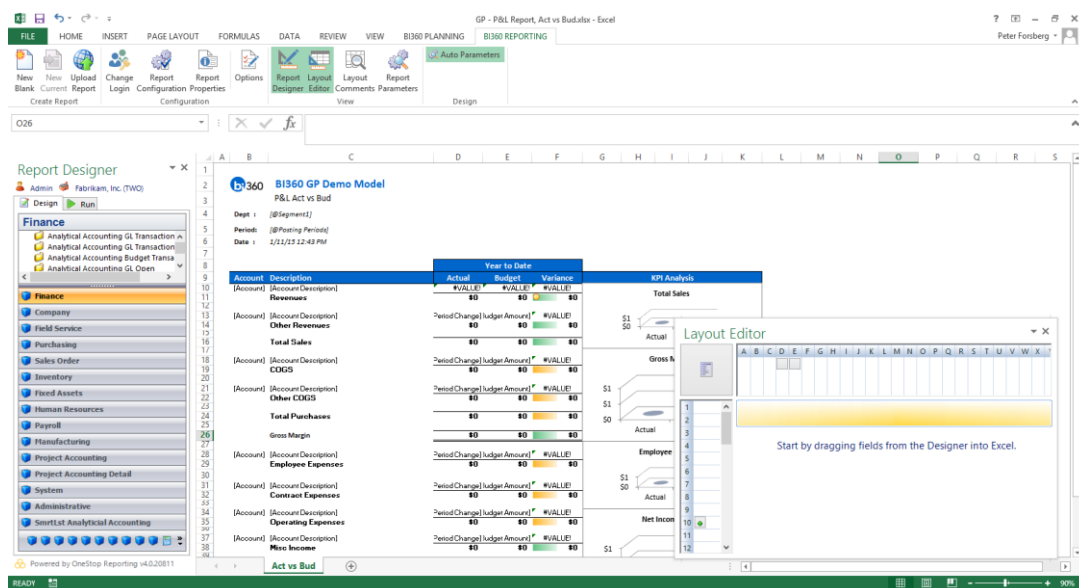
BI360's *Reporting* task pane features the popular Microsoft Outlook-style menu bar. It comes in two main flavors:

1. Report Designer: Gives access to both design and run reports (typically for power users).
2. Report Player: Gives access to run reports (typically for end users).

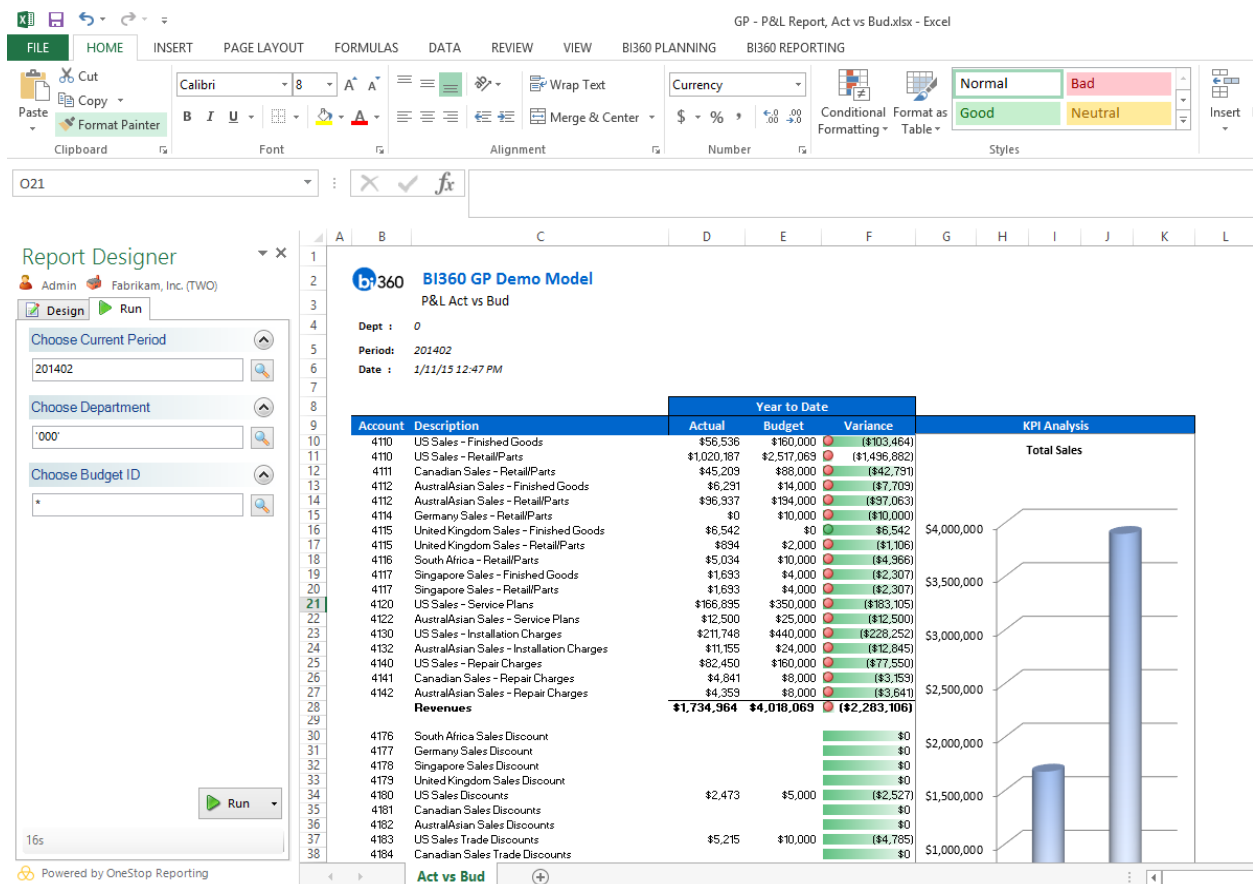
The *Report Designer* menu is shown on the left side of the image below and it offers the following main features:

- Access to fields in different modules in the source database (like GL, Sales, Accounts Payable, etc.).
- KPIs (KPIs can be pre-defined and dragged into any report).
- Functions (pre-defined period functions such as: Current Month, YTD, Rolling 12 Month and many more).
- Expression Trees (pre-defined trees that can be dragged into any report. E.g. Profit & Loss account trees).
- Report Parameters (access to the parameters that will display for the users as filters when they run a report).

When designing a report, the user selects the fields, trees, periods, etc. from the *Report Designer* menu and drags and drops these items into the appropriate location in the Excel sheet. Most reports can be designed without entering a single formula, with the exception of for example a standard Excel formula that deducts one Excel cell from another to calculate the variance between a column with actual figures and a column with budget figures.



The *Report Player* menu is available as a second tab on the left-side task pane for users with the *Report Designer* license and it is also available as a stand-alone for true end-users that only need it to run reports here in Excel (as opposed running them in the BI360 *Web Portal* or the mobile apps). Either way, it looks and works exactly the same. Essentially, it displays the report parameters as prompts on the left side of the screen (see image below) and the user can click on the lookup buttons to choose from dimension list that will appear (e.g. to choose a period or one or more departments). The report parameters (prompts) are created by the person designing the report, and they make a report truly dynamic so it can be run for any month, any department, any vendor, any project, and so on. The resulting data will be filtered before it is pulled from the source database, thereby making reports faster and eliminating the need to push all data to Excel to then filter it.



Once a report has been run (see image above), the user can right-click in any cell to drill down and analyze the underlying detailed transactions. The drill-down function is always available without the need to pre-define any drill down functions when the report is designed.

Composer for Ad-Hoc Reporting

BI360 *Reporting* also offers an optional module called *Composer* (see image below). The *Composer* is designed to solve ad-hoc (on the fly, instant) reporting needs as compared to the BI360 *Reporting* Excel add-in which is focused on creating and running professionally formatted reports. Typical ad-hoc users are accountants or other staff needing to see e.g. how much has been paid to a certain vendor so far this year, or a sales manager that wants to see what they have actually invoiced to a customer and if they have been paid yet.

