Cognos Analytics User Training

Introduction & Overview

1. Introduction

1.1 What is Cognos?

Cognos is a business analytics tool that provides users with a single, self-service portal to access and produce reports, dashboards, and ad hoc queries quickly and securely. This powerful tool allows users to manipulate existing reports, drilldown to detail data, and conduct ad hoc analysis.

1.2 Who should use Cognos?

Any Northeastern employee who needs detailed reports that can be used for in-depth analysis, trend identification, tracking daily transaction records, and similar items can use Cognos as their one-stop reporting tool.

1.3 Why should I use Cognos?

Compared to the current reporting options available to the NU community, Cognos provides more robust and flexible report-building options, while offering more output choices. With an engaging user interface and a new data warehouse optimized for analytical reporting, Cognos offers a better alternative when compared to the flat, limited functionality of other reporting tools. Cognos functionality that is not available in Argos, for example, includes drill down/drill up capabilities, drag & drop report building, and advanced filtering.

1.4 What will I learn in this training?

The emphasis of this training session will be basic functionality and features of Cognos that can be used to create simple reports. You will learn how to:

- Navigate through all Northeastern content that you have been granted access to;
- Basic set-up and structure of the Cognos Analytics user interface
- Run a pre-existing report;
- Create, modify, and run new Crosstab and List reports;
- Navigate data hierarchies, including drilling up and down through the data;
- Filter report results;
- Sort results, nest multiple dimensions (add multiple layers of data), add sub-totals, and
- format reports;
- Suppress empty report cells.

1.5   What will not be covered?

This introductory training will only cover basic Cognos functionality. Advanced topics and functionality can be covered in 1:1 sessions, User Group meetings, or other training sessions. Future training topics may include:

- Creating and maintaining report dashboards, stories, and data modules;
- Creating charts and graphs;
- Advanced report options, such as conditional formatting and advanced calculations;
- Functional area specific training.

1.4   Accessing and Logging on to Cognos

Cognos Production environment:

https://insights360.neu.edu
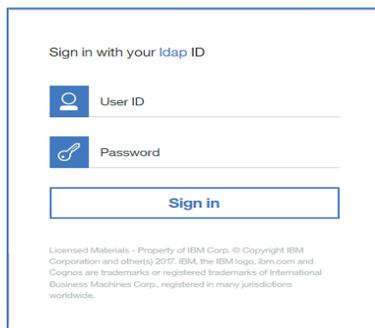
Log on with your myNEU ID and password

Note: To access Cognos outside the NU Network, you must use the VPN. For additional information about the NEU VPN: http://www.northeastern.edu/its/services/vpn/

2. Cognos Analytics Welcome Page

2.1 Welcome Page

The Welcome page is the user's initial interface with all site content and reporting options.
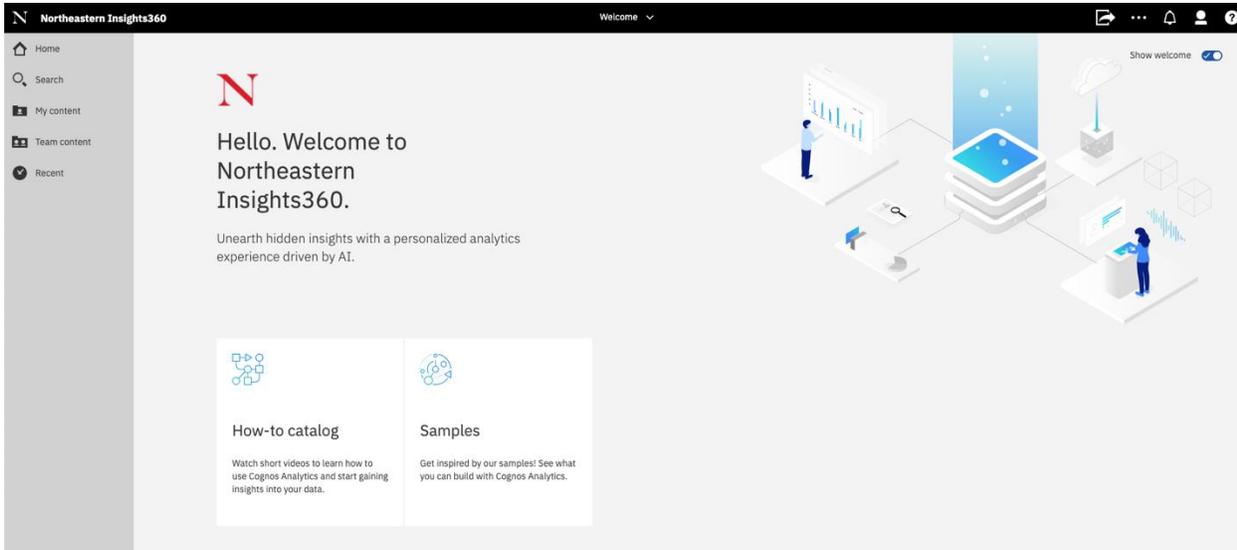
The *Team Content* folder contains all of the standardized data models and reports available to users in a specific Business Unit or Units, as well as content shared by other users.
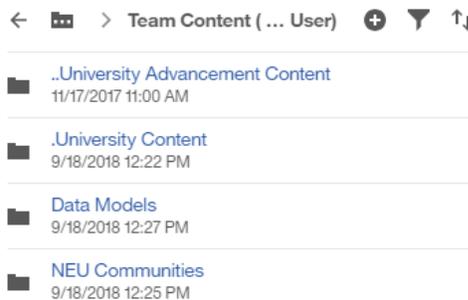

A Business Unit is similar to what the Banner systems refer to as a Division, such as individual colleges (e.g., College of Science) or functional areas (e.g., Accounting).

Within the *Team Content* folder, you will find the following subfolders:

- *Business Unit Content*- This will appear as the first folder in the menu and will show content specific to your business unit. For example, a user from University Advancement would see "Advancement Content" whereas a user from Facilities would see "Facilities Content". It is a secured area, only accessible to members of your business unit.
- *University Content* - This folder contains all Business Intelligence Team (BI Team)-managed content. Please refer to section 3.1 of this manual for details.
- *Data Models* - Contains all available data models that can be used to create custom reports. Data models are secured so that only authorized users can create reports using the individual models.
- *NEU Communities* - A community-sharing space which is *v*isible to any other Cognos user, regardless of Business Unit. The content saved here can be edited by any user.
- *Samples* - This folder contains report and data model samples used in Cognos training. The reports and models feature non-Northeastern data and are for training purposes only.

