TM1 User Training Guide

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About TM1

What is TM1?

- High Performance OLAP Engine suited for Planning, Budgeting, Forecasting and Data Analysis

- Designed for "Write-back", what-if scenario modeling

- 64 bit, in-memory (RAM) multidimensional server

- All TM1 objects reside in memory, processing time is very fast, In Memory Analytic (IMA).

- When objects are saved, only the leaf-level element is saved. Consolidations and calculations are not stored, they are performed as required.

In summary, TM1 combines a powerful, multidimensional database engine, MS Excel add-in, Server Explorer front end, TM1 web front end, and Turbo Integrator, an Extract Transform and Load (ETL) tool. This combination of utilities allows users to access multidimensional data quickly and efficiently, regardless of the source.

CHAPTER 1: Overview of TM1 – How Data Flows

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Objectives

- ▪ Discuss Dataflow
- ▪ How data is entered
- ▪ Review centers

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Dataflow Diagram
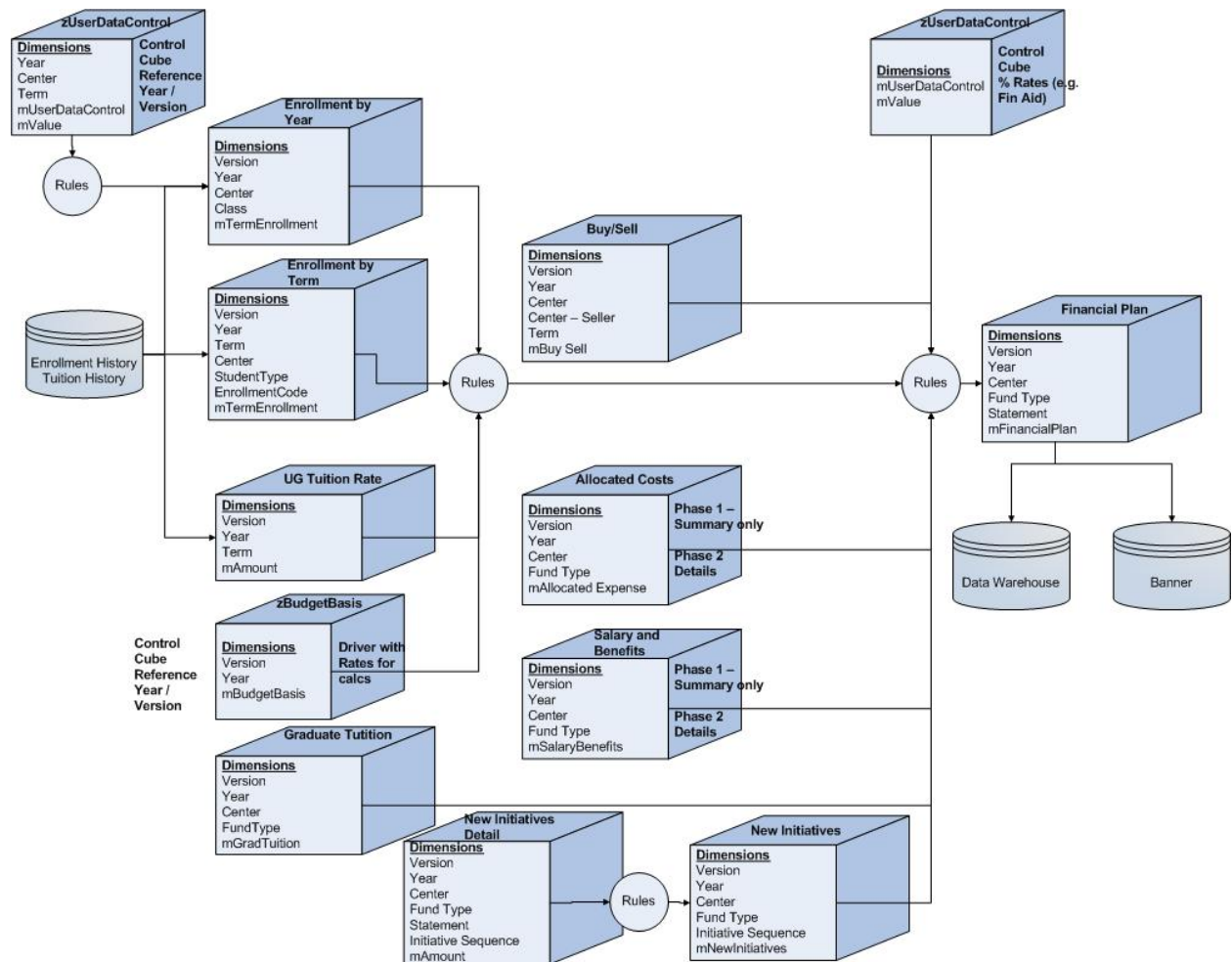
