# Overview of the BI360 Suite

A Solver White Paper for BI360 Cloud and Version 5+

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# Introduction

BI360 is the first full Corporate Performance Management (CPM) suite powered by Microsoft Excel for report/form template design, a self-service web portal for all end user access and Microsoft SQL/SQL Azure Server as the underlying data warehouse. Built for quick, low risk implementations and to be completely managed by business users BI360 is designed to completely satisfy the business performance management needs of corporations, not-for-profit organizations and public sector.

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

1. Available both for cloud and on-premise deployment.
2. Industry-leading, third generation Excel add-in with for simple or complex reporting and budgeting template design.
3. Modern, self-service web portal for easy access anywhere, anytime with any browser-based device.
4. Pre-Configured and easily extensible "smart" data warehouse.

The features described in this document are for the BI360 Suite.

## Architecture Overview

Below is a simplified architecture of all BI360 modules. The Reporting and dashboard modules can both report live (except for cloud deployments) on a of number of ERP systems as well as off the BI360 *Data Warehouse*. The Planning module reads data both to and from the Data Warehouse. The Data Warehouse allows BI360 to work on top of an organization's data source(s) by loading data in and exposing it to BI360's end user modules (see diagram below).

# Reporting

## BI360 – Reporting Module

As an Excel- and web-based report writer that can connect live to popular ERP and CRM systems, and to the BI360 *Data Warehouse*, BI360 *Reporting* is designed for financial reporting, consolidations, as well as various types of operational reporting.

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

1. Cloud or on-premise deployment, your choice.
2. Single Excel- and web-based report writer replacing many internal tools.
3. Excel interface that business users are comfortable with.
4. Easy to build reports with drag and drop wizards and pre-built formulas.
5. Reporting on General Ledger (GL), sub-ledgers, as well as other data sources.
6. Reporting on BI360 Data Warehouse (data can come from any data source).
7. Consolidations across companies (use BI360 *Data Warehouse* if multiple different ERP systems are in use, or for complex consolidations).
8. Currency conversion (use BI360 *Data Warehouse* for advanced currency conversion).
9. Special needs such as allocations and reconciliations.
10. Eliminate any manual exports to Excel for formatting, printing, etc.
11. Design of BI360 input forms (for budgeting, forecasting, elimination entries and other types of data entry).
12. Ad-hoc reporting (BI360 *Composer*) without the need for formulas, OLAP cubes, and pivot tables.
13. Automatically integrate reports to PowerPoint and Word using MS Office integration.

As seen in the architecture diagram earlier in this document, BI360 *Reporting* is Excel-based, it is managed through a modern web portal, and it is a module in the BI360 suite. The other three modules are:

1. BI360 *Data Warehouse Manager* – configuration and management of the BI360 data warehouse.

2. BI360 *Planning* module – input and workflow for budgeting, forecast and other data entry needs.
3. BI360 *Dashboard* module – Optional, this provides a dashboard interface to data stored to the Data Warehouse Manager. As an alternative, other dashboard tools (like Microsoft Power BI, Tableau, etc. can also be used with BI360.

In essence, it serves as a report writer and an ad-hoc query tool both for live reporting on a number of popular ERP and CRM systems, as well as for the BI360 *Data Warehouse*, in which case data can come from any source system.

Here are some scenarios for when to use BI360 *Reporting* with the BI360 *Data Warehouse*:

- Reporting across multiple source systems (like multiple ERP systems).
- Advanced currency conversion.
- Advanced consolidations.
- Allocations.
- Performance (want faster reporting without slowing down the source system).
- Budget reports (either for BI360's Planning module or for other budget system).
- Designing budget templates and other business input forms (with BI360's *Planning* module).

## Reporting Overview

BI360 *Reporting* consists of a modern (built with HTML 5) web portal where users can run and view reports, along with a flexible Excel add-in where power users design and edit reports. The latter 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 (part of the administration module). This tool is used by customers to add custom fields/tables to BI360's live ERP integrations. The meta data (integration and user friendly terms) produced by the Integration Customization tool provides BI360 *Reporting* with major advantages over standard query tools and report writers that connects directly to a data source without any form of meta data. 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, in the Meta Data Solver has already pre-defined 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 popular ERP and CRM systems (contact Solver for the latest list of pre-built integrations), the BI360 *Data Warehouse* and certain other systems, the meta data is

already developed and out-of-the box, while for other systems it may be benefical to always move data to the BI360 *Data Warehouse* and report from there.

## Reporting Components

### Web Portal - General

Whether deployed in the  BI360 Cloud or on-premise/hosted, BI360's Web portal is where all reports are managed, run and viewed.
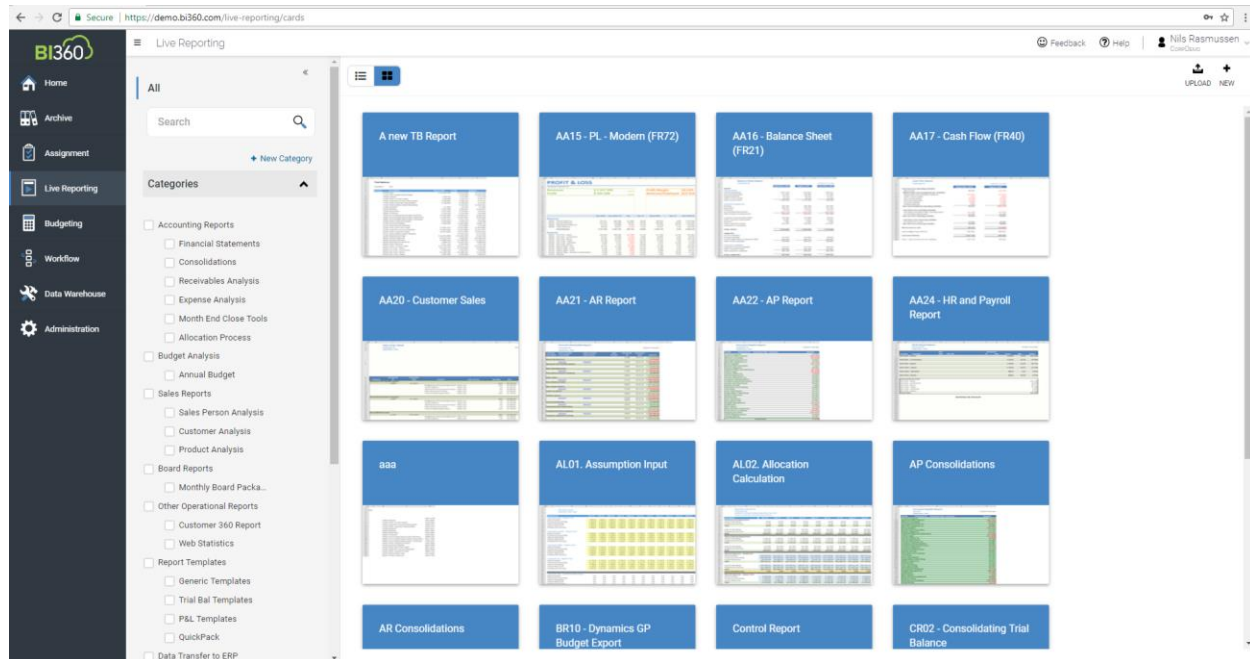