The *My Content* folder is a private area accessible only by the individual user.
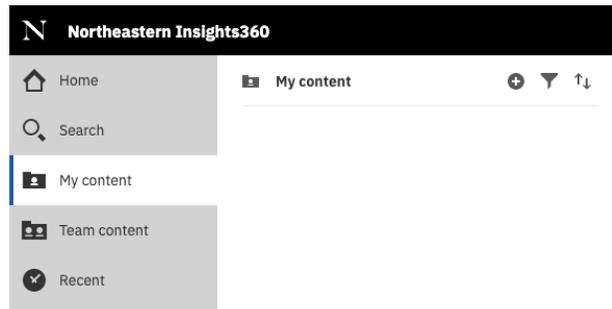
All content saved in the *My Content* folder is only visible to the user, who can create, modify, and delete as desired. The user can personalize the arrangement of the content in this folder, creating sub-folders by using the ⊕ icon. *My content* items can also be filtered and sorted using the following icons, respectively: ▼ ↑↓

2.2 Additional Welcome Page Resources

There are several useful options available on the Welcome page. Below is a brief description of each icon:

Icon	Icon Name	Definition
⌂	Home	Brings you back to the Welcome page.
🔍	Search	Allows you to search all Cognos folders for a specific item, word, or phrase.
🕑	Recent	Lists the user's most recently accessed reports. This information will also appear in the middle of the Welcome page.
＋	New	Clicking on the 'New' button allows users to create new reports, dashboards, stories, explorations or data modules.
↪	External Links	Links to Data Administration Sharepoint and Data Cookbook.
•••	More	Allows the user to set a new default home page. When accessing an individual report, provides options to share or subscribe to the report.
🔔	Notifications	User alerts or notifications are accessed using this link.
👤	User Profile	Allows users to set individual preferences and report subscriptions.
❓	Help	Link to the NEU Cognos Intro Video. Also lists vendor-sourced help, community forums, and other resources.

2.3 How-to Catalog

The *How-to Catalog on the welcome page* contains vendor supplied instructional videos for Cognos functionality:
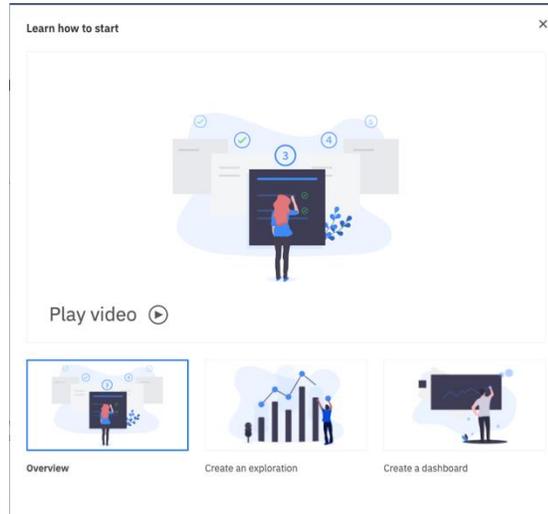
3. Reporting in Cognos Analytics

3.1 Golden Reports

In *University Content* folder, users will have access to all Business Intelligence Team (BI Team)-managed content. These Golden Reports (also known as Canned Reports) are centrally developed and maintained by the BI Team based on user requirements. The report subject area is designated by the letters at the beginning of each report, as follows:

- All Finance-related reports begin with the FIN designation;
- All Research-related reports begin with RSRCH;
- All Human Resources-related reports begin with HR;
- All Student-related reports begin with STU

Cognos users will only be able to see report results for those subject areas approved for access by Data Custodians. If a user tries to run a report for a non-approved subject area, they will see no results.

Many of these reports feature functionality allowing users to drill up or down between different levels. For example, output for divisional reports can be drilled down to the department or organization level and back up again. In addition, many golden reports feature drill-to-detail capabilities, where users can click on summary amounts to open new report tabs with the detailed data behind those numbers. This functionality exists in reports from all subject areas,

using requirements approved by subject matter experts, data custodians, and/or the Cognos user community.

3.2   Running an Existing Report

In addition to the Golden or Canned Reports described above, users may create individual custom reports that they will use on an ongoing basis. In both instances, previously created reports can be run without having to recreate them each time.

Existing reports can be run by simply clicking the blue hyperlink of the report name. This will run the report with the default format option, initially set as HTML. Users may also select another report output format by clicking the ellipsis to the right of the report name and selecting '*Run As.*' Selecting this icon will enable users to override the default option and choose an alternate report format.

Note: You can change the default format option by clicking on the "My Account" icon (👤) on the top right of the screen and then clicking "My Preferences". For example, you can set it to "Excel" if you would like to run reports directly to Excel by default.

3.3   Data Elements

Within all Cognos data models, the data elements are broken down into two categories: Dimensions and Measures. These are the attributes that populate all reports created in Cognos.

Dimensions are qualitative data parameters that define and provide context for selected measures when building reports. They are textual labels that enable filtering, aggregation, and drilling capabilities (slice & dice). Examples include Student College, Course College, Program, Organization, Fund Type, Account, etc.

Measures are quantitative data components that act as the main data points of the reports. Measures enable the monitoring, analysis, and evaluation of University processes. Examples include dollar amounts, headcounts, Credit Hours, Budget Amount, Actual Amount, etc.

Measures and dimensions interact with each other when building reports. The following illustration shows how they relate to each other.

The sample measure, $20,000, does not tell the user much information; what does this relate to? To add context, we add dimensions, which provide the What, When and Where of the measure:

- Fiscal Period: September 2013 (When)
- Account Type: Expense (What)
- Organization: DIV17 – ITS (Where)
- Account: 73005-Capital Equipment-Computers (What)

3.4   Creating a New Report

To create a new Cognos report, navigate to the Welcome Page by hitting the *'Home'* icon on the left-hand toolbar. On the lower left side of the page, click on the *'New'* icon:

Then select the option for *'Report.'*

On the right side of the new page, to create a report with just one table, use the *'Bronze'* template option. If creating a report that will feature multiple tables, charts, etc., choose the layout you wish to use. Users may also select a report theme, or color scheme, by clicking on the *'Themes'* tab located to the right of the 'Templates' tab. There are several color combinations that can be selected and applied to the report output. Once you highlight your selection(s), click the '*OK*' button on the right side of the page. A new report page will open, as shown below.
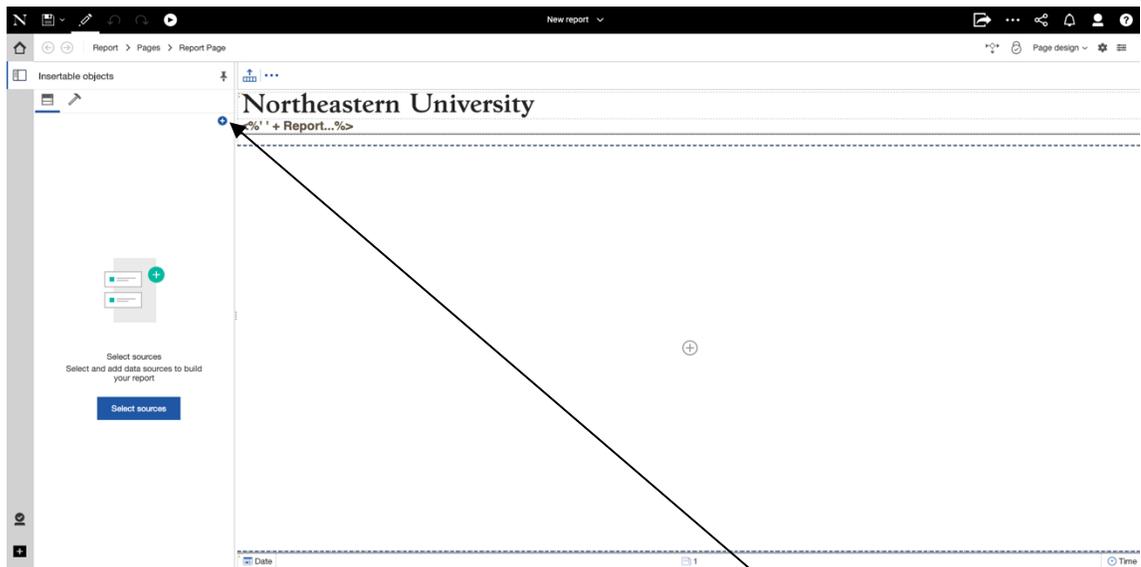
When you reach this screen, the menu options on the left hand side of the page will change from the content folders seen on the welcome page to a new icon called "Insertable objects", which will open a tab shown and described below:

The tab will open to the data model used to create the report. By clicking on the ⊕ icon, on the left, users can attach the report to a specific data model. A pop-up box titled *'Open File'* will appear. Users should navigate to the *'Data Models'* folder and select their preferred model within a subject area:
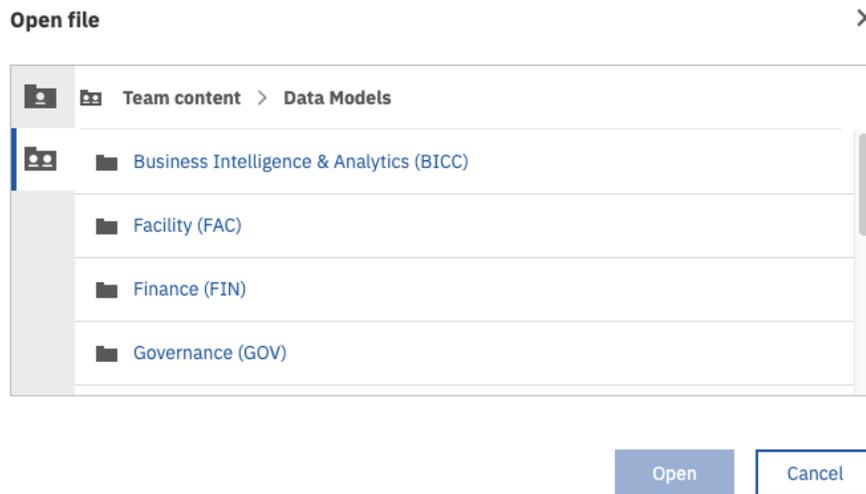
Click on the '*Open*' button. The selected model will open next to the '*Data*' folder.
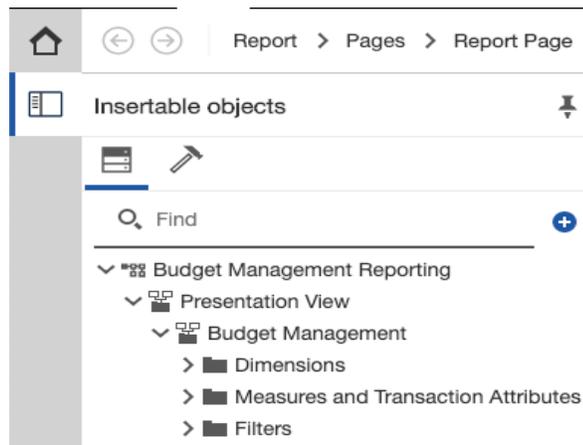

Next to the data folder you will find the toolbox folder. The Toolbox folder will open a menu of available options for changing your report layout, adding complex calculations or visualizations, and much more.
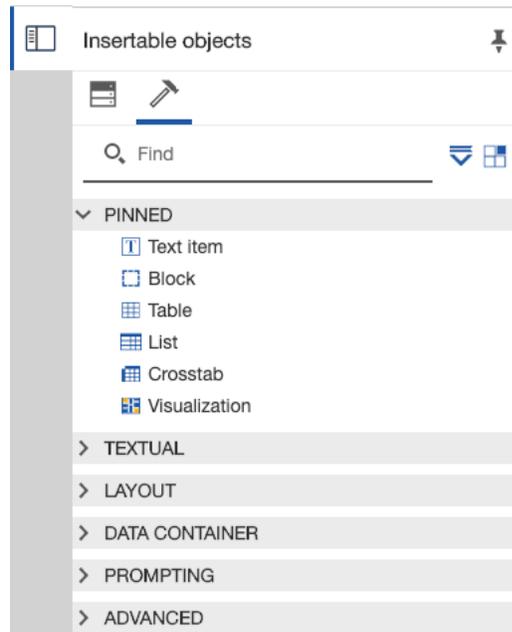
The navigation tree at the top of the screen will allow users to navigate between all report output pages and queries.