Each of these blocks are referred to as Cubes. Cubes are made up of the Dimensions noted in the above diagram. A cube can be thought of as a Rubix Cube, with each face representing a different dimension. In the cube below, the Yellow face could represent all Years. The Red face is RC's, CC's. The Blue face is Statement lines. The intersecting cubes will store values – dollars or headcounts, etc.
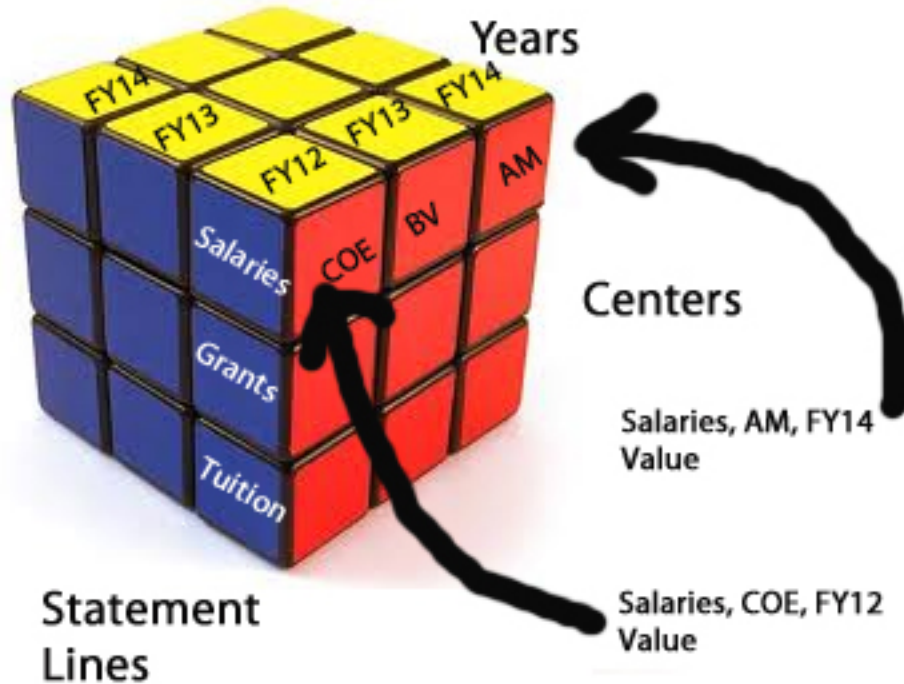
Our cubes are not limited to three dimensions, several have more – such as Enrollment Term, Year, Version, etc. The important thing to note is that there is an intersection of all of the dimensions, and that is where the numerical values are stored.

Data Entry and Flow

As users update the data within Contributor, the information will propagate from detail to summary tabs. For example, when a key change is made within the "Enrollment by Term" data set, "Financial Plan Academic" will also experience an updated change in values. Essentially, there is a designated data flow as to how the detail values affect summaries within the aggregate data.

User Data Control Cube

- This cube contains values which are used for calculations, e.g. Benefits % for Full time Salaries. These rates are maintained by the Finance office.