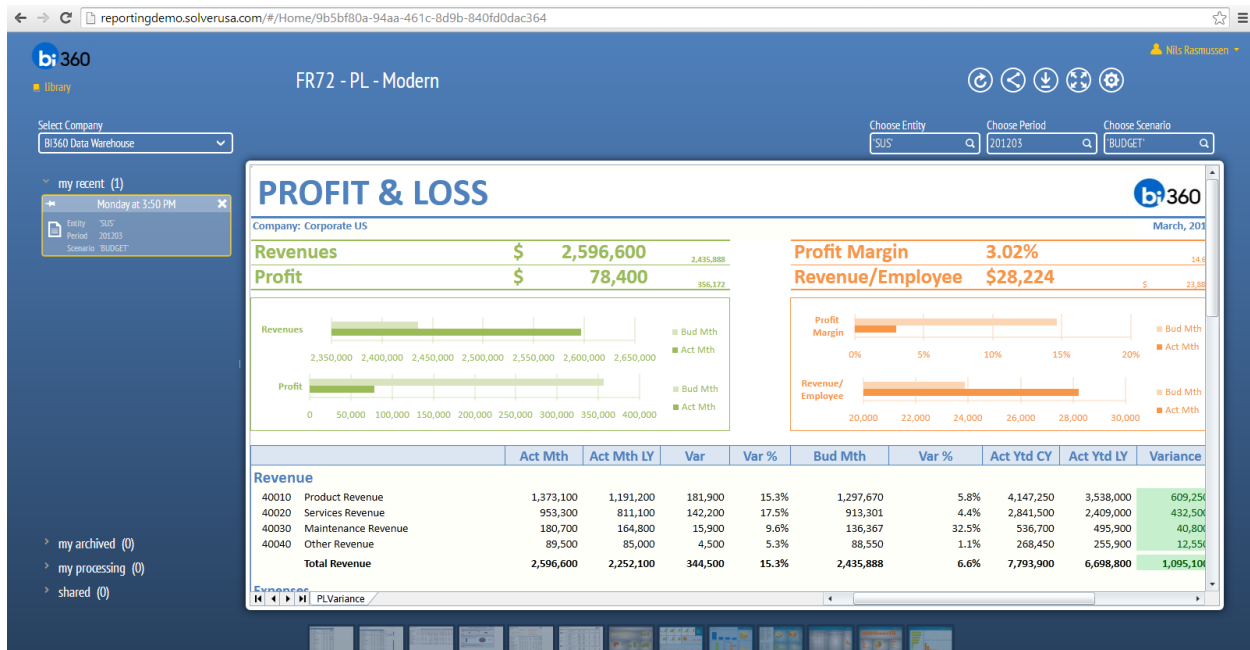
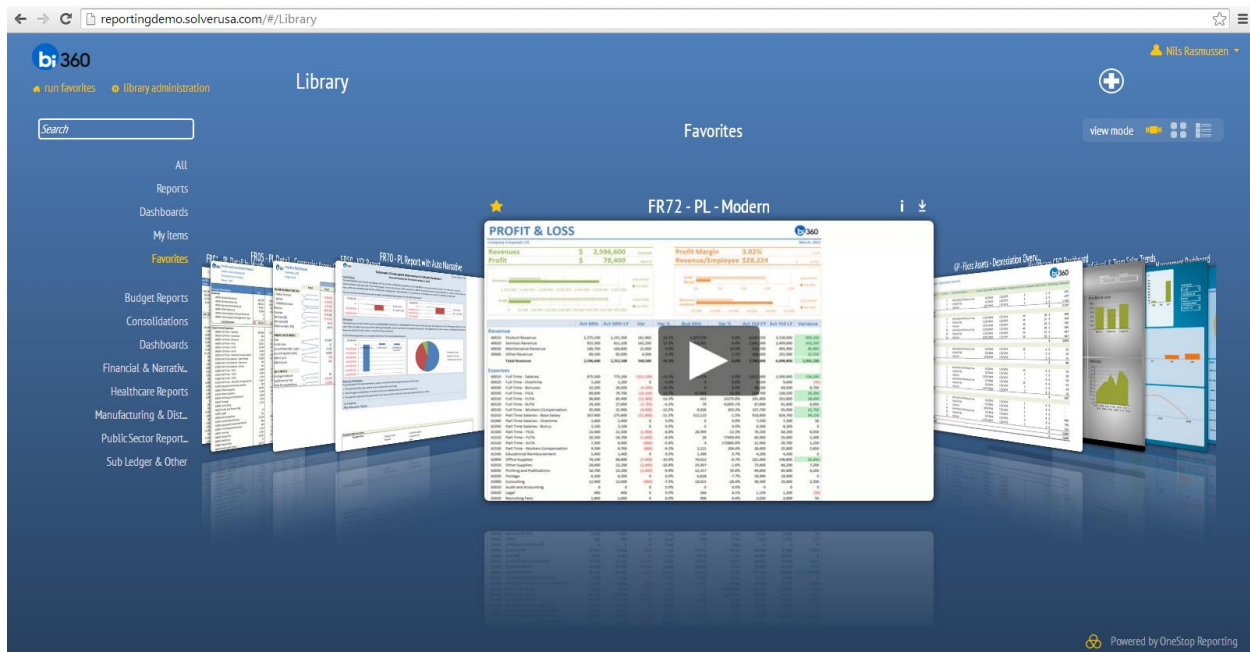
The *Composer* has a very simple interface that can be learned in less than an hour and where everything is accomplished with drag and drop from the familiar Outlook-style menu on the left. This menu is the exact same menu that BI360 *Reporting* utilizes in Excel (see prior paragraphs about the *Report Designer*).

The *Composer* is also connected to the *Report Designer* and a query designed in the *Composer* can, with a few clicks, be turned into a fully formatted Excel report template in the *Report Designer*.

| Account String | Account Description | Period Balance | Period Change |
|---------------------------|--|----------------------------|----------------------------|
| Segment1 | | | |
| 100 | | | |
| 100-5150-00 | Employee Benefits - Administration | 5,859.00 | 5,859.00 |
| 100-5170-00 | Payroll Taxes - Administration | 2,051.86 | 2,051.86 |
| 100-6100-00 | Training - Administration | 1,500.00 | 1,500.00 |
| 100-6110-00 | Company Car - Administration | 297.50 | 297.50 |
| 100-6130-00 | Supplies/Hardware - Administration | 249.50 | 249.50 |
| 100-6140-00 | Supplies/Software - Administration | 229.00 | 229.00 |
| 100-6150-00 | Supplies/Allocated - Administration | 243.75 | 243.75 |
| 100-6160-00 | Dues & Subscriptions - Administration | 50.00 | 50.00 |
| 100-6170-00 | Repairs & Maintenance - Administration | 259.31 | 259.31 |
| 100-6180-00 | Rent Expense - Administration | 2,787.19 | 2,787.19 |
| 100-6190-00 | Utilities Expense - Administration | 315.79 | 315.79 |
| 100-6500-00 | Postage/Freight - Administration | 77.91 | 77.91 |
| 100-6510-00 | Telephone - Administration | 2,253.53 | 2,253.53 |
| 100-6520-00 | Travel - Administration | 2,049.28 | 2,049.28 |
| 100-6530-00 | Meals/Entertainment - Administration | 250.00 | 250.00 |
| 100-9010-00 | Square Footage-Administration | 50,000.00 | 50,000.00 |
| | | 68,473.62 | 68,473.62 |
| 200 | | | |
| 200-5170-00 | Payroll Taxes - Accounting | 8,773.40 | 8,773.40 |
| 200-6100-00 | Training - Accounting | 500.00 | 500.00 |
| 200-6130-00 | Supplies/Hardware - Accounting | 489.95 | 489.95 |
| 200-6140-00 | Supplies/Software - Accounting | 537.00 | 537.00 |
| 200-6150-00 | Supplies/Allocated - Accounting | 609.38 | 609.38 |
| 200-6170-00 | Repairs & Maintenance - Accounting | 864.38 | 864.38 |
| 200-6180-00 | Rent Expense - Accounting | 2,787.19 | 2,787.19 |
| 200-6190-00 | Utilities Expense - Accounting | 315.79 | 315.79 |
| 200-6500-00 | Postage/Freight - Accounting | 129.29 | 129.29 |
| 200-6510-00 | Telephone - Accounting | 2,253.53 | 2,253.53 |
| 200-9010-00 | Square Footage-Accounting | 50,000.00 | 50,000.00 |
| | | 67,259.91 | 67,259.91 |
| 300 | | | |
| 300-5130-00 | Commissions - Sales | 50,840.61 | 50,840.61 |
| 300-6100-00 | Training - Sales | 1,520.00 | 1,520.00 |
| 300-6140-00 | Supplies/Software - Sales | 792.00 | 792.00 |

Reporting with the BI360 Web Portal and Mobile Apps

For most organizations that need a larger number of users to access reports (and dashboards or budget input), it is beneficial to deploy BI360 *Reporting* with the BI360 *Web Portal*. This provides browser-based access through the internet or your corporate network, with no need for BI360 software installed on the users' computers. The BI360 *Web Portal* also enables you to download the free BI360 mobile apps, providing yet another easy way for users to run reports.



Practical Usage Examples

In most cases, BI360 *Reporting* will be used as a reporting and ad-hoc query tool, either stand alone or as part of the BI360 suite. Either way, there are two main deployment options:

1. Give the reporting tools to a few central power users.
2. Provide the tools to end users so that on their own can get reports and drill-down whenever needed.