Clicking on the first element of the tree will expand the full report structure and allow you to quickly navigate to any page or query in your report:
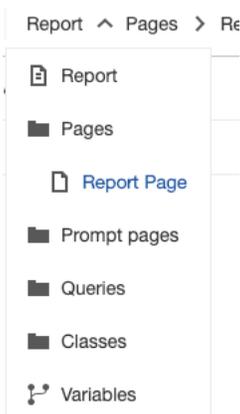
In order to add a new page, click on the "Pages" folder and then click on the ⊕ icon to its immediate right.
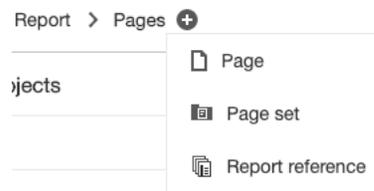
In order to add a new query, click on the "Queries" folder and then click on the ⊕ icon to its immediate right.
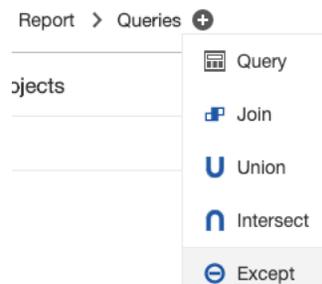
Once users have selected the data model they would like to use to build their report, they need to click on the ⊕ icon on the right hand side of the page. When clicking on this icon, users will choose the desired report object:
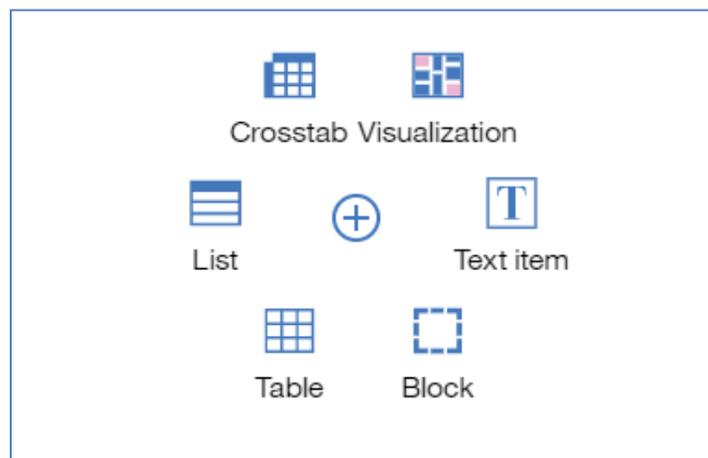
Crosstab and List reports are the most common selections. A Crosstab report resembles a pivot table in Excel, with rows and columns for dimensional attributes and a measures section where they intersect. A List report is similar to an Excel spreadsheet.

Once users select the report object, they can begin building a custom report using the selected data model.

3.4.1 Creating a Crosstab Report

After selecting the option for Crosstab, users will be prompted to assign a name to their report:
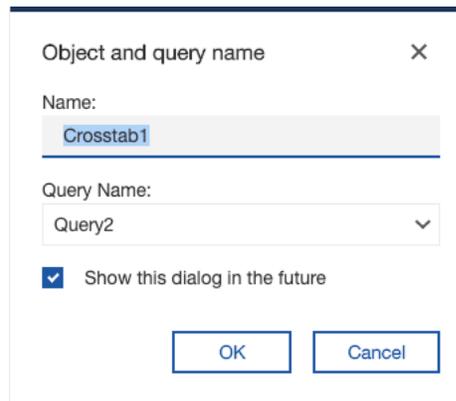

To build a report, dimensions from the data hierarchies must be added to the *Rows* and *Columns* areas on the crosstab template. Begin by expanding the folders to expose the dimensions and measures; users can add new content to the report template by dragging the desired elements from the model on the left to the report template on the right.
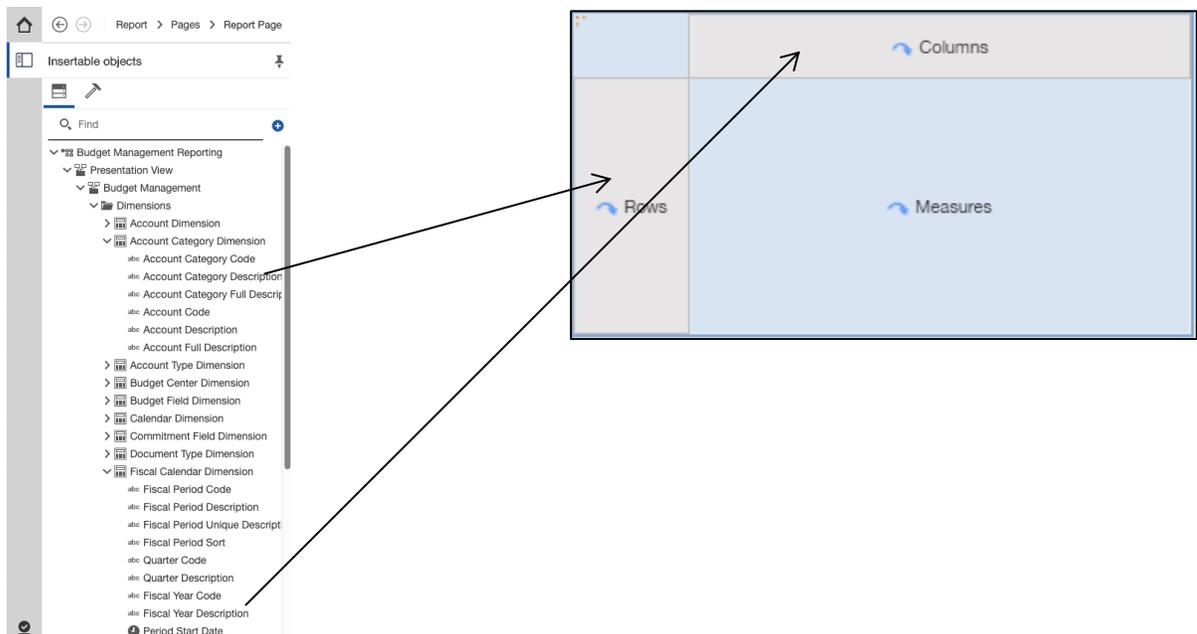
After selecting the dimensions and dragging them into the report, select the measure or measures to be displayed. Multiple data points can be selected by using the Ctrl and/or Shift keys.
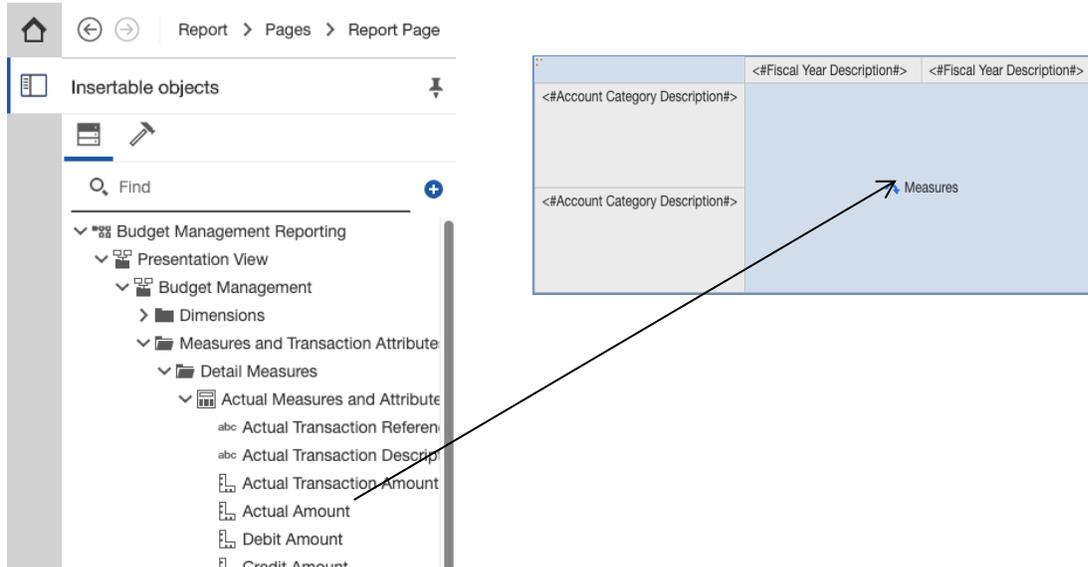
When creating a report, the default view is called the 'Page Design' mode. This mode shows the dimensions and measures that are already part of the report, but does not show the actual data. An example of a report opened for editing in Page Design mode is shown below:


To build the report while still seeing the output, users can switch to the 'Page Preview' mode by clicking on the 'Page Design' icon Page design ˅ on the upper right side of the screen. This will switch the view to the output defined using the selected dimensions and measures.

3.4.2 Creating a List Report

To build a List report, use the same initial steps outlined in the section above, but select *'List'* instead of 'C*rosstab'* when adding a report template. Just like a Crosstab report, dimensions from the list must be selected and dragged from the data model to the report template.
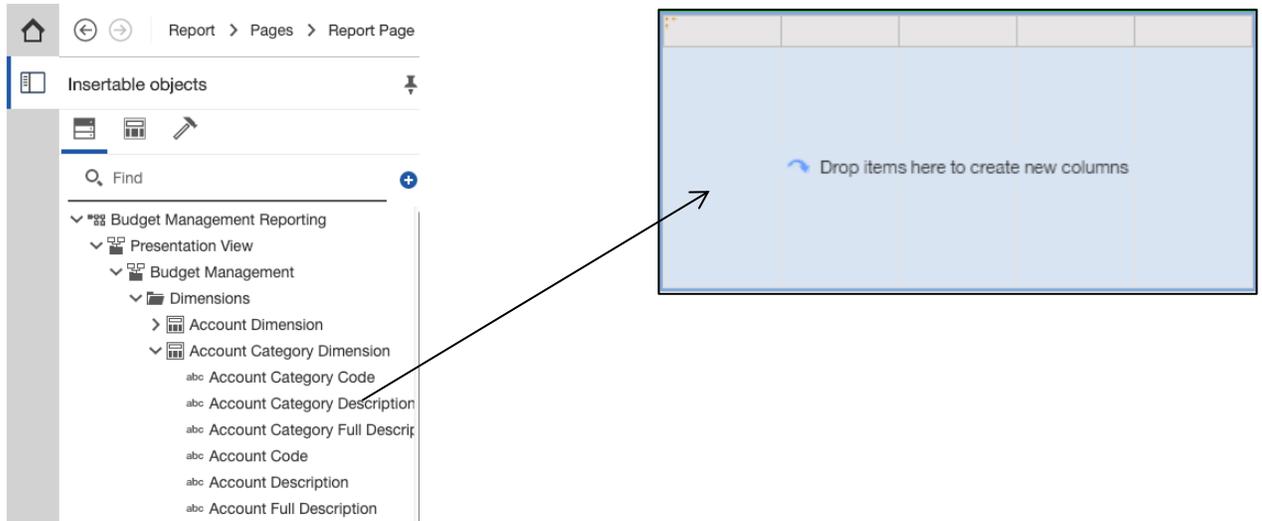

To add additional attributes from a dimension, select the item and drag it over to the report template. When the item hovers over the right edge of the previous attribute, users will see a flashing vertical line. When this line appears, it is safe to drop the new attribute.
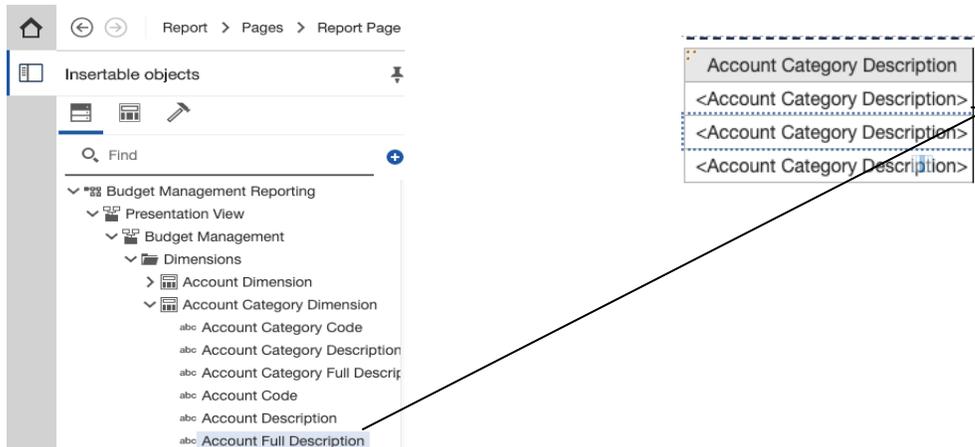
Selected measure(s) are dragged into the report columns, just like dimensions.
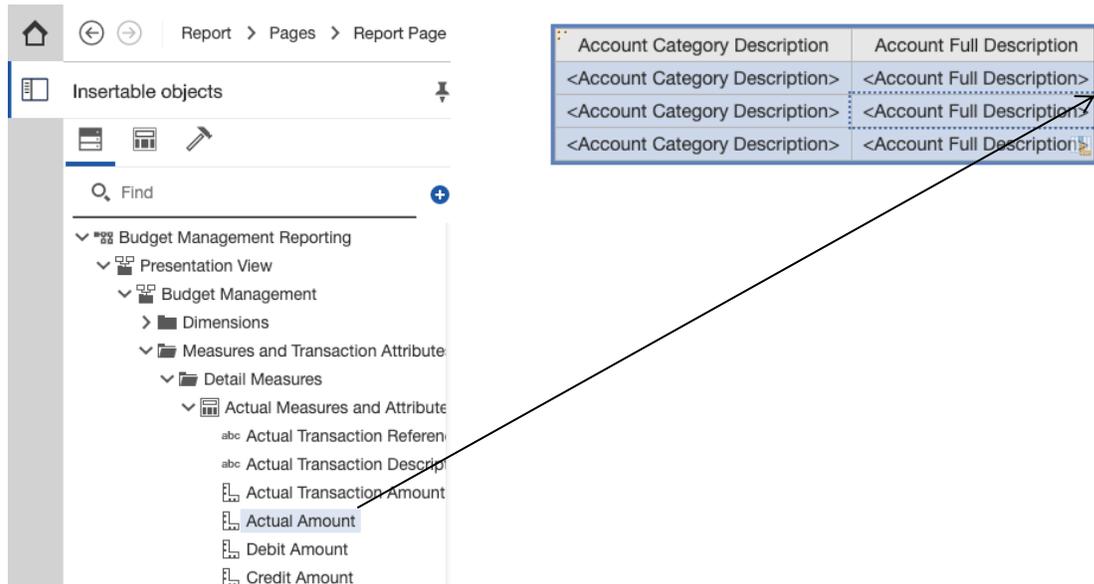
The resulting report resembles an Excel spreadsheet.