UG Tuition Revenue

- Tuition Revenue is driven by the Tuition Rate and Enrollment Headcount. The input process involves several steps
- EMSA Ranges are provided for each college for New Freshmen, Fall Transfers, and January New.
- Retention rates for Returning Students are calculated
    - Colleges adjust the headcounts for New Freshmen, Fall Tranfers and January New. Retention rates may also be overridden.
    - Based on tuition rates which are entered by Finance office, Tuition Revenue is calculated based on Headcount and rate
- Center level user contributes buys to the Buy/Sell cube
    - Sells are automatically calculated based on the number of Buys
    - Note that colleges do not enter Sells, they are automatically calculated based on the Buys from other colleges.
    - Rules calculate the UG tuition which flows into the Financial Plan as Tuition Revenue In and Tuition Revenue Out

Allocated Costs

- Calculations made outside TM1
- Individual Centers do not enter this information – it is only visible within the Financial Plan tabs.
- Summary data entered by Budget contributor and flows into the Financial Plan

Salary & Benefits

- FT, PT, Student Graduate Assistants (SGA's) and Temp Help salaries are entered by a Center contributor
- Benefits are calculated automatically based on rates stored in a configuration cube.
- Values flow into the Financial plan
  - Separate cube in preparation for an additional phase where salary details can be added to the plan

New Initiatives

- Center level users update initiatives into the New Initiatives Details cube
- Detail cube mimics the rows and columns on the Financial Plan. It is possible to enter a description for each line
- Up to ten detail initiatives can be added per center
- All lines from Detailed initiatives roll up to a summary plan – 1 line per initiative
- New Initiatives are approved in their entirety on the New Initiatives Summary tab.
- Approved initiatives roll into the Financial plan as summarized revenue, expense and bridge funding

Graduate Tuition

- Center level users add data that flows into the Financial Plan

General

- Contribute at Fund Type Level
- Data rolls/sums to entire center
- Data also rolls up to the Executive and University levels

CHAPTER 2: Workflow

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Objectives

- View the Workflow environment
- Determine Workflow object accessibility

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TM1 Workflow

TM1 incorporates workflow functionality. This allows a Submission, Review, and Acceptance function for each budget. This could be done by users with various responsibility levels – in practice at Northeastern it is likely that a Contributor may accept their own work based on conversations with others. In this case, the workflow process helps everyone track the status of the Contributor budgets.

What is the Workflow Area?
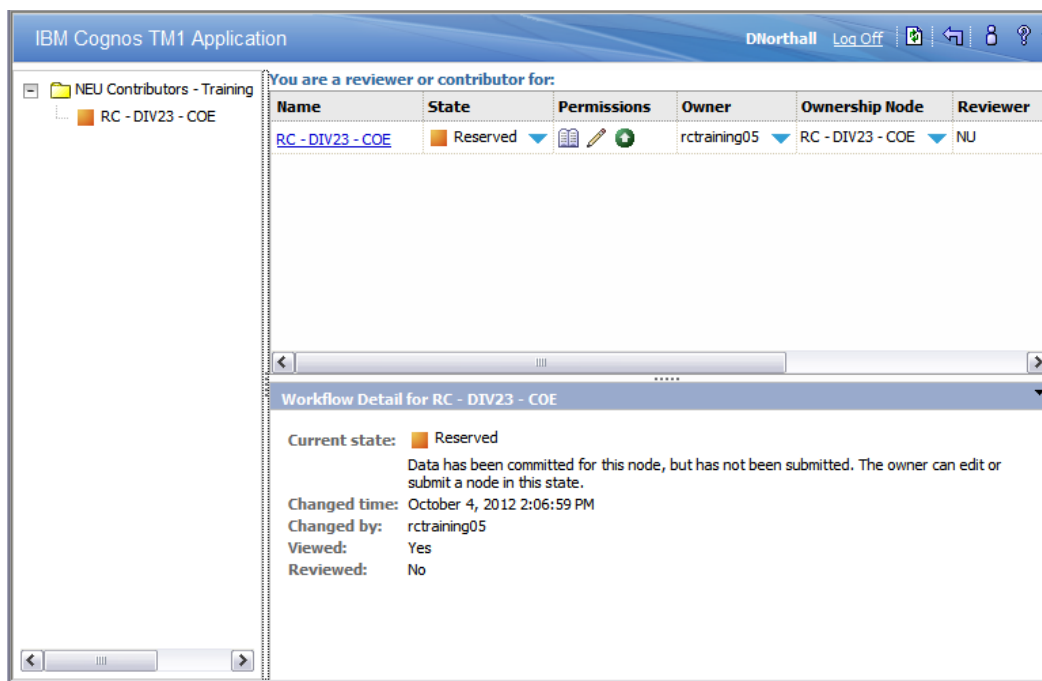
The Workflow area contains three panes:

1. The left hand pane provides a Tree hierarchy of the centers that are available to the contributor. This could be an individual Center, or rollups at the EXEC or NU levels.
2. The upper right pane contains a blue link to enter the Contributor application for that Center. It also shows its state (e.g. Available, Submitted), who owns it (is currently working on that budget), and any comments.
3. The bottom right pane provides more detailed information for any item that is selected in the top right pane.

Commit Data

When a Contributor clicks the Commit button, the displayed data becomes public, and is available for others to view.

Review and Approve

Once the data set is available for review and approval, it will be submitted to TM1 as part of the available data.

Approval Levels

- ▪ ***Center – RC, CC or Non-academic RC***
- ▪ ***Executive Level – EXEC01 – EXEC09 Executive levels***
- ▪ ***University Level – NU – the entire University***

When a data set is submitted it is closed for further data entry by the Contributor. Essentially behind the scenes the data set becomes locked from any additions. The data can be unlocked if the Reviewer rejects the data set.

CHAPTER 3: TM1 Navigation and Contributor

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Objectives

- Navigating within TM1
  - o Logging In
  - o TM1 Applications
  - o Contribution Page
  - o Contributor Tabs
- View data within Cube
- Making Data Changes
- Utilizing Sandboxes

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Login Page
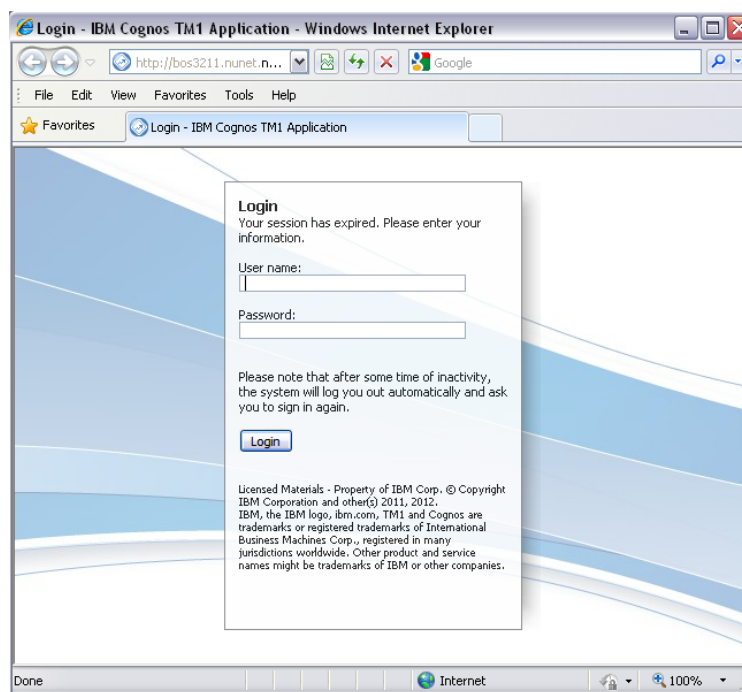
In order to login to the TM1 environment to view applications the following URL is used:

http://bos3211.nunet.neu.edu:9510/pmpsvc

In the training environment, you will be provided an ID and password. In production, you will use your NEU ID and password.