In the Live Reporting menu (see above), users can run reports on demand, while in the Archive menu, users can view reports that have been executed and posted to the Archive. A typical example would be at month end where a controller closes the books in the ERP system and then executes and reviews financial statements before posting them to the archive where managers can review and analyze the reports. In other words, it allows the power users to contorl when other BI360 users will see the completed financials.

Users with access to the Live Reporting menu can run their own reports on demand as seen in the screenshot below and use parameters (based on their access rights) to filter the data based on any criteria such as company, departmnet and period:
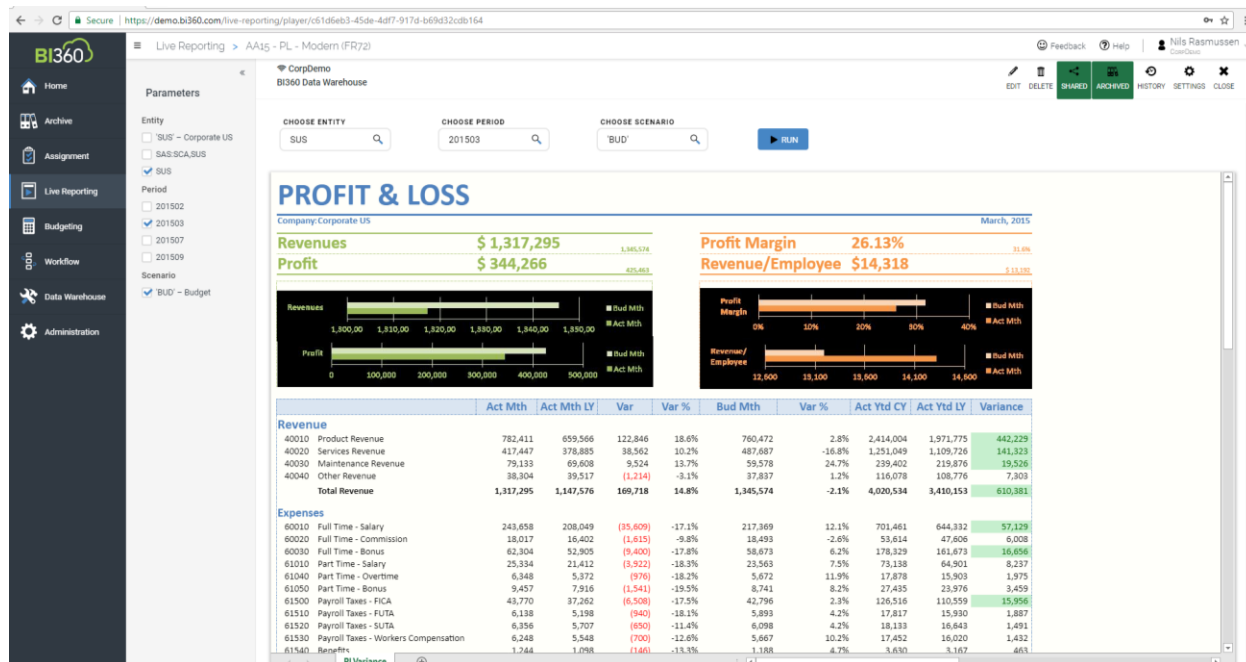
## Excel Add-in Overview

BI360 *Report Designer* uses an Excel add-in that installs (for first time uusers) and laucnhes form the BI360 Web Portal. BI360 *Report Designer* 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 Add-in 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 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).
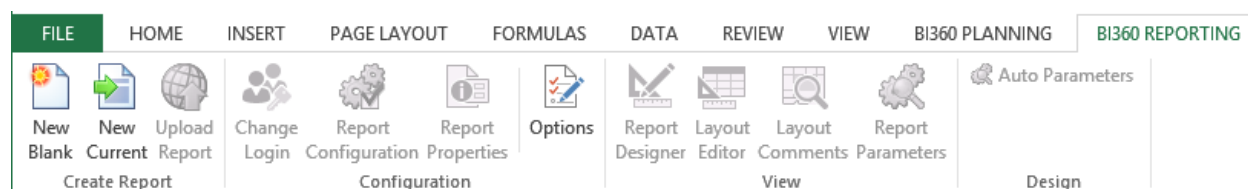


## Excel Add-in Task Pane

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

1. BI360 *Reporting* - Designer: Gives access to both design and run reports (convenient for power users as they want to test reports immediately after building them).
2. BI360 *Reporting* - Player: Gives access to run reports (typically for end users). I

Note: In BI360 Cloud and BI360 5.0, the Player function has moved to the BI360 Web Portal where end users will run and view reports in their browser and via a network or internet connection.