3.5   Modifying an Existing Report

Users may modify an existing custom report by clicking the ellipsis to the right of the report name and selecting '*Edit Report.'*


Additionally, if the report has been run in HTML format and is on your current screen, you can click the *'Edit in Authoring'* icon on the upper left side of the toolbar.

Once your report is open for editing, the default view is called the 'Page Design' mode. This mode shows the dimensions and measures that are already part of your report. An example of a report opened for editing in Page Design mode is shown below:

		<#Fiscal Period Unique Description#>						<#Fiscal Period Unique Description#>					
		<#FY Adopted Budget Amount#>	<#FY Adjusted Budget Amount#>	<#Actual Amount#>	<#YTD Actual Amount#>	<#YTD Commitment Amount#>	<#Available Balance Amount#>	<#FY Adopted Budget Amount#>	<#FY Adjusted Budget Amount#>	<#Actual Amount#>	<#YTD Actual Amount#>	<#YTD Commitment Amount#>	<#Available Balance Amount#>
<#Account Type Full Description1#> ▲	<#Account Full Description#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	Summary	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
Summary		<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

To edit your report while still seeing the output, users can switch to the 'Page Preview' mode by clicking on the 'Page Design' icon Page design ˅ on the upper right side of the toolbar and then switching to 'Page Preview'. An example of a report opened for editing in Page Preview mode is shown below:
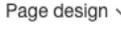
		Nov 2014					
		FY Adopted Budget Amount	FY Adjusted Budget Amount	Actual Amount	YTD Actual Amount	YTD Commitment Amount	Available Balance Amount
75 - Telephone Instrument/Credits	73042 - Telephone-Instrument Charges	$7,410.00	$7,410.00	$767.00	$3,867.00	$0.00	$3,543.00
	Summary	$7,410.00	$7,410.00	$767.00	$3,867.00	$0.00	$3,543.00
Summary		7,410	7,410	767	3,867	0	3,543

In either Page view, once the report has been opened for editing, the menu options on the left hand side of the page will change from the content folders seen on the welcome page to a new set of icon called "Insertable objects", which will allow you to add components to your report. These components are described below:

The insertable objects icon will open the data model used to create the report. By expanding the folders to expose the dimensions and measures, users can add new content to the report template to the right.
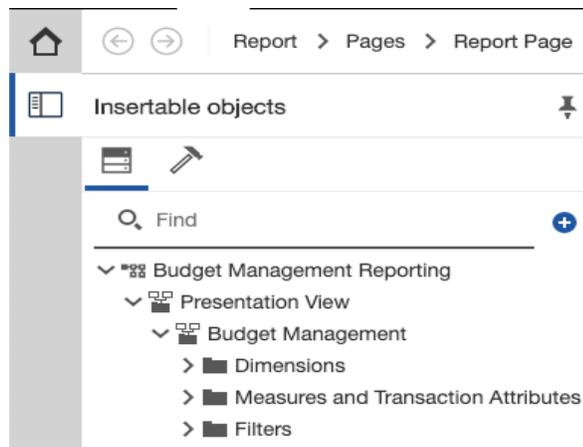

Any new attribute, whether it is a dimensional item, measure, calculation, etc. can be added to an existing report using the following steps:

1) Select the item to add to the report by clicking on it with your left mouse button.

2) Holding down the left button, simply drag the item onto the report template until you see the flashing black line between two solid lines:
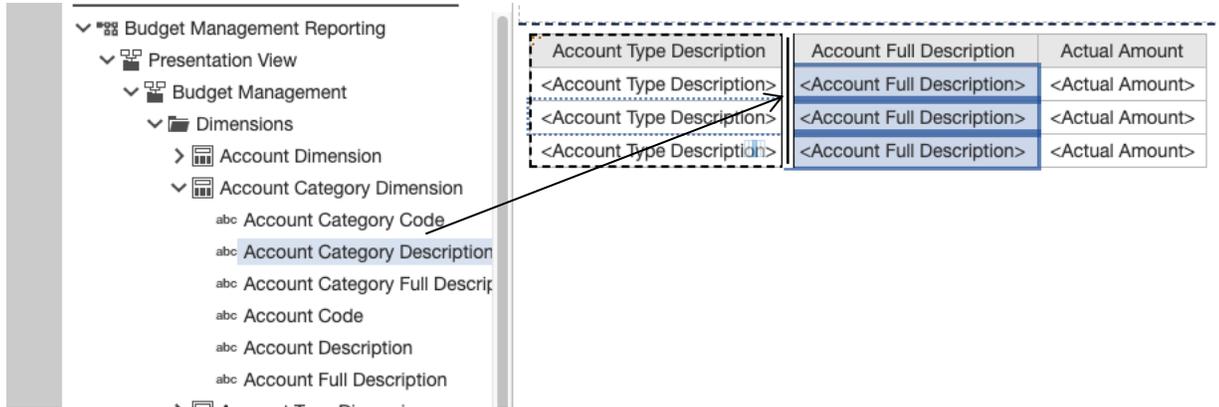
3) Release the button and the new item appears in the desired location.

The revised report shows the additional attribute:

The Toolbox, Pages, and Queries options described in the previous section are also available for modifying report content.