TM1 Toolbar

The TM1 Applications page features this toolbar:

These are the items available to the user:

MBruno	Indicates logged in user name
Log Off	Log off as this user
(icon)	Refresh screen listing – show new applications, application status
(icon)	Return back to the previous page – typically the Application Menu
(icon)	Set User Preferences. Allows changing settings that govern this application page.
(icon)	Help, and Help About Drop down. Displays application help – how to use TM1 in general. The drop down shows the TM1 Version

TM1 Applications
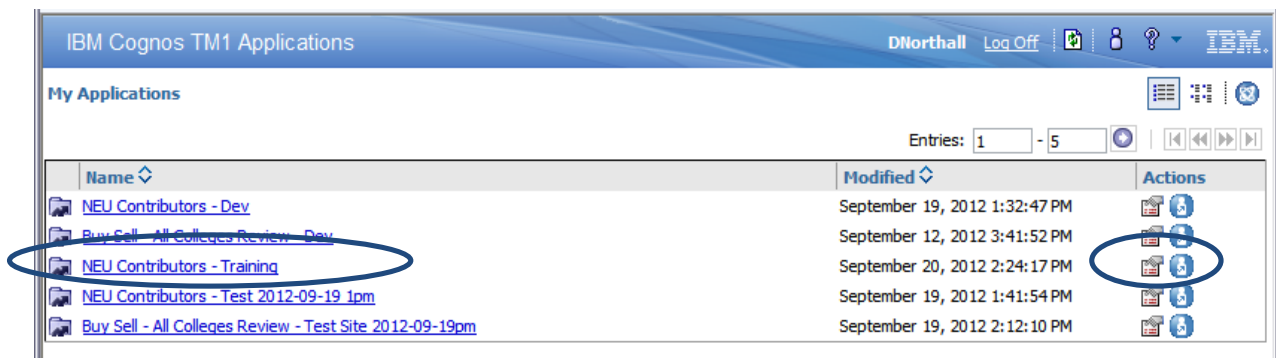
Once the user has logged into TM1 they will view all the applications that are available to them. For training purposes, we will be utilizing the NEU Contributors – Training application.

In order to navigate to the workflow area for an application, simply click on the link for the application or use the "Open TM1 Application" icon under the Actions column.

Workflow and Application Main Page

Now that an Application has been selected, the user is able to view the main Workflow screen. The workflow area is composed of three panes:

- List of available centers
- Links to contributor for a selected center
- Properties associated to the selected center

Within the pane that displays which centers the user is a reviewer or contributor for, additional columns are displayed that include details specific to that center.

Column	Description
Name	TM1 contributor link and actual name of the selected center
State	Current status of the center, whether it is available, reserved, submitted, etc.

Permissions	Available capabilities for user to perform within selected center
Owner	Current owner of the center
Ownership Node	Center that is owned
Reviewer	The user designated to review and approve the selected center
Last Data Commit	The most recent date that the center had been committed
Commentary Status	Details or comments provided by the reviewer in regards to the submission status of the center