The BI360 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).
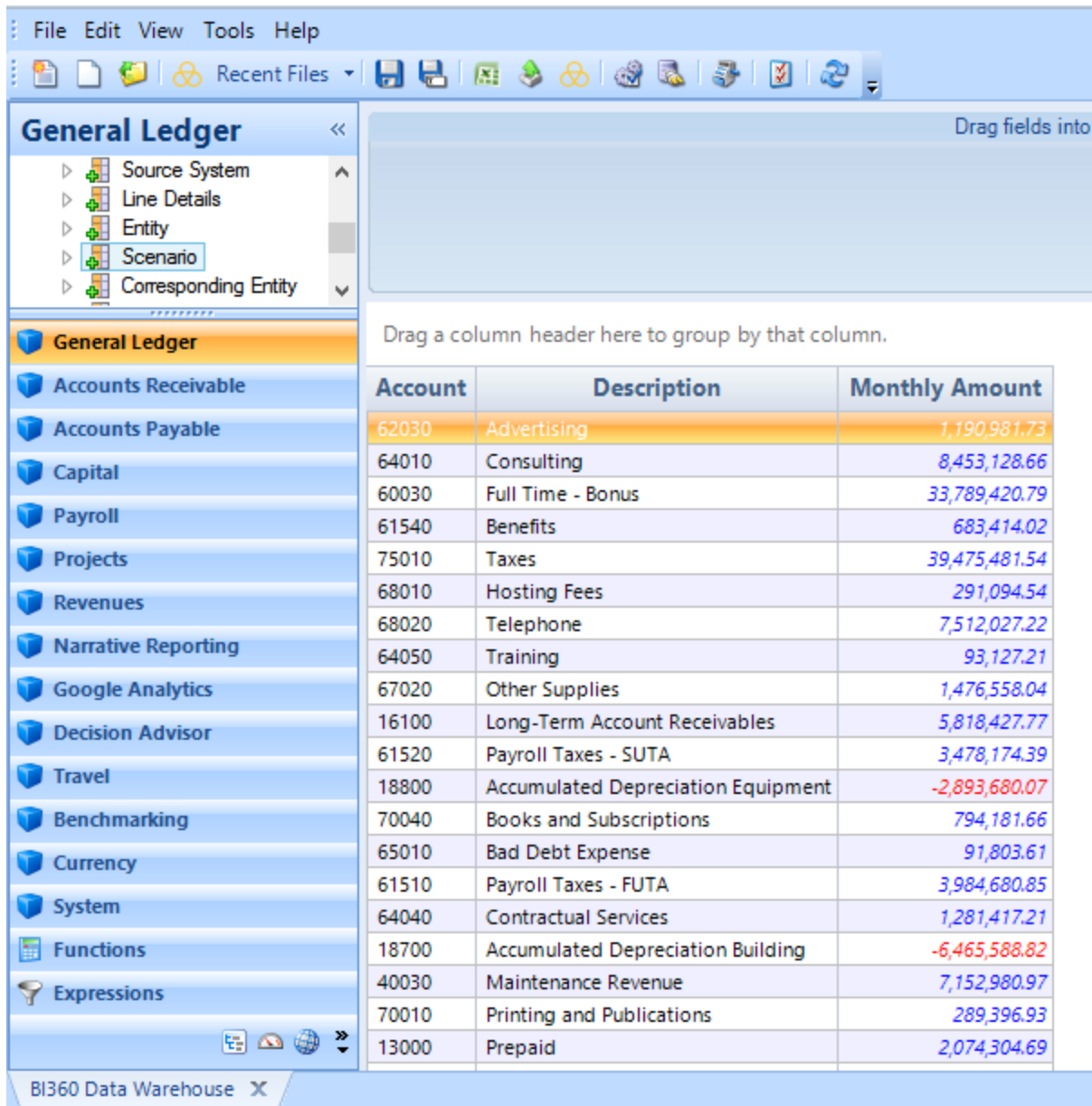
When designing a report, the user selects the fields, trees, periods, etc. from the BI360 Designer menu and drags and drops these items into the appropriate location in the Excel sheet. Most reports can be designed without entering a single formula. Some reports will need an excel formula, for example 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.

## 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 formatted reports. Typical ad-hoc users are accountants 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 BI360 *Composer* has a very simple interface 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 BI360 Designer).

Reports created in Composer can also, through a simple wizard, quickly be converted to a Reporting template in Excel using a few clicks. Add Excel formatting to turn your Composer report into a powerful BI360 report in Excel/web.

Note: In BI360 Cloud and BI360 5.0, the Composer module has become a native part of the BI360 Web Portal where users can access it over the network or internet with only a browser.

## 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 interfaces:

1. The BI360 Excel add-in where power users design reports
2. The BI360 Web Portal where end users run and view reports, including use of features like drill down, report playlists (similar to a slide show), etc.

Below is a table listing various deployment options:

| Deployment | Advantage | Disadvantage |
|---|---|---|
| Power users run reports centrally and distribute/e-mail to users | • No license required for end users | • End users cannot get reports exactly when they need them<br>• End users may want to see reports for other filter criteria<br>• End users cannot drill down |
| Power users run reports and post to a shared network drive or SharePoint | • No license required for end users | • End users cannot get reports exactly when they need them<br>• End users may want to see reports for other filter criteria<br>• End users cannot drill down |
| Power users create ad-hoc queries and export result to Excel and e-mail/print/save to server | • No license required for end users | • End users cannot answer instant questions when they need it and without requesting information from power user |
| End-users run their own reports | • End users get reports exactly when they need them<br>• End users can run reports with different filter criteria<br>• End users can drill down | • License required for end-user |
| End-users create ad-hoc queries | • End users can answer instant questions when they need it and without requesting information from power users | • License required for end-user |

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

| Purpose | Usage Examples |
|---------|----------------|
| Financial reporting | • Financial statements in various formats, like Profit & Loss, Balance Sheet and Cash Flow reports. |
| Operational reporting | • Sales reports<br>• Vendor reports<br>• Project reports<br>• HR/Payroll reports |
| Dashboard reports | • Create Excel-based dashboards that combine metrics/KPIs with charts and indicators (Excel 2007 and later supports traffic lights, arrows, etc.).<br>• If data is coming from multiple sources, deploy BI360's Data Warehouse Manager module, import data there and deploy Dashboard reports on top of the Data Warehouse Manager. |
| Scorecard reports | • Create Excel-based scorecards with KPIs (Excel 2007 and later supports traffic lights, arrows, etc.).<br>• Management's scorecard comments can be stored with BI360's Planning module.<br>• If data is coming from multiple sources, deploy BI360's Data Warehouse Manager, import data there and deploy dashboard reports on top of the Data Warehouse Manager. |
| KPI reports | • Create Excel-based reports that generate and display KPIs. (Excel 2007/2010 supports traffic lights, arrows, etc.). |
| Allocation reports | • Create Excel-based reports that calculate allocations.<br>• To store the allocations and bring them back to the ERP system, use BI360's Planning module. BI360 *Planning* can also be used to collect and store allocation drivers. |
| Commentary input | • Create Excel-based reports (e.g. a P&L) and set up BI360's budget module to collect and save text comments.<br>• Create Excel-based reports to show all comments made to certain accounts, for certain variances, etc. |
| Budget template design | • Create Excel-based input templates for use with BI360's budget module. |
| Budget reports | • Create Excel-based reports to consolidate/view budget. |
| Workflow reports | • 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. Install BI360 (or, if using BI360 Cloud, there is no installation as Solver will provide you with a cloud tenant).
2. Train power users.
3. Identify reporting needs.
4. Preparation of the BI360 *Data Warehouse* (Skip this step if BI360 will only be used for live reporting directly on the ERP system).
   a. Populate the Data Warehouse with data and dimensions from 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.
5. Design Excel report templates with BI360 *Reporting* and publish them to the BI360 Web Portal.
6. Set up security (if different users require different access rights).
7. Train end users on accessing the reports in the BI360 Web Portal (will only take minutes as they just need to learn how to run reports and drill down).