Below is a table listing various deployment options:

| Deployment | Advantage | Disadvantage |
|--|---|---|
| Power users run reports centrally and distribute/e-mail to users | <ul style="list-style-type: none">• No license required for end users. | <ul style="list-style-type: none">• End users cannot get reports exactly when they need them.• End users may want to see reports for other filter criteria.• End users cannot drill down. |
| Power users run reports and post to a shared network drive or SharePoint | <ul style="list-style-type: none">• No license required for end users. | <ul style="list-style-type: none">• End users cannot get reports exactly when they need them• End users may want to see reports for other filter criteria• End users cannot drill down |
| Power users create ad-hoc queries and export result to Excel and e-mail/print/save to server | <ul style="list-style-type: none">• No license required for end users | <ul style="list-style-type: none">• End users cannot answer instant questions when they need it and without requesting information from power user. |
| End-users run their own reports (through BI360's Excel, Web or mobile interfaces) | <ul style="list-style-type: none">• End users get reports exactly when they need them• End users can run reports with different filter criteria• End users can drill down | <ul style="list-style-type: none">• License required for end-user. |
| End-users create ad-hoc queries | <ul style="list-style-type: none">• End users can answer instant questions when they need it and without requesting information from power users | <ul style="list-style-type: none">• License required for end-user. |

Here are examples of the numerous potential uses of BI360's *Reporting* module:

| Purpose | Usage Examples |
|------------------------|--|
| Financial reporting | <ul style="list-style-type: none"> Financial statements in various formats, like Profit & Loss, Balance Sheet and Cash Flow reports. |
| Operational reporting | <ul style="list-style-type: none"> Sales reports Vendor reports Project reports HR/Payroll reports |
| Dashboard reports | <ul style="list-style-type: none"> Create Excel-based dashboards that combine metrics/KPIs with charts and indicators (Excel 2007 and later supports traffic lights, arrows, etc.). If data is coming from multiple sources, deploy BI360's <i>Data Warehouse</i> module, import data there and deploy <i>Dashboard</i> reports on top of the <i>Data Warehouse</i>. |
| Scorecard reports | <ul style="list-style-type: none"> Create Excel-based scorecards with KPIs (Excel 2007 and later supports traffic lights, arrows, etc.). Management's scorecard comments can be stored with BI360's Planning module. If data is coming from multiple sources, deploy BI360's <i>Data Warehouse</i>, import data there and deploy dashboard reports on top of the <i>Data Warehouse</i>. |
| KPI reports | <ul style="list-style-type: none"> Create Excel-based reports that generate and display KPIs. (Excel 2007/2010 supports traffic lights, arrows, etc.). |
| Allocation reports | <ul style="list-style-type: none"> Create Excel-based reports that calculate allocations. If you want to store the allocations and bring them back to the ERP system, use BI360's <i>Planning</i> module. You can also use <i>BI360 Planning</i> to collect and store allocation drivers. |
| Commentary input | <ul style="list-style-type: none"> Create Excel-based reports (e.g. a P&L) and set up BI360's budget module to collect and save text comments. Create Excel-based reports to show all comments made to certain accounts, for certain variances, etc. |
| Budget template design | <ul style="list-style-type: none"> Create Excel-based input templates for use with BI360's Excel or web-based budget modules. |
| Budget reports | <ul style="list-style-type: none"> Create Excel-based reports to consolidate/view budget. |

| | |
|------------------|--|
| Workflow reports | <ul style="list-style-type: none"> • Create Excel-based reports for instant views of all Approved/Pending/Rejected budgets. |
|------------------|--|

Typical Implementation Process

A typical implementation process of BI360 *Reporting* could look like this (in this example assume that BI360 *Reporting* is being used for typical reporting processes):

1. Train power users.
2. Identify reporting needs.
3. Preparation of the BI360 *Data Warehouse Manager* – Skip this step if BI360 will only be used for live reporting on the ERP database.
 - a. Populate the *Data Warehouse Manager* with data and dimensions from your source systems. Examples of dimensions are: Account, Department, Project, Product, Employee, Asset, etc.
 - b. Enter any other dimensions or data directly in the *Data Warehouse Manager* if they do not already reside in another database from which they can be imported.
4. Design Excel report templates with BI360 *Reporting*.
5. Deploy BI360 *Web Portal* – Skip this step if reports will only be run through the Excel add-in.
6. Set up security (if different users require different access rights).
7. Train end users (will only take minutes as they just need to learn how to run reports and drill down).



BI360 – Planning Module

As an Excel- and web-based data entry tool with a powerful companion report writer (BI360 *Reporting*) and dashboard (BI360 *Dashboard*), *Planning* can be used to automate budgeting and forecasting as well as other business processes that require data entry with storage in a database. In other words, think of BI360 *Planning* as an automated way to save any data into a SQL database. For most people, budgets and forecasts are the first processes that come to mind, but in reality, most organizations have numerous manual data collection processes that could be automated with BI360 *Planning*.

As seen in the architecture diagram earlier in this document, *Planning* is one of four BI360 modules. The other three modules are:

1. BI360 *Data Warehouse* – This is where *Planning* stores all data (with the exception of ERP systems where BI360 provides live write-back)
2. BI360 *Reporting* module – Required.
 - a. Used to design the input templates.
 - b. Used as a report writer to report on all the data that *Planning* stores to the *Data Warehouse* or ERP database.
 - c. Used as a regular report writer.
3. BI360 *Dashboard* module – Optional, this provides a professional dashboard interface for interactive, graphical analysis and drill-down.

In the architecture diagram shown earlier in this document, you see how BI360 *Planning* interacts with the other BI360 modules. As you will learn later, administrators first configure *Planning* and the *Data Warehouse* database (not needed if using live write-back from BI360 to the ERP's budget tables) for the Excel model where the data entry and write-back will take place. The input templates are then provided to the end-users either through Excel or the *BI360 Web Portal* for data entry. After the users have entered and saved their data, managers can start reporting on the entered data. Finally, if desirable, the data can be transferred from the *Data Warehouse Manager* database and back to other source systems such as budget tables in the ERP database.

User Interface Overview

BI360 *Planning* is a modern Excel and web-based solution. The Excel add-in was designed to maintain similar look and feel to the Office products, including the use of a ribbon and Outlook-style menu bar as the main navigation components.

The BI360 *Web Portal* was designed to provide a modern web interface for budgeting, reporting and dashboards, and with added workflow, discussion groups, alerts and other important features that takes the budget process beyond just a data entry concept.

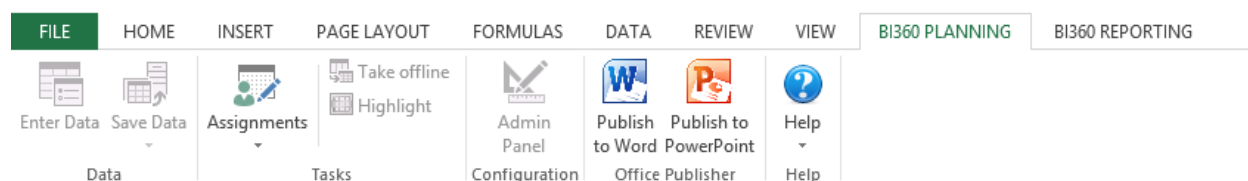
Planning Components

BI360 *Planning* uses an Excel add-in to design input templates just like BI360 *Reporting*. As you see in the image below, both *Planning* and *Reporting* are located right next to each other on the Excel ribbon. In other words, reporting and budgeting are available side-by-side without the need to leave Excel. Of course, end users may come through the BI360 *Web Portal* without ever seeing or using Excel.

BI360 *Planning* consists of two menus in Excel: the Excel ribbon and the Excel task pane. The latter is only used by administrators for setup and maintenance of *Planning*.

Excel Ribbon

- View, Check-in & Check-out Assignments.
- Save data.
- Update model settings from the server (the BI360 *Data Warehouse Manager*).
- Connection information (to the BI360 *Data Warehouse Manager* database).
- Access to administrative functions (task pane).
- Direct link to resources (Including BI360 documentation, videos and samples).



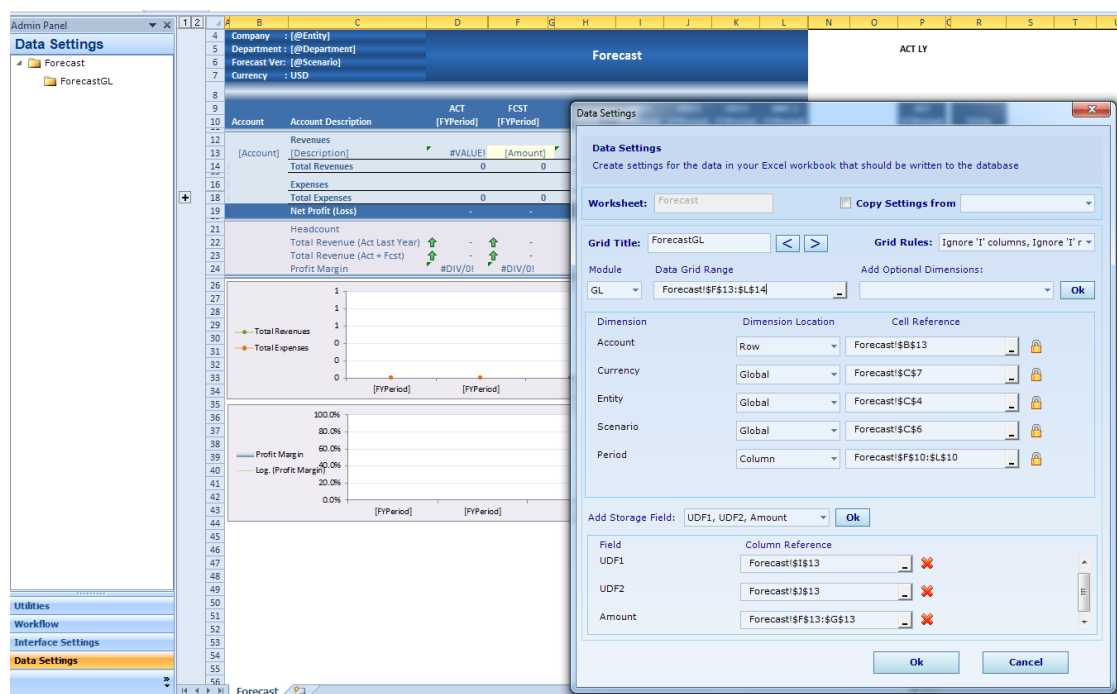
Excel Task Pane

The BI360 *Planning* task pane features the popular Microsoft Outlook-style menu bar. It has three main menu items:

Data Settings

This is where the administrator performs the initial configuration by providing *Planning* with vital information about where data and dimensions are located in the underlying spreadsheet. Depending on how well organized and structured your Excel model is, BI360 *Planning* can be

quickly configured to handle unlimited data input sections in one or multiple worksheets in a workbook. BI360 *Planning* can also automatically adapt to spreadsheets that “grow” (e.g. a new row or column that gets inserted in the Excel model) or “shrink” without the administrator having to update the settings. If there is a significant structural change to the company’s Excel model, then the administrator can make the necessary changes to the *Planning* Data Settings that the end-users will see next time they open the Excel template (if the same Excel template is accessed centrally by all users) or if the Excel model has been distributed to end-users, they simply click the “Update Settings” button on the *Planning* Excel ribbon and it will retrieve the latest settings from the BI360 *Data Warehouse* database. Part of the Data Setting setup is to choose where in the BI360 *Data Warehouse* database the data from Excel should be stored based on the type of data. For example, data (like budgets) related to Accounts is stored to the Finance (General Ledger) Module, detailed revenue data is stored in the Revenue Module, detailed employee/position data is stored to the Payroll Module, and so on.



Interface Settings

The *Planning* Interface Settings (see screenshot below) are directly related to the *Planning* Data Settings. While the Data Settings are focused on what sections of Excel should be saved where in the *Data Warehouse* and with which dimensions, the Interface Settings are focused on what you want the end-users to see if they use the *Planning* data entry screen (shown in the next paragraph).

Settings For InfoManager

Data Grid Selection : ForecastGL

Chart Properties

Data Grid Properties

☐ Hide this component in InfoManager

Worksheet and Cell range containing the column labels you want to display: Forecast!\$P\$10:\$Q\$10

Worksheet and Cell range containing the row labels to display (for first row in grid): Forecast!\$B\$13:\$C\$13

Worksheet and Cell range containing the data to display (for first row in grid): Forecast!\$P\$13:\$Q\$13

Display Label : Actual

Display Decimals 0

Input Grid Properties

☐ Hide this component in InfoManager

Worksheet and Cell range containing the column labels you want to display: Forecast!\$F\$10:\$G\$10

Worksheet and Cell range containing the row labels to display (for first row in grid): Forecast!\$B\$13:\$C\$13

Worksheet and Cell range containing the data to display (for first row in grid): Forecast!\$F\$13:\$G\$13

Display Label : Forecast

Display Decimals 0

Line Item Details Properties

Totals Component Properties

Slider Properties

Slider Range Percentage 50 Minimum Slider Move Percentage 5

Formatting Options

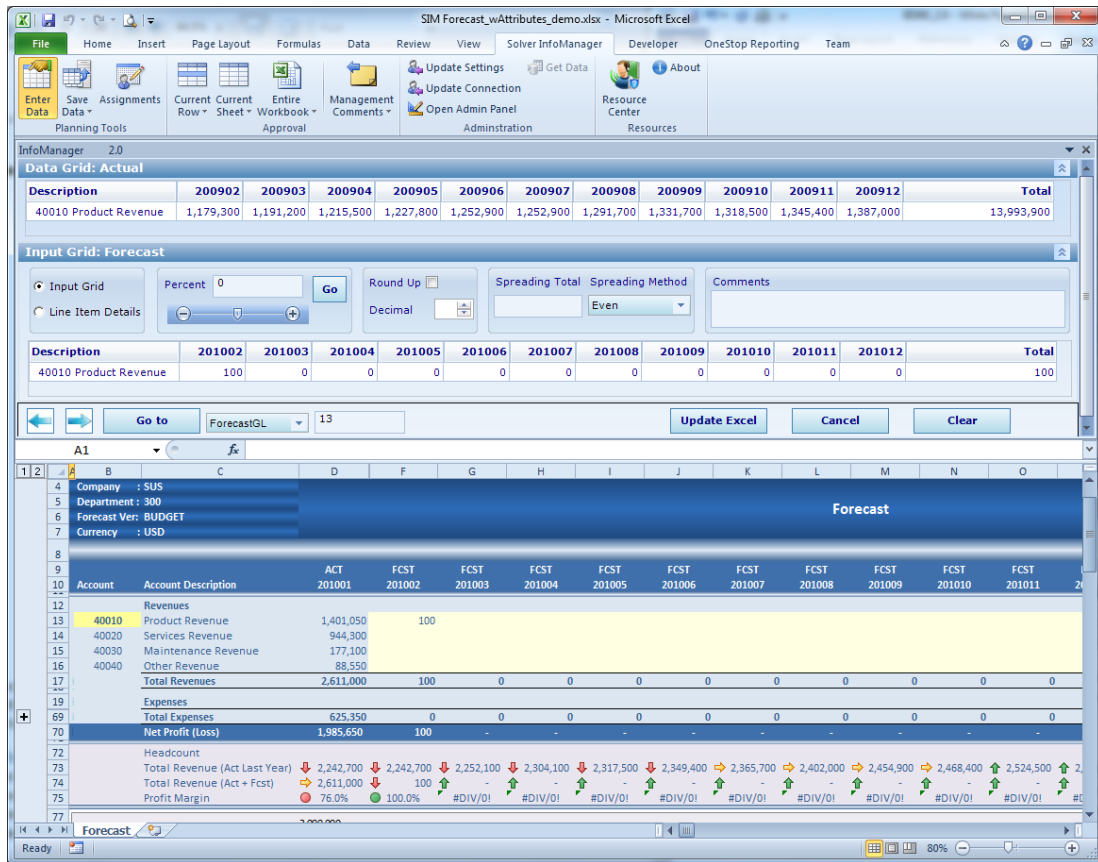
☒ Use 1,000 Separator (,)

Ok Cancel

Data Entry Window

The *Planning* data entry window (see image below) is an optional way of entering data in Excel. In other words, users can type information directly into Excel, or they can open the BI360 *Planning* data entry screen and enter it there. When the data has been entered into Excel, it is automatically saved into the underlying row in Excel and then can be saved to the *Data Warehouse* database. The *Planning* data entry screen is a powerful tool for:

- Automatic spreading of numbers across many cells in Excel. Many spreading rules are available, including rules that can use prior year actuals or seasonal trends as a base.
- Input of text comments at the row or line item level.
- Input of many rows of line item detail below a single row in Excel (e.g. the user can list many business trips that automatically will roll up to a single travel expense row in Excel).
- Automatic charting of the current row in Excel and comparison to e.g. another row with historical data.



In short, BI360 *Planning* can store data (numbers and text) from any Excel spreadsheet. The data is stored to the *Data Warehouse* database and from there, the stored data can be sent back to the ERP system, reported on or even processed into OLAP cubes for advanced analysis. However, for select ERP systems, BI360 *Planning* can also write directly back to the budget tables in the ERP system.

Budgeting and Forecasting with the BI360 Web Portal

For most organizations that needs a larger number of users to enter budgets and forecasts (and to use reports or dashboards), it is beneficial to deploy BI360 *Planning* with the BI360 *Web Portal*. This provides browser-based data entry through the Internet or your corporate network, with no need for BI360 software installed on the users' computers.

Below is a screenshot of a sample budget form in the BI360 *Web Portal*.