TM1 Contributor and Web Application

Landing Page
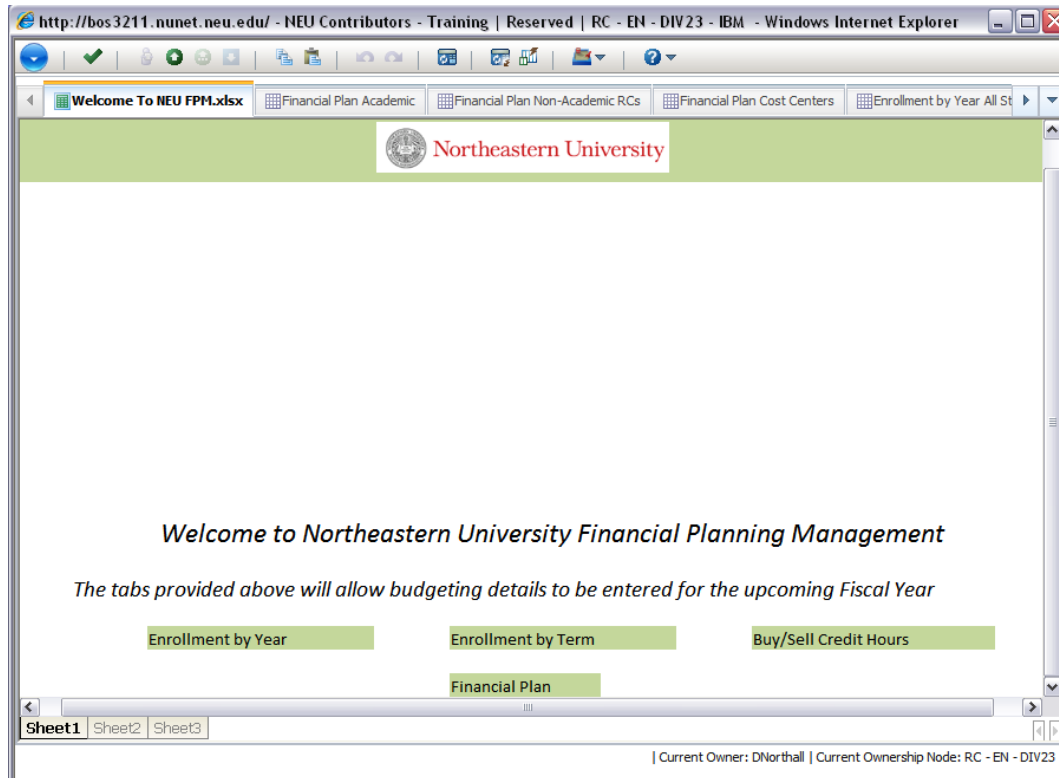
The Landing Page servers as a home page for the TM1 Contributor web application. It is the first tab the user will navigate to upon select a Center. It can also serve as a portal for communicating different events, tasks, and other pertinent details.

This page is referred to as a websheet or rather an Excel spreadsheet that is accessed through the TM1 Web Application.
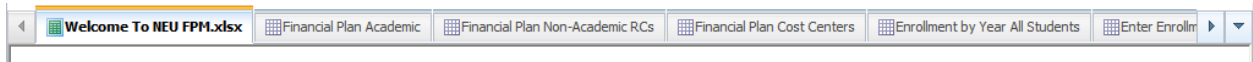
Application Toolbar Icons

| Toolbar Icon	Description
Actions Menu	Contains capabilities to export to Excel or PDF, Reset Data, Reset View, or Close the Application
Commit	Commiting work moves all information from a Private work area or Sandbox to a Public area where all users with access will see common information.
Take Ownership	Lock the center for editing by the user
Submit	Submission is part of the workflow process. Once a contributor is ready to have their work reviewed it is submitted.
Submit Leaf Children	Submits all children at once – e.g. all Centers within an EXEC level
Reject	Reviewers have the option of either Approving or Rejecting a Submission. Once a Contributor Submits their budget, it is locked for entry. It will continue to be locked if it is approved. It is only unlocked if it is Rejected. A Rejected plan may be reworked by a Contributor.
Copy	Copy an object to the clipboard
Paste	Insert the copied object to the selected location
Undo	Remove the previous action
Redo	Perform the action prior to the use of the Undo button
Swap Rows and Columns	Within Contributor alter the rows and columns so that the rows become the columns and the columns become the rows
Recalculate	Used to repopulate totals or summaries based on data changes
Suppress Zero Values	Hide zero values in rows or columns
View Grid	View the data in a crosstab or grid format
View Chart and Grid	View the data both in a crosstab and chart formats
View Chart	View the data in a chart format
Chart Properties	Alter the chart type, color palette, legend, 3D view and other miscellaneous chart properties
Help	Utilize Help Menu for the Application Web or view the Help document and system details about the TM1 Application Web product

Using TM1 Contributor Pages

Tabs

| ◀ | **Welcome To NEU FPM.xlsx** | Financial Plan Academic | Financial Plan Non-Academic RCs | Financial Plan Cost Centers | Enrollment by Year All Students | Enter Enrollm ▶ ▼ |

Within this view of the application, all contributor tabs are available across the top below the Contributor toolbar. Each tab corresponds to an application within the Data Flow diagram illustrated in Chapter 1.