# Planning



## BI360 – Planning Module

This BI360 module offers a complete solution for budgeting, forecasting, and other data entry needs. Similar to BI360 Reporting, you design the budget forms with the BI360 Excel add-in and publish the forms to the BI360 Web Portal. Below you can see the view that power users will see in the web portal's Budgeting menu.
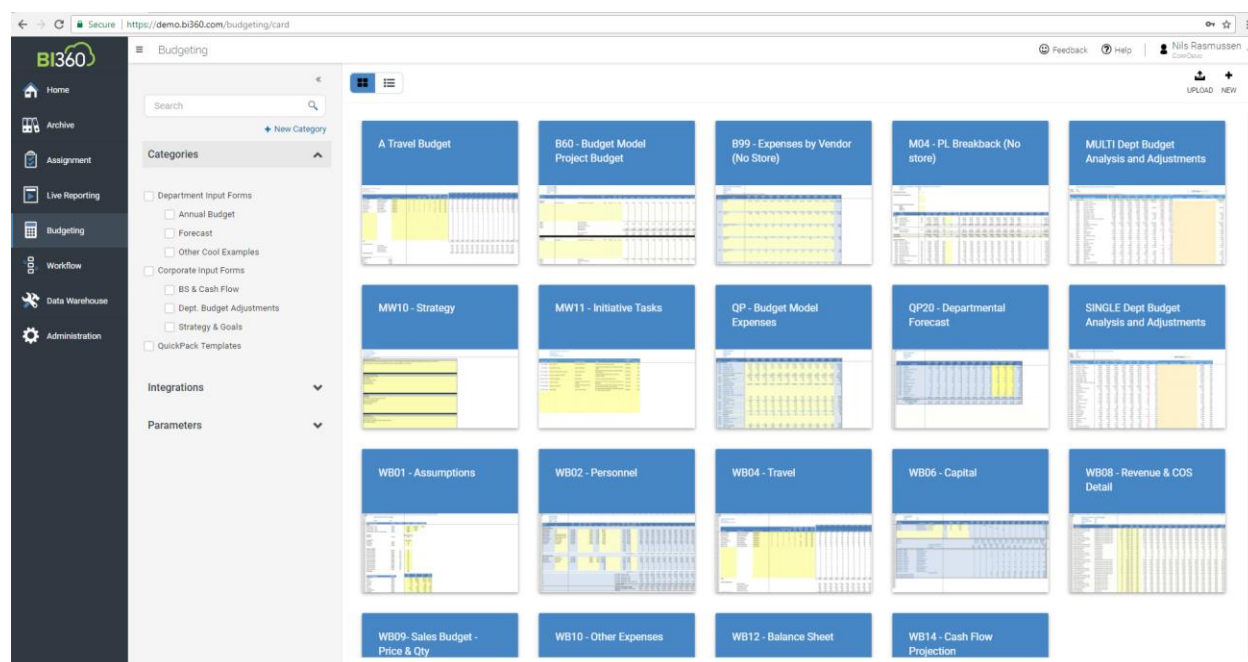


The above portal is where the power user manage the input forms and when they build a new form or edit an existing one, it will launch the form from the web portal and into the BI360 Reporting Excel add-in (see screenshot below of a form in edit mode in Excel):
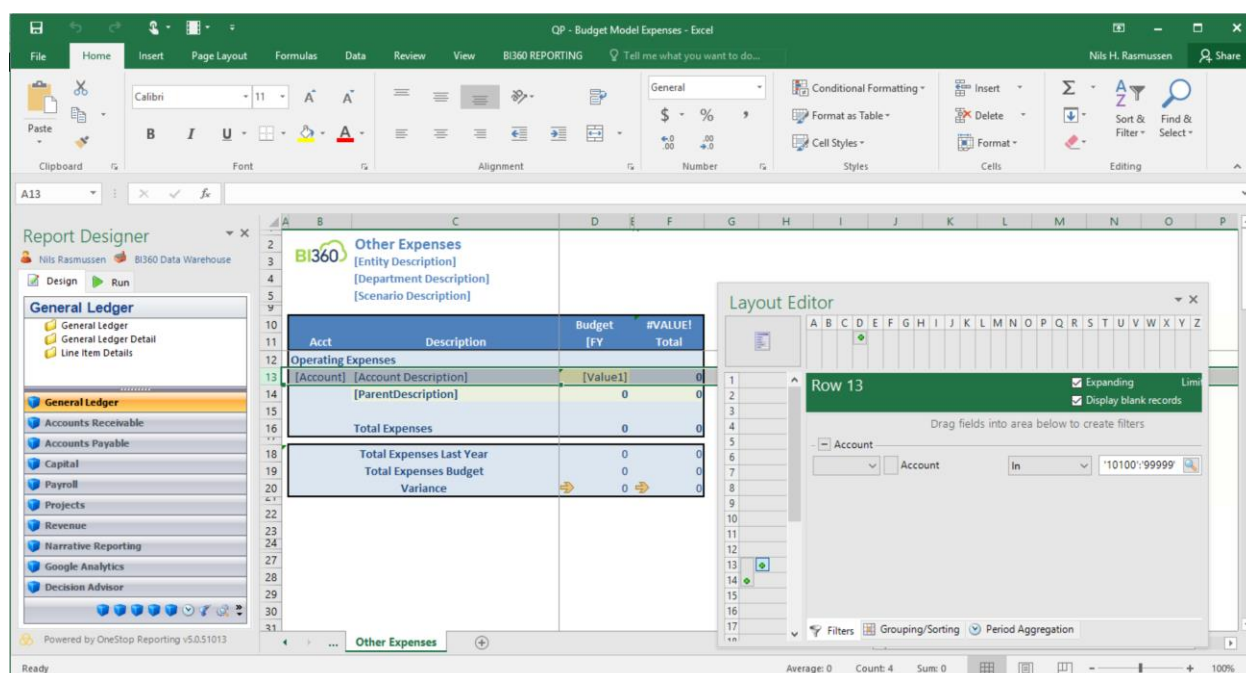
While the primary use of BI360 Planning is for budgeting and forecasting, in reality, most organizations have numerous manual data collection processes that could be automated with BI360 Planning.