REPORTING

Department Budget

Library

Company: CRONUS USA, Inc.
Department: SALES
Budget: 2009

Revenue & Expense Budget

| Account | Description | Actual LY | Budget | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | Jul-10 | Aug-10 |
|---------|-------------------------------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|----------|
| 43000 | Sales of Raw Materials | - | - | | | | | | | | |
| 43100 | Sales, Raw Materials - Dom. | 8,570,831 | (345,600) | (23,499) | (33,783) | (20,254) | (24,783) | (36,330) | (22,649) | (17,119) | (34,467) |
| 43200 | Sales, Raw Materials - EU | 798,948 | (805,000) | (67,083) | (67,083) | (67,083) | (67,083) | (67,083) | (67,083) | (67,083) | (67,083) |
| 43300 | Sales, Raw Materials - Export | 1,356,429 | (1,427,237) | - | (150,844) | (182,626) | (88,357) | (117,250) | (2,173) | (154,603) | (3,004) |
| 43400 | Job Sales Adjmt., Raw Mat. | - | - | | | | | | | | |
| 43500 | Total Sales of Raw Materials | - | - | | | | | | | | |
| 44000 | Sales of Retail | - | - | | | | | | | | |
| 44100 | Sales, Retail - Dom. | 1,446,309 | (1,316,140) | (117,161) | (121,433) | (129,735) | (128,999) | (108,909) | (76,010) | (71,278) | (75,232) |
| 44150 | Sales, OSR | - | - | | | | | | | | |
| 44200 | Sales, Retail - EU | 83,624 | (63,500) | (15,000) | (4,000) | (3,000) | (7,500) | (4,000) | (6,000) | (2,000) | (3,000) |
| 44300 | Sales, Retail - Export | 172,966 | - | | | | | | | | |
| 44399 | Job Sales Applied, Retail | - | - | | | | | | | | |
| 44400 | Job Sales Adjmt., Retail | - | - | | | | | | | | |
| 44500 | Total Sales of Retail | - | - | | | | | | | | |
| 45000 | Consulting Fees - Dom. | 399,378 | - | | | | | | | | |
| 45100 | Fees and Charges Rec. - Dom. | 1,851 | - | | | | | | | | |
| 45200 | Discount Granted | - | - | | | | | | | | |

Sheet1

Practical Usage Examples

In most cases, *Planning* will be used as a budgeting and forecasting tool. Below is a list of the most typical variations of budget models that BI360 *Planning* can handle.

| Configuration | Examples | Typical Distribution |
|---|---|--|
| Multiple Excel workbooks with a single budget sheet | <ul style="list-style-type: none"> Departmental Profit & Loss Departmental Expenses | <ul style="list-style-type: none"> Input done by central staff and department heads through Excel or Web templates. |
| Single Excel workbook with multiple budget sheets with the <u>same</u> layout | <ul style="list-style-type: none"> Different departments on different sheets Different products on different sheets | <ul style="list-style-type: none"> Input done by central staff |
| Multiple similar Excel workbooks with multiple different budget sheets in each workbook | <ul style="list-style-type: none"> Workbook with: <ul style="list-style-type: none"> Summary Profit & Loss or Expense sheet Revenue Detail Employee Detail Capital Expenses | <ul style="list-style-type: none"> Input done by central staff and department heads through Excel or Web templates. |

Here are examples of other uses of Planning as a data collection tool.

| Configuration and Input Type | Usage Examples |
|---|---|
| Modeling | Create a product or service price model and use BI360 <i>Planning</i> to store each scenario to the BI360 <i>Data Warehouse</i> and then use BI360 <i>Reporting</i> to output reports/charts. |
| Break-back analysis | Use one of Solver's special break-back templates (or design your own), to simulate items such as Net Profit and have BI360 auto-generate the related revenues and expenses based on for example historical trends. |
| Allocations | Create the allocations model in Excel (can use the BI360 report module to create automated, parameter-driven allocation calculations), use BI360 <i>Planning</i> to store the allocated numbers to the BI360 <i>Data Warehouse</i> . From there, use the allocations in BI360 reports or transfer the allocated numbers back to the ERP system. |
| Electronic data entry of: <ul style="list-style-type: none"> Statistics Key Performance Indicators (KPIs) Other organizational information | Create input forms for any text or numerical information and use <i>BI360 Planning</i> to store it to the BI360 <i>Data Warehouse</i> . From there create reports with the BI360 <i>Reporting</i> , create Dashboards for analysis, or transfer the collected data to other systems. |
| Commentary input for: <ul style="list-style-type: none"> Monthly actual/budget variance reports Scorecard KPIs Quarterly/Annual reports | Add comment columns to your BI360 financial statements or scorecards (generated dynamically with BI360 <i>Reporting</i>), and use BI360 <i>Planning</i> to save the text to the BI360 <i>Data Warehouse</i> . Use BI360 <i>Reporting</i> to create reports that pulls the text comments back up from the database. |

Typical Implementation Process

A typical implementation process of BI360 *Planning* would look like this:

1. Train power users.
2. Identify budgeting needs.
3. Preparation of the BI360 *Data Warehouse* – Skip this step if live ERP budget write-back is used.
4. Populate the *Data Warehouse* with historical figures and dimensions from your General Ledger (and if needed also from systems like Payroll and Fixed Assets). Examples of dimensions are: Account, Department, Project, Product, Employee, Asset, etc. – Skip this step if live ERP budget write-back is used.
5. Enter any other dimensions or historical data directly in the *Data Warehouse* if they do not already reside in another database from which they can be imported – Skip this step if live ERP budget write-back is used.
6. Preparation of Excel budget templates.
7. Design your budget templates (or use BI360's pre-defined templates) with BI360 *Reporting*. They will now be dynamic and parameter driven based on the dimensions and data you populated to the *Data Warehouse*.
8. *Planning* Setup (as explained earlier in this section) or deployment of the BI360 *Web Portal* for web-based input.
9. Train end users.



BI360 – Dashboard Module

The BI360 suite offers its own dashboard module as well. It is completely web-based, both for dashboard design and for end users.

The main purpose of BI360's *Dashboard* module is to support an organization's performance management initiatives by offering a relatively low cost and easy to implement, professional dashboard environment.

Some of the key reasons for implementing BI360's *Dashboard* module are:

1. Get managers and users focused on trend analysis and key metrics that drive organizational performance and processes.
2. Very user-friendly web-based interface that usually only requires minimal or no training for end-users.
3. Relatively low cost and easy to implement.
4. Business users can quickly learn how to build their own dashboards using the *Dashboard Designer*.

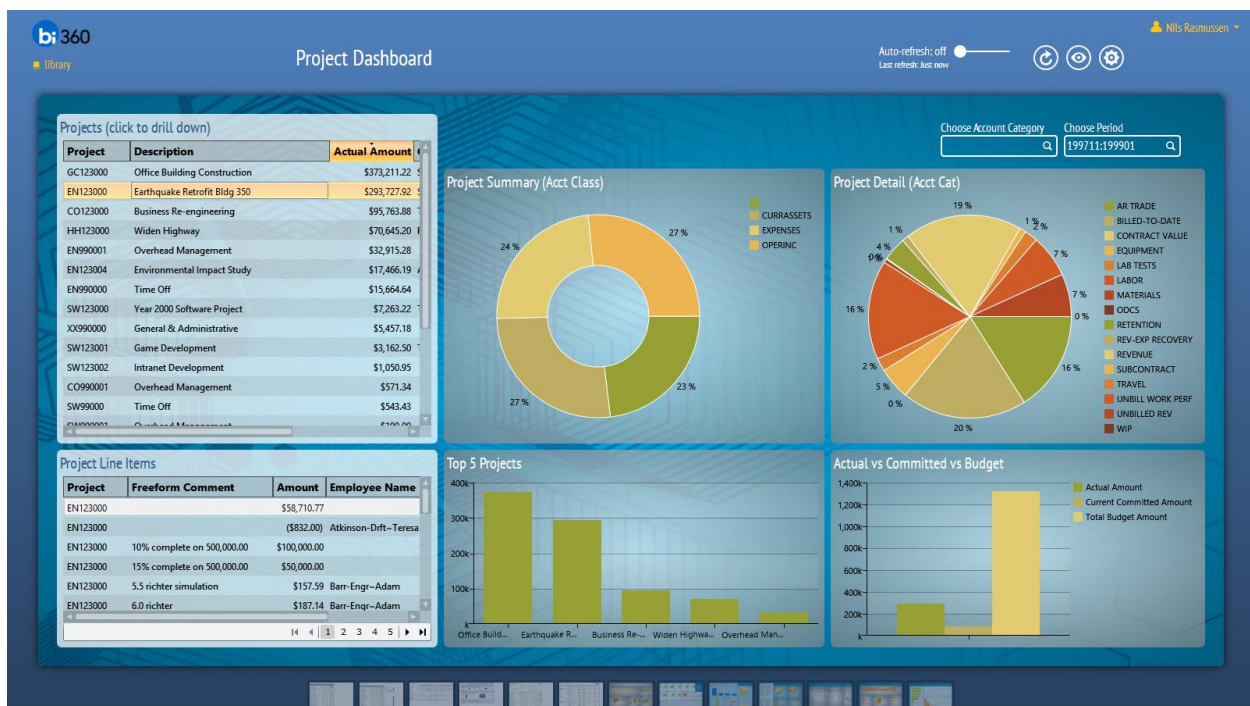
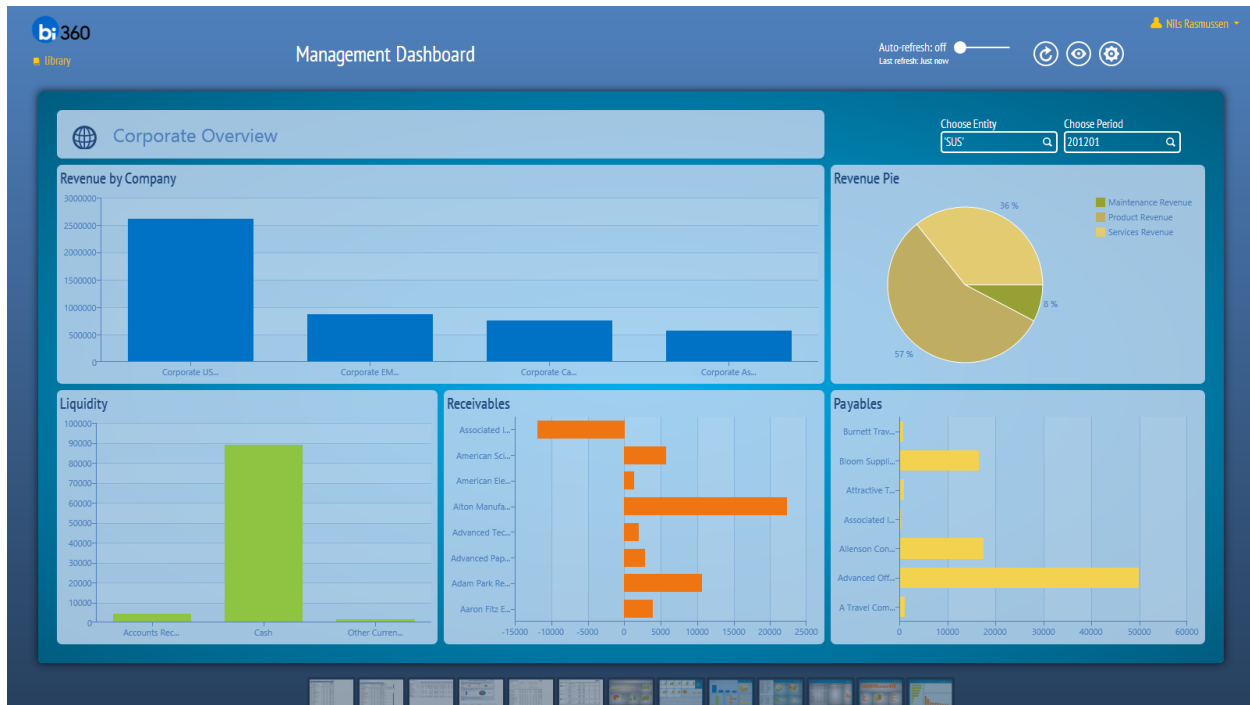
As seen in the architecture diagram earlier in this document, the *Dashboard* module is one of four BI360 modules. The other three modules are:

1. BI360 *Data Warehouse* – Optional, this is for support of reporting across multiple ERP systems, etc.)
2. BI360 *Planning* module - Optional
3. BI360 *Reporting* module – Required

In the architecture diagram earlier in this document, you saw how the BI360 *Dashboard* module interacts with the other BI360 modules. In essence, it serves as a dashboard on top of the BI360 *Data Warehouse* and the original data can come from any source system. The BI360 *Dashboard* also works directly (live) integrated to select, pre-integrated ERP systems.

User Interface Overview

Below is a sample screenshot of a BI360 *Dashboard*. Using the Dashboard Designer, the power users can create their own dashboard layouts. Here are a couple of examples:



Collaboration Features in the BI360 Web Portal

In early 2015, the BI360 Web Portal was extended with a number of important collaboration features that can have a big impact on how many companies do strategic planning, distribute reports, discuss performance, assign tasks, etc. Some of these features are highlighted below.

Real dialogue and insight, right now

Today's business environment moves faster than ever. BI360 *Collaboration* opens up the channels of communication across departments, functions, skill sets, resources—even devices—to ensure the right information reaches the right people, to make the right decisions. Team members can engage in open dialogue, resolve issues faster, and drastically improve productivity in an inclusive, collaborative manner.

Interactive meetings, co-creation sessions, brainstorming without boundaries

With *Collaboration*, users can discuss ideas or projects, share, annotate, edit and revise documents, and save them for future use. It is an unprecedented way to analyze and interact with ERP, CRM, BI and other data sources, to drive process improvement and innovate like never before.

Robust search functionality

Questions about a report? Budgeting concerns? Need answers from someone in IT? Collaboration's simple search functionality helps you find the people and resources you need right away. No more mass emails. No more waiting hours or even days for people to return your calls. With Collaboration, you'll find the answers you need immediately.

BI360 Collaboration features

- **Report Library:** Post reports from BI360 and other report writers into the BI360 Web Portal for easy access by other users.
- **Microblogging:** Start conversations, update your status, ask questions, post a poll, share links and files or praise someone
- **Ideation:** Post and vote on ideas within the organization. Great ideas bubble to the top by user votes. Comment and collaborate on the ideas.
- **Wikis & Blogs:** Create a personal or group blog to post rich content complete with link, images, videos and more. Wiki's are perfect for product and other documentation within the organization.
- **Project and Task Management:** Collaborate on projects with internal and external users. Manage deliverables, time lines, files and more in one place.

- Private & Public Groups: Create public, private and hidden groups with internal and external staff.
- External Networks: Invite customers, partners and other external resources to group or project conversations.
- Document Management: Create, edit or import documents in the collaboration application. Share thoughts and ideas around the documents.
- In Depth Profile: Create rich profiles to make it easy for people to find experts within the organization.
- Workflows: Fully integrated with BI360 *Planning*, Workflows are used for BI360 *Planning* Approvals, Consolidations as well as other processes within the collaboration suite.
- Company Directory: Find and connect with people within the organization. Follow people, groups and project posts. Find people with similar expertise or interests.
- Search: Robust search features to find information that matters.
- Business Intelligence: Integrated with the BI360 BI suite. Discuss financials and other information from the Reporting, *Planning* and dashboards. Collaborate on data from other BI solutions as well, such as SQL Reporting Services, FRx, etc.
- Gamification: Encourage community involvement by awarding users for posting information, creating documents and other usage of the system. Users will be awarded badges and points, which will drive their overall collaboration score.
- Mobile: Connect, browse and update your collaboration community using your favorite mobile device (phone or tablet).



BI360 – Data Warehouse

The BI360 *Data Warehouse* (DW) is BI360's configurable data warehouse solution. The DW database is fully integrated with BI360's *Reporting, Planning & Dashboard* modules. This enables immediate access to advanced financial and operational reporting capabilities, dashboards, as well as fully customizable budgeting, forecasting and data entry features. The *Data Warehouse Manager* is delivered with a simple to use desktop interface where administrators can configure and manage the *Data Warehouse* without the need for technical skills.

Data Warehouse Interface (Admin Console) Overview

The *Data Warehouse Manager* interface has been designed with the latest Microsoft technologies and it follows Microsoft best practices for interface design and usability. The interface was designed to maintain a similar look and feel to the Office products, including the use of a ribbon and Outlook-style menu bar as the main navigation components.

Data Warehouse Manager Components

Modules

The BI360 *Data Warehouse* database has been pre-designed with seven popular financial modules as well as fifty generic (user-defined) modules for any data type. However, the design is not limited to financial data; non-financial data can be handled just as well. Pre-configured modules include:

- General Ledger
- Accounts Payable
- Accounts Receivable
- Capital (Asset Information)
- Payroll
- Projects
- Revenues

In addition, the BI360 *Data Warehouse* comes the 50 user-defined modules.

To dramatically reduce implementation time, each module contains pre-defined fields specific to that module/area. The modules can be renamed using the *Data Warehouse Manager's* interface. For each module and without any need for customization, an unlimited number of

User Defined Fields can be added using the Admin Console to further extend the capacity of the transaction tables.