Here is the list of available Contributor Tabs:
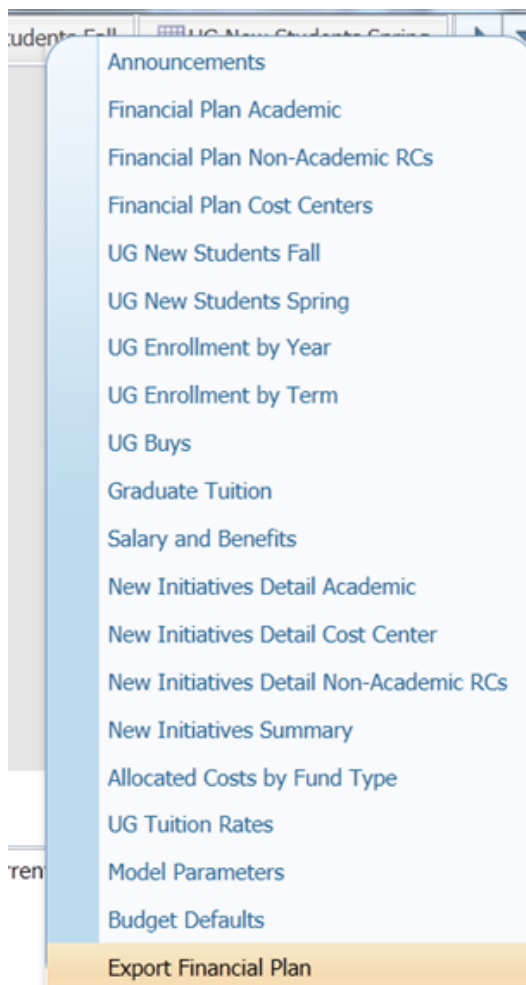
These tabs correspond to the items in the Data Flow Diagram. They will be covered in more detail in a later section of this manual.

To explain how the tool works, this section will use the Salary & Benefits by Fund Type tab.

Salary and Benefits Tab

	FY10 Budget	FY11 Budget	FY12 Budget	FY13 Budget	FY14 Budget	FY15 Budget	FY16 Budget
Salary - FT Faculty	$0	$14,794,038	$16,373,892	$17,398,540	$0	$0	$0
Salary - FT Staff	$0	$4,571,658	$4,950,004	$5,715,561	$0	$0	$0
Salary - PT Faculty	$0	$492,575	$492,575	$492,575	$0	$0	$0
Salary - PT Staff	$0	$316,655	$213,236	$213,236	$0	$0	$0
Salary - Student Graduate Assistants (SGA)	$0	$2,367,223	$2,412,571	$2,204,798	$0	$0	$0
Salary - Temp Help	$0	$0	$0	$0	$0	$0	$0
Total Salaries	**$0**	**$22,542,149**	**$24,442,278**	**$26,024,710**	**$0**	**$0**	**$0**
Benefits - Full Time	$0	$5,770,977	$6,567,760	$7,280,942	$0	$0	$0
Benefits - Part Time	$0	$242,999	$238,556	$222,662	$0	$0	$0
Benefits - Temp Help	$0	$0	$0	$0	$0	$0	$0
Benefits - Adjustment	$0	$0	$0	$0	$0	$0	$0
Total Benefits	**$0**	**$6,013,976**	**$6,806,316**	**$7,503,603**	**$0**	**$0**	**$0**
Total Salary and Benefits	**$0**	**$28,556,125**	**$31,248,594**	**$33,528,313**	**$0**	**$0**	**$0**

Please note, that within the individual tabs, like the Salary and Benefits tab, the user will see cells containing gray and white background colors.

The GRAY cells are not available to be edited or altered in this specific tab or for the specific user currently logged in. This could be because of three reasons:

- Contributor has not taken ownership, or the budget has been Submitted
- Security settings,
- Cell is based on a calculation
- View is not at the lowest level of a dimension – e.g. the view is at the EXEC02 level.