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* – Required
   a. This is where BI360 Planning stores all data from the input forms.
2. BI360 *Reporting* module – Required
   a. Used to create the input templates. Note: The BI360 Planning license adds <u>write-back</u> features to the BI360 Report designer thus allowing for the design of input forms.
   b. Used as the report writer to report on all the data that Planning stores to the Data Warehouse database as well as for actual to budget variance reports, budget consolidation reports, etc.
3. BI360 *Dashboard* module – Optional
   a. This provides a dashboard interface with the data stored to the Data Warehouse.

After the users have entered and saved their data in the input forms in the BI360 web portal , managers can start reporting on the entered data. There is also a workflow module to help monitor and manage the data entry process. Finally, if desirable, the data can be transferred from the Data Warehouse database and back to other source systems such as a budget module inside the general ledger.

## BI360 Planning Overview

BI360 *Planning* is a modern web-based budgeting solution with a powerful Excel add-in for design of anythign from simple to highly complex input forms.

## Planning Components

BI360 *Planning* consists of two main components: the Web Portal and Excel add-in.

### BI360 Excel Add-in

- Used for <u>design</u> of budget, forecast and any other type of desirable input form.
- Same Excel add-in as the BI360 Report Designer but with additional write-back features.
- Automatic upload/download of input templates between Excel and the BI360 web portal.

### BI360 Web Portal

The web portal is where eberythign except form design is handled. In other words, tasks like data entry, security, user administration, workflow, etc.

The three main budgeting functions in the BI360 web portal is:

1) Assignments: This is a menu item where input forms have been organized and is made available to end users. Key features in a form (apart from the actual layout) are saving of data, drill-down, spreading, line item detail (e.g. detailing many different trips under the "Travel Expense" account) and text comments.



2) Workflow (optional): Here, the power user setups up deadlines for data submission, which input forms should be used by which user/group, view the submission status per user, etc.

3) Budgeting: This menu (as shown in the screenshot earlier in this section) is where power users manage all the input forms and set up assignments.

## Practical Usage Examples

In most cases, BI360 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* is used for.

| Form Configuration | Examples | Typical Distribution |
|---|---|---|
| Multiple different workbooks (when it is designed in Excel), each with a single budget sheet. | - Departmental Profit & Loss<br>- Departmental Expenses | - Input done by central staff<br>- "Bottom-up" budget process with data entry done by end-users |
| Single workbook with multiple budget sheets with the <u>same</u> layout. | - Different departments on different sheets<br>- Different products on different sheets | Input done by central staff |
| Multiple similar workbooks with multiple different budget sheets in each workbook | Workbook with:<br>- Summary Profit & Loss or Expense sheet<br>- Revenue Detail<br>- Employee Detail<br>- Capital Expenses | "Bottom-up" budget process with data entry done by end-users |

Here are examples of <u>other</u> uses of BI360 Planning as a data collection tool:

| Excel Configuration and Input Type | Usage Examples |
|---|---|
| Modeling | Create a product or service price model. Use BI360 *Planning* to store each scenario to the BI360 Data Warehouse and then use BI360 *Reporting* to output reports/charts. |
| Break-back analysis | Use one of Solver's special break-back templates (or design one from scratch), 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 (can use the BI360 report module to create automated, parameter-driven allocation calculations), use BI360 *Planning* to store the allocated numbers to the BI360 Data Warehouse. From there, use the allocations in BI360 reports or transfer the allocated numbers back to the ERP system. |
| Electronic data entry of:<br>  o  Statistics<br>  o  Key Performance Indicators (KPIs)<br>  o  Other organizational information | Create input forms for any text or numerical information and use BI360 *Planning* to store it to the BI360 Data Warehouse. From there create reports with the BI360 *Reporting*, create OLAP cubes for analysis, or transfer the collected data to other systems. |
| Commentary input for:<br>  o  Monthly actual/budget variance reports<br>  o  Scorecard KPIs<br>  o  Quarterly/Annual reports | Add comment columns to BI360 financial statements or scorecards (e.g. generated dynamically with BI360 *Reporting*), and use BI360 *Planning* to save the text to the BI360 Data Warehouse. Use BI360 *Reporting* 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 (in this example assume that BI360 *Planning* is being used for budgeting):

1. Install BI360 (or, if using BI360 Cloud, there is no installation as Solver will provide you with a cloud tenant).
2. Train power users.
3. Identify budgeting needs.

4.  Preparation of the BI360 Data Warehouse.
5.  Populate the Data Warehouse with historical figures and dimensions from General Ledger (and if needed also from systems like Payroll and Fixed Assets). Examples of dimensions are: Account, Department, Project, Product, Employee, Asset, etc.
6.  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.
7.  Preparation of Excel budget templates.
8.  Design 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 populated to the Data Warehouse in step 1 above.
9.  Manually created Excel budget workbooks will also work. As a best practice, make them as structured as possible and make sure all dimensions are listed somewhere.
10. Planning Setup (as explained earlier in this section).
11. Train end users.

Note: BI360 Planning also has an alternative Excle add-in (not available for BI360 Cloud) that allows for data entry in Excel and that is not usign the BI360 Web portal to present the input forms to end users.

# Dashboards

## BI360 – Dashboard Module

Thanks to its capability to calculate and store metrics and KPIs, BI360 can support any dashboard product that can read from a Microsoft SQL Server database (or from the BI360 API that will be launched in Q1, 2018). Many companies have already invested in dashboard tools like Microsoft Power BI, Tableau and Qlik, and in that case, these can be used with BI360 and they will benefit from the highly organized structure of the BI360 Data Warehouse.