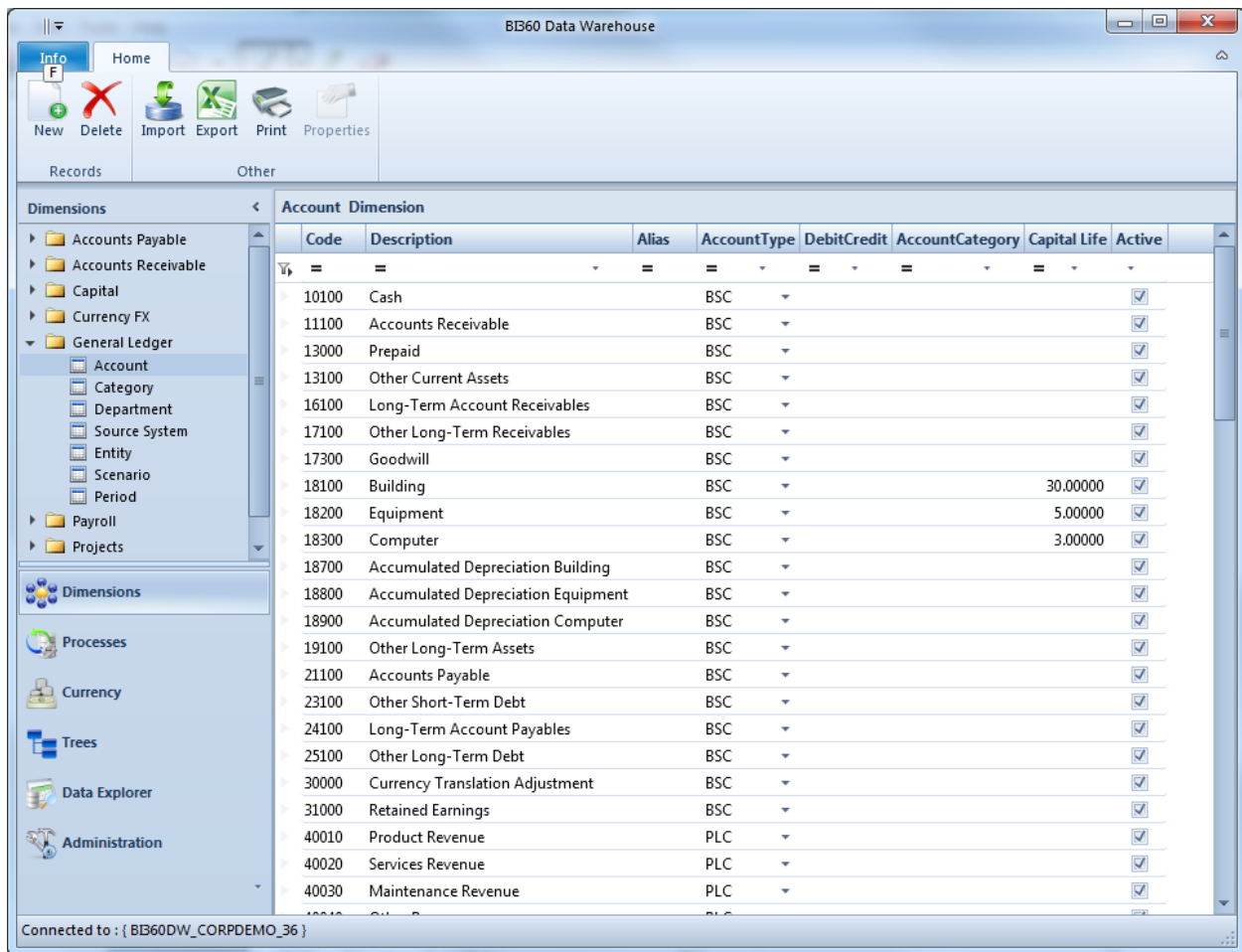
Dimensions

The BI360 *Data Warehouse* database contains dimensions specific to each module but also contains user-definable dimensions which can be added and shared across modules. Using the *Data Warehouse Manager* interface, the dimensions can easily be mapped to each module and labeled as needed. Each dimension contains many attributes specific to the dimension. Each of the user-definable dimensions also contains several User Defined Fields (UDFs) to customize the dimensions to match a customer's specific data model. Up to 40 User Defined Fields can be added to each dimension using the Admin Console.

Dimension Management

Dimensions can be managed within the *Data Warehouse Manager* interface. There are many ways to load the dimensions into the *Data Warehouse Manager*:

1. Direct import via the *Data Warehouse Manager* Interface import feature from a CSV file.
2. Automated SQL Server Integration Services (SSIS) integration import.
3. Populate with the use of pre-defined Data Warehouse connectors (for Salesforce, Acumatica, Netsuite, Intacct, etc.).
4. Manual entry: Manual entry is specifically useful for budgeting and forecasting. Since *Data Warehouse Manager* is a warehouse, Accounts and other dimensions that do not exist in the source system(s) can be created and maintained directly within the *Data Warehouse Manager* environment.



Currency

The *Data Warehouse Manager* contains advanced currency features which work with the Business Rules to calculate foreign currency exchange. The tables accommodate daily rates, which can be loaded from a source system via SSIS integration or monthly rates can be directly entered into the *Data Warehouse Manager* interface. By combining several advanced backend features, the end user experience is very simple, yet advanced. The currency conversion process has several elements.

1. **Currency Codes:** Currency codes can be manually entered, directly imported or imported via SSIS integration.
2. **Rate Types:** Rate types can be manually entered, directly imported or imported via SSIS integration. Rate types such as Average, Closing, Historical, and Budget are typical.
3. **Daily\Monthly Rates:** If daily rates are loaded into the system, monthly rates can be automatically calculated. Otherwise, monthly rates can be manually loaded or imported.

4. Rate Configuration: The configuration ties together the Account type, such as Balance Sheet, the Scenario such as Actual and the Rate Type such as Average.

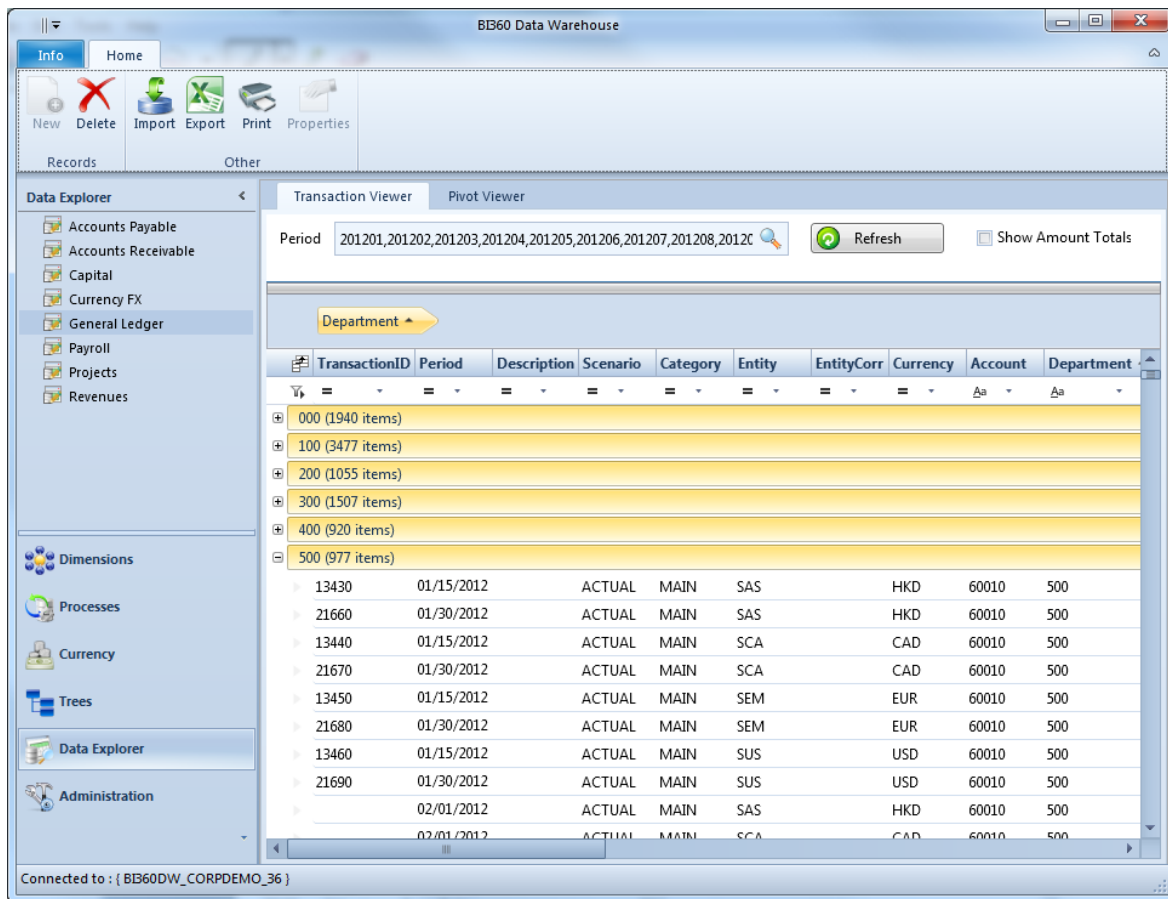
The screenshot shows the BB60 Data Warehouse application window. The title bar reads 'BB60 Data Warehouse'. The interface includes a menu bar with 'Info' and 'Currency' tabs. Below the menu bar is a toolbar with icons for 'New', 'Delete', 'Import', 'Export', 'Print', 'Properties', 'Calculate Rates', 'Show/Hide Effective Rates', and 'Multiply/Divide Rates'. The main area is divided into a left sidebar and a central table. The sidebar contains a tree view with 'Currency' selected, which includes sub-items: 'Currency Codes', 'Rate Types', 'Monthly Rates', 'Daily Rates', and 'Rate Configuration'. Below this are other categories: 'Dimensions', 'Processes', 'Currency', 'Trees', 'Data Explorer', and 'Administration'. The central table is titled 'Monthly Exchange Rates'. It has a 'Rate Type' dropdown set to 'AVG - Average'. The table columns are: 'Rate Type', 'Jan 2009', 'Feb 2009', 'Mar 2009', 'Apr 2009', 'May 2009', and 'Jun 2009'. The rows represent different currencies: CAD, EUR, HKD, and USD. The USD row shows a value of 1 for all months.

| Rate Type | Jan 2009 | Feb 2009 | Mar 2009 | Apr 2009 | May 2009 | Jun 2009 |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| CAD | 0.815461143 | 0.803148341 | 0.790826414 | 0.816993464 | 0.86888522 | 0.887705282 |
| EUR | 1.323234408 | 1.278375134 | 1.303843862 | 1.319621585 | 1.36275429 | 1.401535803 |
| HKD | 0.128921967 | 0.128971184 | 0.129026598 | 0.129027097 | 0.129014446 | 0.129019939 |
| USD | 1 | 1 | 1 | 1 | 1 | 1 |

Connected to : { BB60DW_CORPDEMO_36 }

Data Explorer

The Data Explorer is used to filter, group and display data for each *Data Warehouse* module so that an administrator, at any time, can see and validate what is stored in the *Data Warehouse* without the need to perform SQL queries or running reports. The data can be viewed within the *Data Warehouse Manager* interface or exported to Excel.