4. Reporting Building Features

4.1 Filtering the Report

Filters can be added to focus a report on certain values or context for specific data items. Users can add a filter by clicking on any data attribute that has been dragged on to the report template. When this is done, a toolbar will appear with a series of icons. In the example below, the column for '*Account Category Description*' was selected:
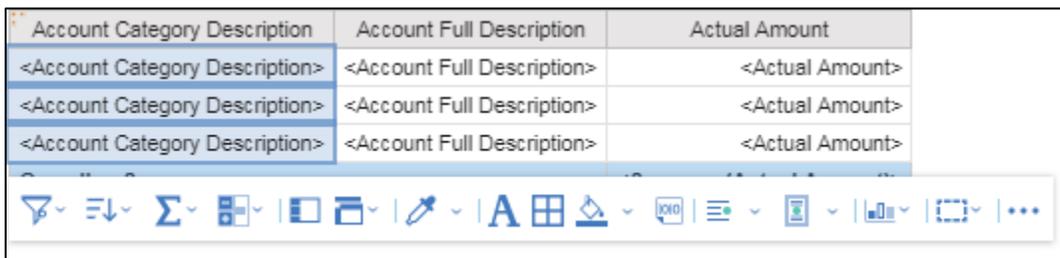
On the toolbar, the Filter icon is the left-most option of the toolbar. Users can click on this icon and select the '*Edit Filters*' option,
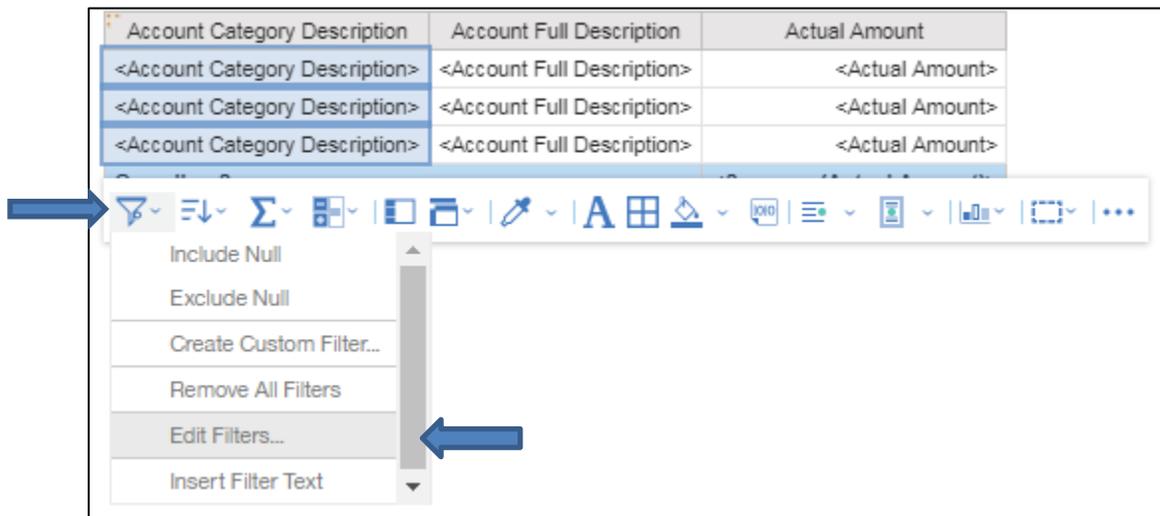
Clicking on *Edit Filters* will bring users to a menu page where they can select the filter's parameters by clicking the *Add* button ⊕ located on the lower-left corner.
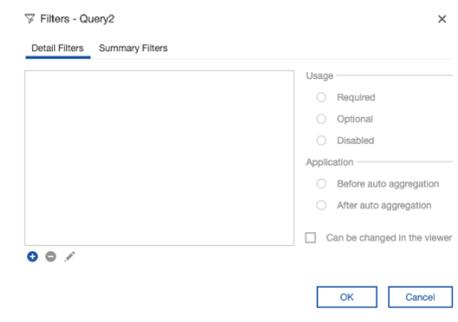
After clicking on the *Add* button, select the desired attribute to apply the filter to and click '*OK.'*
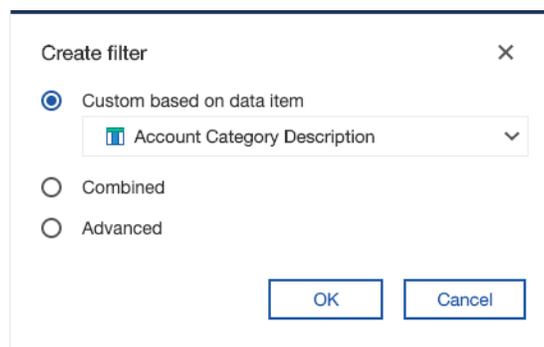

To add a filter, simply check off the data item(s) on the left pane. Click '*OK.'*
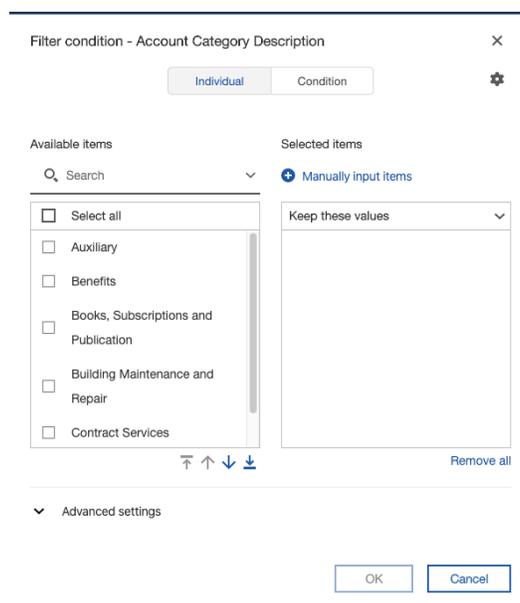
If using a cube-style data model, such as the Budget Management Analysis model, a second option is to use the Context Filter area, which is located just above the report itself.