However, some organizations prefer to have dashboards as an embedded part of the BI360 reporting and budgeting web portal and in that case the BI360's Dashboard module offers 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 key metrics that drive organizational performance and processes.
2. Very user-friendly interface that usually does not require training for end-users.
3. Relatively low cost and easy to implement.
4. Business users can quickly learn how to build custom dashboards and scorecards 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* module
2. BI360 *Planning* module – Optional
3. BI360 *Reporting* module

In the architecture diagram earlier in this document, it demonstrated 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 data can come from any source system.

## Dashboard Overview

Below is a sample screenshot of a BI360 *Dashboard* available in BI360 version 4.x. For BI360 Cloud and version 5.x, use Power BI or other 3rd party dashboards.

Example of a BI360 version 4.x dashboard:



Example of a Microsoft Power BI dashboard:
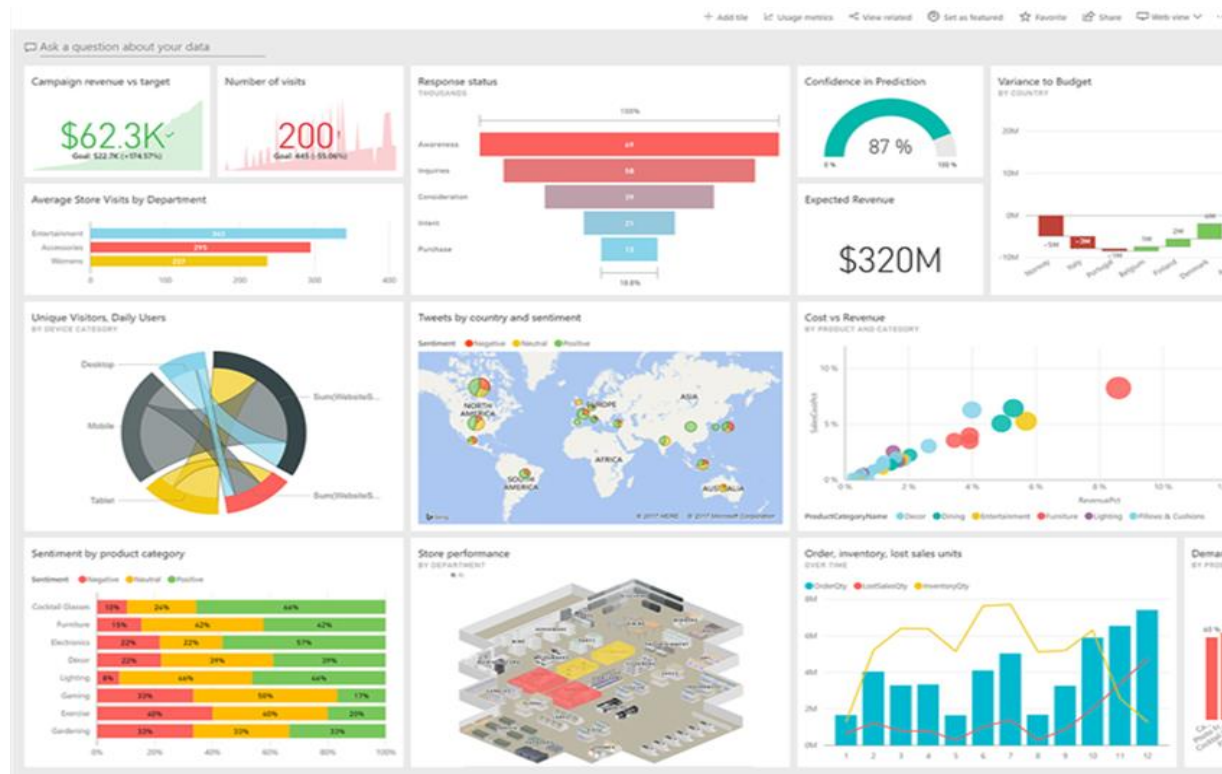
# Data Warehouse

## BI360 – Data Warehouse Module

The BI360 *Data Warehouse* (DW) is BI360's powerful, configurable data warehouse solution. The DW database is fully integrated with BI360's web portal and its Reporting, Planning & Dashboard modules.  This enables immediate access to advanced financial and operational reporting capabilities as well as fully customizable budgeting, forecasting and data entry features. The Data Warehoue is delivered with a simple to use web interface (BI360 Cloud and on-premise version 5.0 and later) where administrators can configure and manage the Data Warehouse and load data without the need for much technical skills.

### Data Warehouse Interface Overview

The Data Warehouse Manager interface has been designed to be managed by business users and for rapid setup and easy ongoing managment of data, dimensions, trees and integrations.
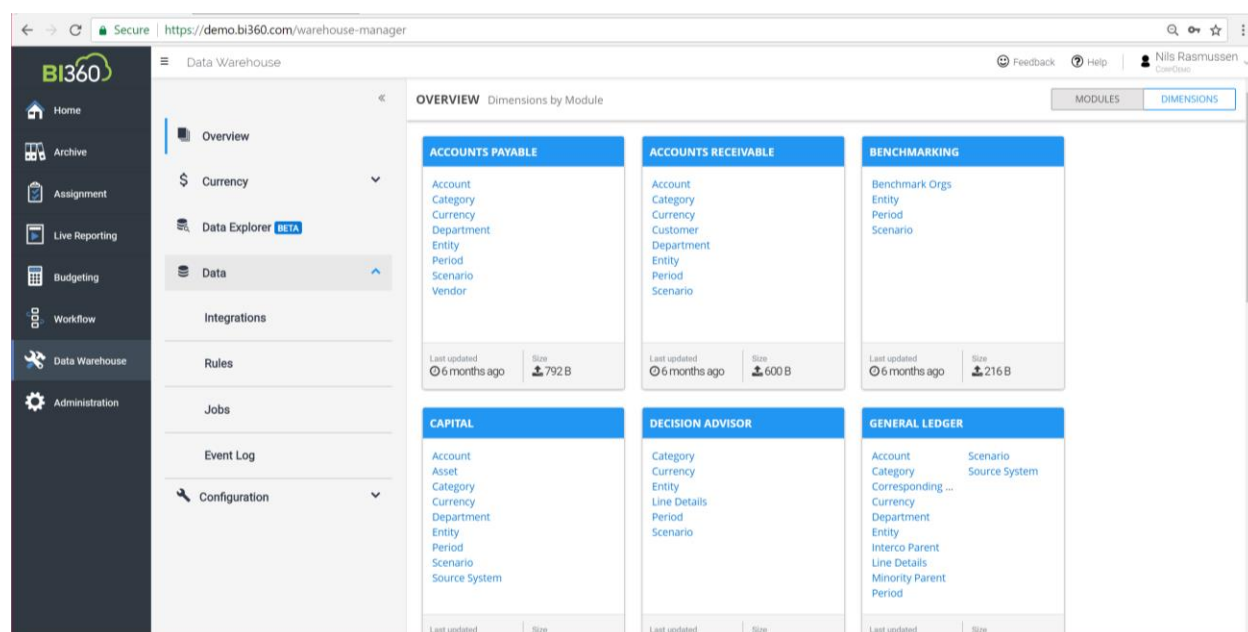
## Data Warehouse Manager Components