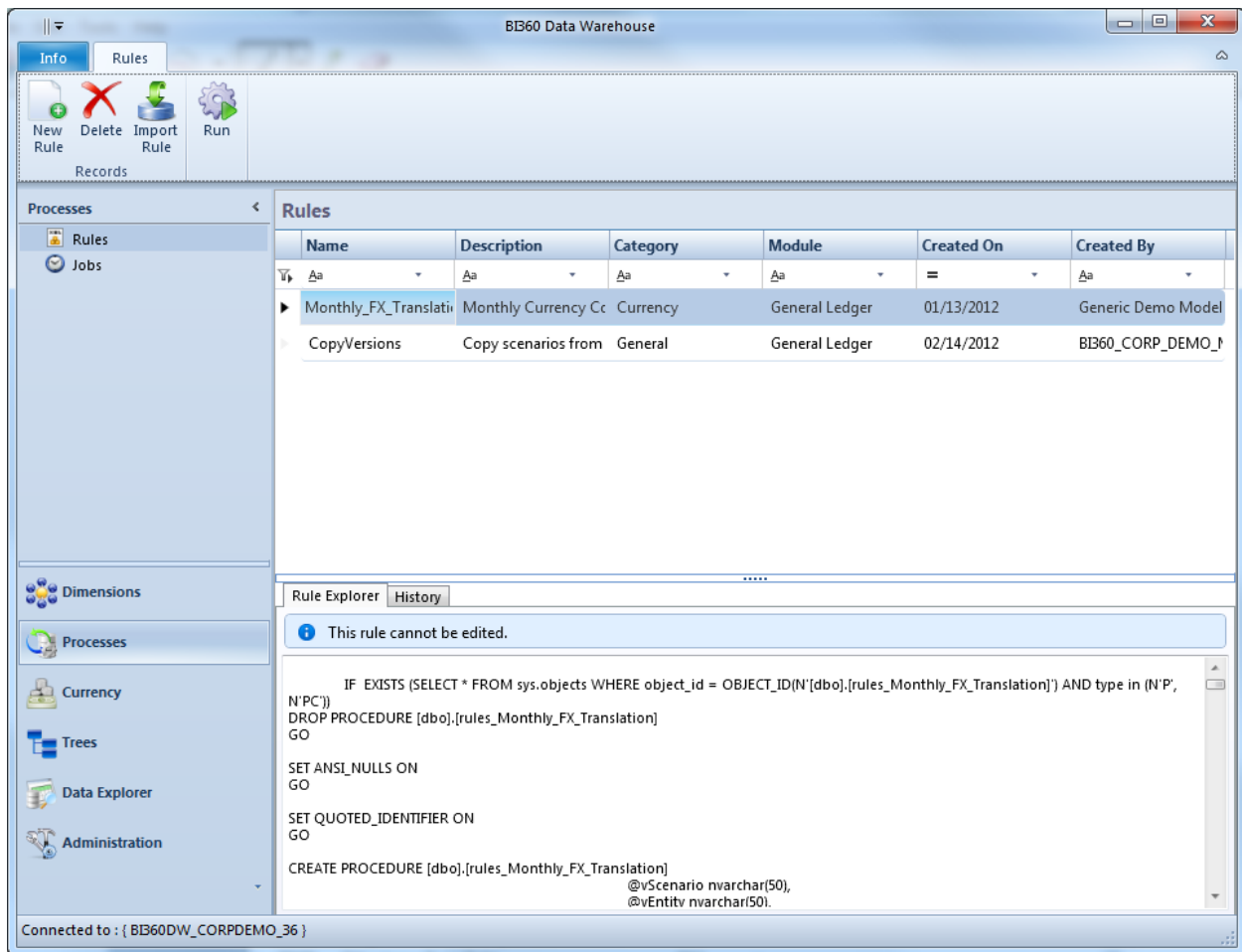


Processes

The Processes are SQL procedure-based rules which enable data transformation and movement within the *Data Warehouse Manager*. Because the rules are created as stored procedures within the *Data Warehouse Manager*, the rules can be accessed and/or scheduled using external tools, such as the SQL Server Agent. Rules can be loaded into the warehouse via an XML file. The XML file contains information about the parameters used to execute the rule as well as the SQL for the data manipulation.

Practical applications of rules include:

- Currency conversion
- Data aggregation
- Inter-company and minority eliminations
- Allocations
- Data movement
- Other transformations



Practical Usage Examples

The following are examples of various practical uses of BI360's *Data Warehouse*:

| Data Warehouse | Usage Examples |
|---|--|
| Multi-source consolidation warehouse | <ul style="list-style-type: none"> Load data from any ERP Load data from external system (ADP, FAS, Ceridian, etc.) Store multiple scenarios of budgets & forecasts via <i>Data Warehouse Manager</i> or any other Interface. |
| Instant Excel-based reporting, budgeting, forecasting, modeling and dashboards with BI360's <i>Reporting</i> , <i>Planning</i> and <i>Dashboard</i> modules | <ul style="list-style-type: none"> <i>Data Warehouse Manager's</i> pre-defined integration to <i>Reporting</i>, <i>Planning</i> and <i>Dashboards</i> enables immediate reporting, analysis and budgeting based on all <i>Data Warehouse Manager</i> modules. |

| | |
|---|--|
| Dimension & Data Integration | <ul style="list-style-type: none"> • File Import/Export capabilities for all dimensions and data modules. • SSIS Import/Export capabilities to and from any system accessible via SQL Server Integration Services. |
| Customize Modules, Dimensions & attribute names | <ul style="list-style-type: none"> • Labels can be modified to fit with the organizations requirements and to enhance the BI user experience. |
| Exchange Rate Administration | <ul style="list-style-type: none"> • Import Daily spot rates from ERP via SSIS • Automatically calculate monthly Average and closing rates as well as any other user configured rates. • Enter monthly rates directly into the database (when daily rates are not loaded) |
| Business Rules Engine | <ul style="list-style-type: none"> • Complex currency calculations for multi-national organizations |
| Data Viewer | <ul style="list-style-type: none"> • Filter, view and validate data loaded into each module. |

Typical Implementation Process

A typical implementation process of the *Data Warehouse Manager* would encompass the following:

1. Installation of the *Data Warehouse Manager* pre-configured SQL Server database.
2. Installation of *Data Warehouse Manager* desktop application on the administrators' machines.
3. Determine source systems and data to be integrated with each system and map to *Data Warehouse* modules and dimensions (see below).
4. Configure *Data Warehouse* Period table and customize Module names, dimension names as requisite (or leave default). *Note: Custom labels will also be visible in Reporting, Planning & Dashboard modules.*
5. Configure currency (as requisite). Determine if daily rates will be loaded from external system or monthly Average/Closing, etc. rates will be loaded directly into the currency table. If it set up as an automated process, then configure the SSIS Integration to update daily spot rates in the *Data Warehouse*.
6. Determine import method (automated with SSIS, pre-built connectors or manual imports):

- a. SSIS: Configure SSIS packages [E.g. to Microsoft Dynamics] to previously determined module & dimension mappings. Or implement custom data integration to any data source.
 - b. Connectors: Run the wizard in the connector to connect to the data source, set up the dimension mapping and run the data transfer.
 - c. Import: Manually import dimensions and data
7. Business Rules: If business rules, such as Currency Conversion are to be used, ensure step #5 is completed. No additional steps required, other than running rule.
8. Document integration decisions.
9. Quick training required (Walk through can be done in 1-2 hours).

Module – Dimension Mapping

Each BI360 *Data Warehouse* module contains module specific dimensions as well as user-defined dimensions which can be shared across all modules. Each module also contains several other standardized dimensions, e.g. Entity, Currency, Scenario, Category, etc. Additionally, each module contains many attributes, both system defined and user defined, including three amount fields, four text comment fields as well as other module specific attribute information.

Example of standard dimensions per module:

| Module | Unique Dim | Unique Dim | Unique Dim |
|---------------------|------------|--------------|--------------|
| General Ledger | Account | | |
| Account Payable | Vendor | | |
| Accounts Receivable | Customer | Sales Person | |
| Capital | Asset | | |
| Human Resources | Employee | | |
| Project | Project | Customer | Item |
| Revenue | Customer | Product | Sales Person |
| Other | Other | | |

BI360 System Requirements

Depending on the components installed, the BI360 *Data Warehouse* can be implemented on the same SQL server as the ERP. However, if *Data Warehouse* reporting is intended to increase performance and to offload reporting directly from the ERP, it is recommended that a dedicated SQL server be used.

Performance metrics should be established once a baseline system is configured. There are many factors that contribute to the performance of the BI360 solution, including number of concurrent users, number of transactions, size and design of reports and input forms. For more details, please contact a certified BI360 partner or Solver.

The BI360 Excel add-ins for report and budget forms/design are installed on the users' computers or a virtual desktop in a hosted environment.

The BI360 Web Portal is installed on a Microsoft IIS box.

Please request (info@solverusa.com) the BI360 Systems Requirements document for detailed recommendations on hardware and software.