Users can create filters here by dragging the desired member or members to the Context Filter area, as shown below. Multiple filters can be applied at one time.
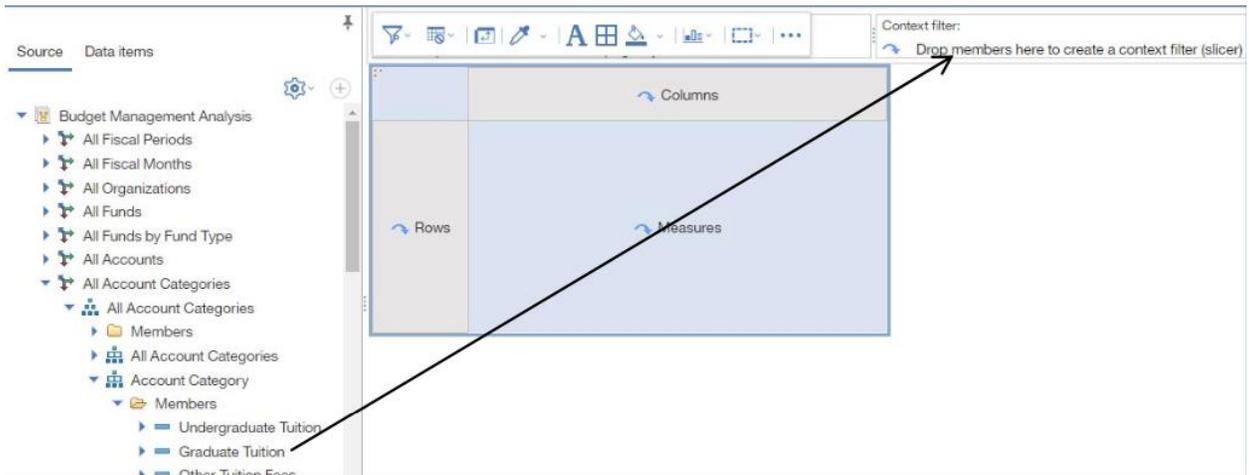

4.2 Nesting Dimensions

Users can display more detailed numbers by "nesting" additional dimensional attributes or measures next to previous selections. This enables deeper analysis within the report while also being able to see the bigger picture. To utilize the nesting option, simple drag the new dimension next to the original until a black line becomes visible, inserting the new dimension.
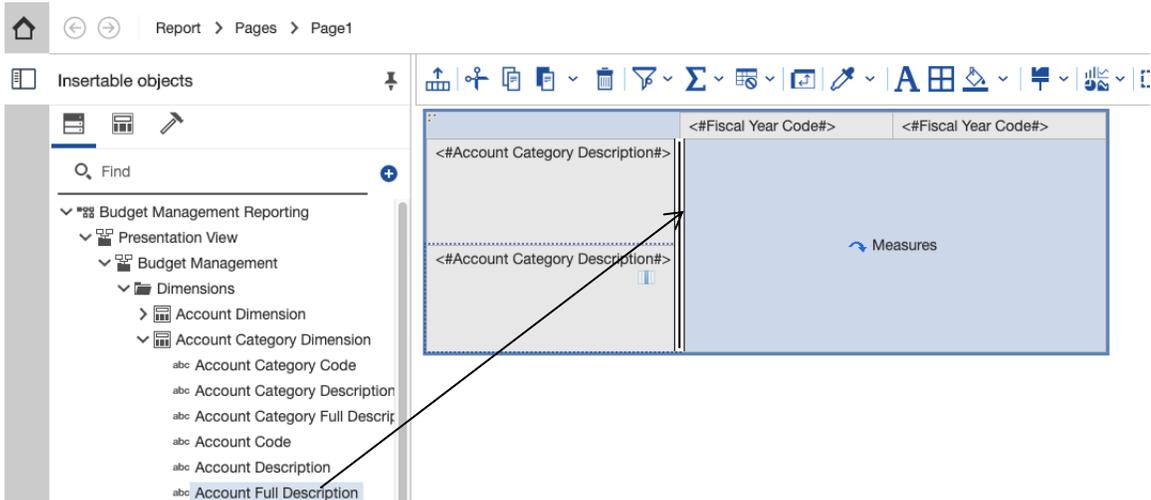
4.5 Saving a Report

Once users are finished creating and organizing a report, they can save it by clicking on the *Save* icon, 💾, and select the location where the report will be stored. For personal reporting, they can save it to their personal area under '*My Content*' for future use. Alternatively, they can save it to the *'Shared Content'* folder within the 'University Advancement Content' folder. The latter will make the report publicly available to all Cognos Advancement users to run and edit.
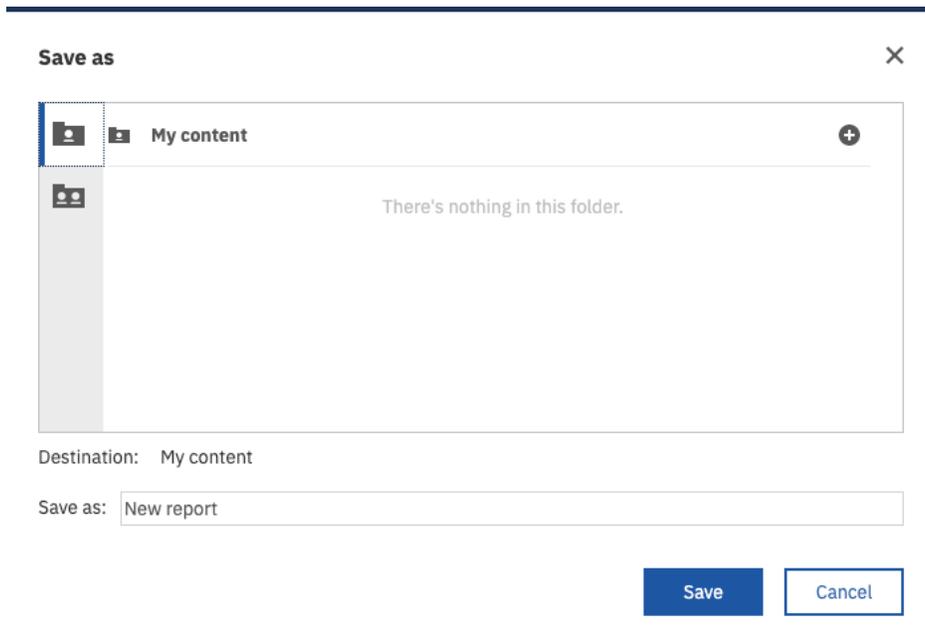
4.6 Additional Toolbar Functionality

Most formatting and sorting icons on the toolbar serve the same functions as represented in Word or Excel, such as Sorting, Copy, Cut and Paste, Font, Center, and Undo/Redo. Cognos-specific functions from the toolbar are briefly explained in the following chart:

Icon	Icon Name	Definition
▶	Run Report	As previously described, run reports using different outputs
	Suppress	Removes empty cells in a report and eliminates extraneous rows and columns
Σ	Summarize	Create a summary row with the specified aggregate type
	Insert Calculation	Add a simple, calculated field or create a custom calculation by following the prompts
	Group/Ungroup	Group or ungroup results based on selected dimension
	Swap Rows and Columns	Transfer crosstab rows and columns to columns and rows

	Section/Unsection	Groups results based on a selected dimension and creates a section break using the dimension as the heading