### Integrations

The BI360 *Data Warehouse* (BI360 Cloud and version 5 and later) comes with a powerful integration tool. It includes a generic connector to load data from .CSV files as well as numerous pre-built connectors to popular data sources. It can load data from on-premise data sources as well as cloud data sources. For on-premise BI360 instalations, you can also use Microsoft SSIS and other popular integration tools that support the Microsoft SQL Server platform.

The BI360 integration tool can automatically set up modules and dimensions in the data warehouse or you can set them up manually (as described later in this chapter).
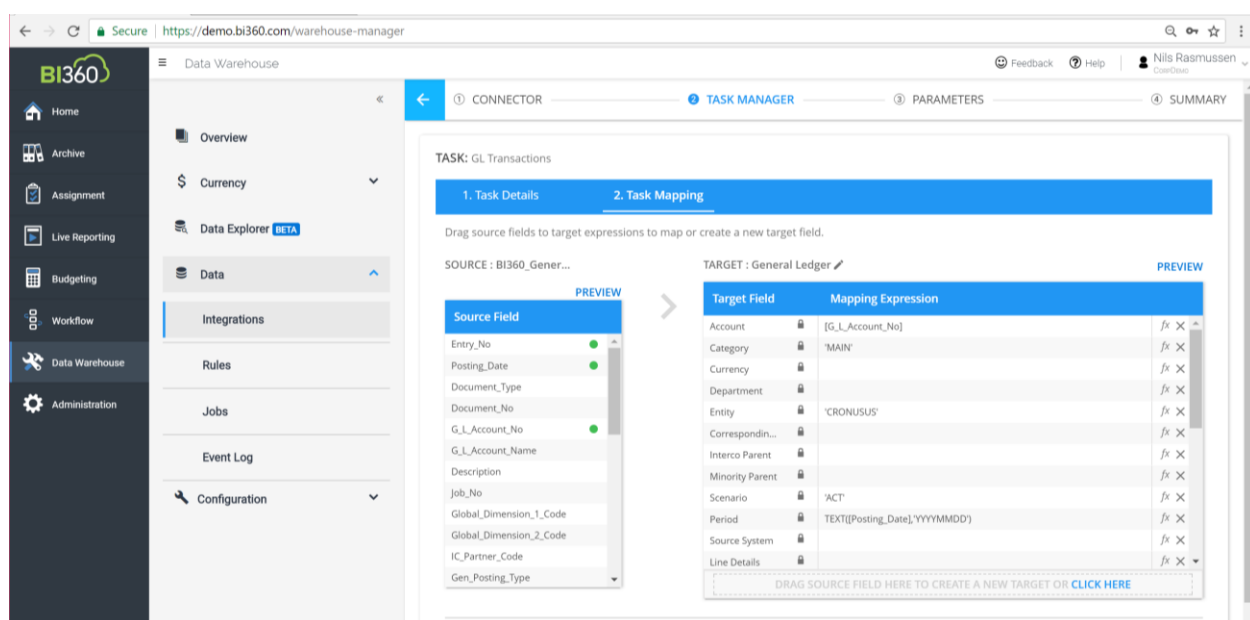


### Modules

The BI360 *Data Warehouse* has been pre-designed with a number of popular financial modules as well as (user-defined) modules for any data type. It offers a total number of 100 modules (BI360 Cloud and version 5 and later). However, the design is not limited to financial modeling; non-financial modeling can be handled just as well. Pre-configured modules include:

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

- Other Modules (Generic 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 interface. For each module and without any need for customization, an unlimited number of User Defined Fields can be added using the Data Warehouse menu in the BI360 web portal to further extend the capacity of the transaction tables.
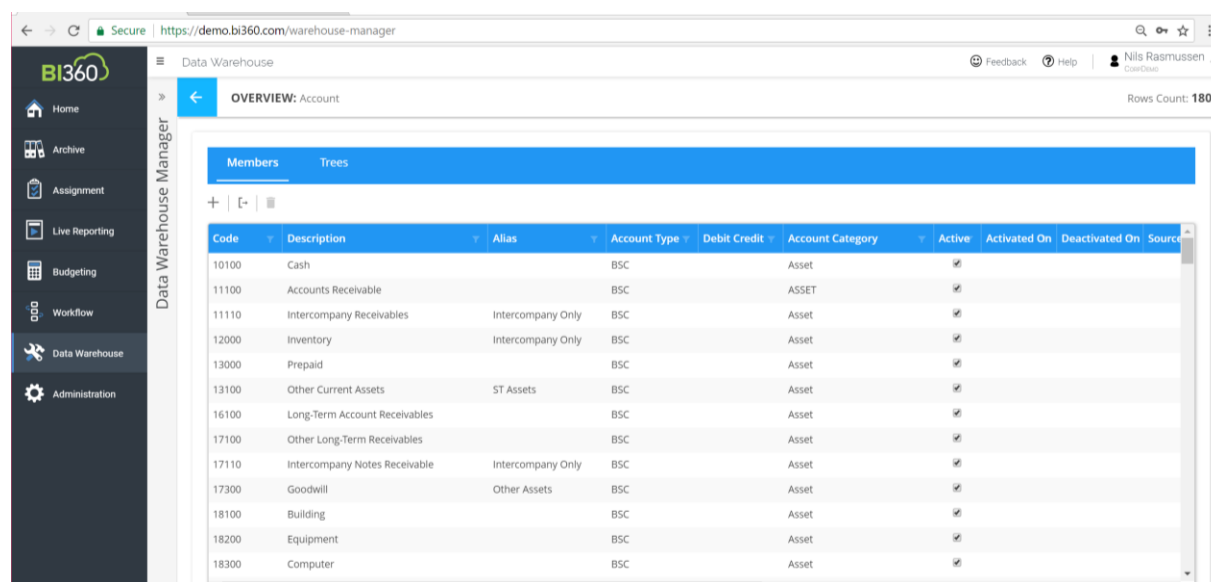
## Dimensions

The BI360 *Data Warehouse* contains pre-defined dimensions specific to each module but also contains forty custom dimensions which can be shared across modules. Using the Data Warehouse interface, the dimensions can be mapped to each module and labeled as needed. Each dimension contains many attributes specific to the dimension. Each of the custom dimensions also contains attributes to customize the dimensions to match a customer's specific data model.

## Dimension Management

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

1. Automatic import via the BI360 Web Portal Integration tool.
2. Automated SQL Server Integration Services (SSIS) integration import (Note: for on-premise installations of BI360)
3. Manual entry: Manual entry is specifically useful for budgeting and forecasting. Since Data Warehouse has a friendly user interface, Accounts and other dimensions that do not exist in the source system(s) can be created and maintained directly within the Data Warehouse environment.

## Currency

The Data Warehouse 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 integration or monthly rates can be directly entered into the Data Warehouse interface. By combining several advanced backend features, the end user experience is very simple, yet advanced. The currency conversion process has several elements.

1. Rate Types: Rate types can be manually entered, directly imported or imported via an integration. Rate types such as Average, Closing, Historical, and Budget are typical.
2. 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.
3. 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.
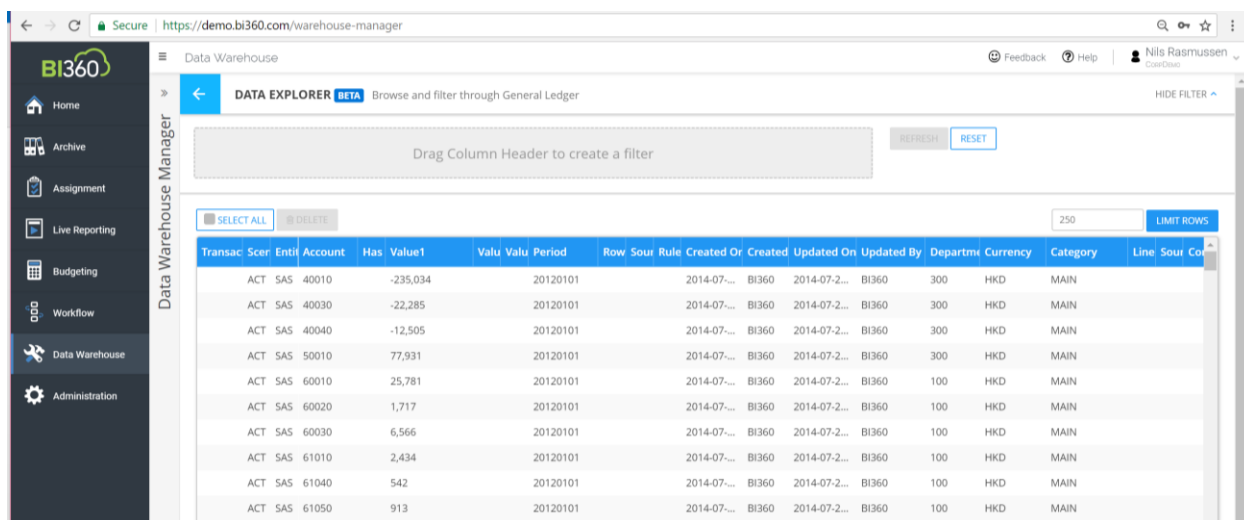
## Data Explorer

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 Manager 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
- Entity 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 | • Load data from any ERP<br>• Load data from external system (ADP, FAS, Ceridian, etc.)<br>• Store multiple scenarios of budgets & forecasts via the Data Warehouse or any other Interface. |
| Powerful reporting, budgeting and modeling with BI360's Reporting and Planning modules | • The BI360 Data Warehouse's pre-defined integration to Reporting and Planning enables immediate reporting and budgeting to/from all Data Warehouse modules. |
| Dimension & Data Integration | • File Import/Export capabilities for all dimensions and data modules.<br>• BI360 Integration tool and SSIS Import/Export capabilities to and from systems accessible via SQL Server Integration Services or popular APIs. |
| Customize Modules, Dimensions & attribute names | • Labels can be modified to fit with the organizations requirements and to enhance the BI user experience. |
| Exchange Rate Administration | • Import Daily spot rates from ERP via integration<br>• Automatically calculate monthly Average and closing rates as well as any other user configured rates.<br>• Enter monthly rates directly into the database (when daily rates are not loaded) |
| Business Rules Engine | • Complex currency calculations for multi-national organizations |
| Data Viewer | • Filter, view and validate data loaded into each module. |

## Typical Implementation Process

A typical implementation process of the BI360 Data Warehouse would encompass the following:

1. Installation of BI360 (not required with BI360 Cloud).
2. Determine source systems and data to be integrated with each system and map to BI360 Data Warehouse modules and dimensions (see below).
3. Configure BI360 Data Warehouse Period table and tailor Module names, dimension names as requisite (or leave default). *Note: Custom labels will also be visible in Reporting, Planning & Dashboard modules.*
4. 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 Integration to update daily spot rates in the Data Warehouse.

5. Determine import method (BI360 Integration Tool, SSIS or manual imports):
6. Configure Integration Tool or SSIS packages (E.g. to the ERP system) and map to DW module & dimension mappings.
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 module contains module specific dimensions as well as ten free 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 system defined attributes including three amount fields and one text comment field.

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

# Appendix

## Additional Resources

The Solver Support Center (support.solverusa.com) is the centralized location for users to learn more about the BI360 Suite. From opening and managing your support tickets to reading knowledgebase articles about the product, the Solver Support Center has everything a user will need.

Users may contact Solver Support if they have questions about the BI360 Suite. One of our technical support consultants will gladly assist you.

Users can access the Solver Knowledgebase for more information about the entire BI360 Suite. From user guides, white papers, training manuals and much more, the Solver Support Center has everything a user will need to get started with the application.