In the Salary screen above, past years are grey because security settings don't allow changes to the past. The Benefits sections is gray in years FY13-FY16 because Benefits are calculated based on the Salary entries. If the view was at the EXEC level, all cells would be gray because it is not the lowest level of the Center dimension.

The WHITE cells can be altered to reflect the user's specific amounts that will be submitted to alter the data sets.

Taking Ownership
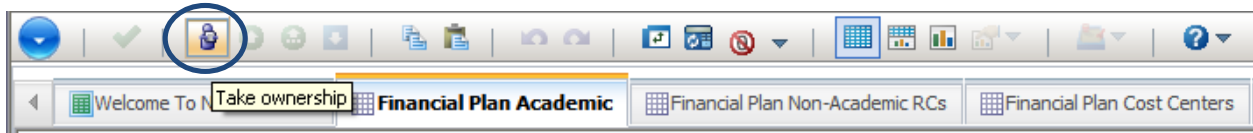
Within the Application Toolbar in order to interact with a given center, the user must take Ownership. Once they take ownership, the user is able to make changes to the individual tabs that are part of the center which eventually will need to be submitted for approval. Ownership is given for the entire application – it is not tab-based.

Once ownership is claimed, the status or State of the Center changes based on the user.

Making Data Changes and Cube Impact

Cube Data Display

	FY10 Budget	FY11 Budget	FY12 Budget	FY13 Budget	FY14 Budget	FY15 Budget	FY16 Budget
Salary - FT Faculty	$0	$14,794,038	$16,373,892	$17,398,540	$0	$0	$0
Salary - FT Staff	$0	$4,571,658	$4,950,004	$5,715,561	$0	$0	$0
Salary - PT Faculty	$0	$492,575	$492,575	$492,575	$0	$0	$0
Salary - PT Staff	$0	$316,655	$213,236	$213,236	$0	$0	$0
Salary - Student Graduate Assistants (SGA)	$0	$2,367,223	$2,412,571	$2,204,798	$0	$0	$0
Salary - Temp Help	$0	$0	$0	$0	$0	$0	$0
Total Salaries	**$0**	**$22,542,149**	**$24,442,278**	**$26,024,710**	**$0**	**$0**	**$0**
Benefits - Full Time	$0	$5,770,977	$6,567,760	$7,280,942	$0	$0	$0
Benefits - Part Time	$0	$242,999	$238,556	$222,662	$0	$0	$0
Benefits - Temp Help	$0	$0	$0	$0	$0	$0	$0
Benefits - Adjustment	$0	$0	$0	$0	$0	$0	$0
Total Benefits	**$0**	**$6,013,976**	**$6,806,316**	**$7,503,603**	**$0**	**$0**	**$0**
Total Salary and Benefits	**$0**	**$28,556,125**	**$31,248,594**	**$33,528,313**	**$0**	**$0**	**$0**

Here is the default view of the Salary & Benefits tab.

Filter Data / Change Context

To change the Context of the cube view within the given Tab, the user can use the Rows, Columns, and Context area above the data display to display different filters.

For example, if the user wanted to view the context for a different Fund Type, they could simply click on the drop down for the corresponding field, in this case Fund Type and make the appropriate selection. The view has started with CFU (FT 11) selected.

IMPORTANT TIP – **always** check the Context filters at the top of the page – if numbers are entered into FT 18 rather than FT 11, they won't end up where you'd like! This is true for all dimensions, but particularly those in the "Context" section.

Subset Editor

The subset editor allows the user to change the display of the data by selecting different elements within Subset Editor dialog box. Note that it has two modes depending on where it is launched from. When launching from the Rows or Columns area, it shows as below and allows selection of a different subset (other than "Budget Years" shown below), or to select individual elements by selecting or removing elements (e.g. only showing year FY12).

When the Subset Editor is chosen on a Context dimension, the default behavior is to allow selection of only a single element from the drop-down box. If more interaction with Subsets is desired, click on the Pencil icon at the lower right of the drop down box to open the full Subset Editor.

Advanced Usage of the Subset Editor

The complete Subset Editor is shown below:
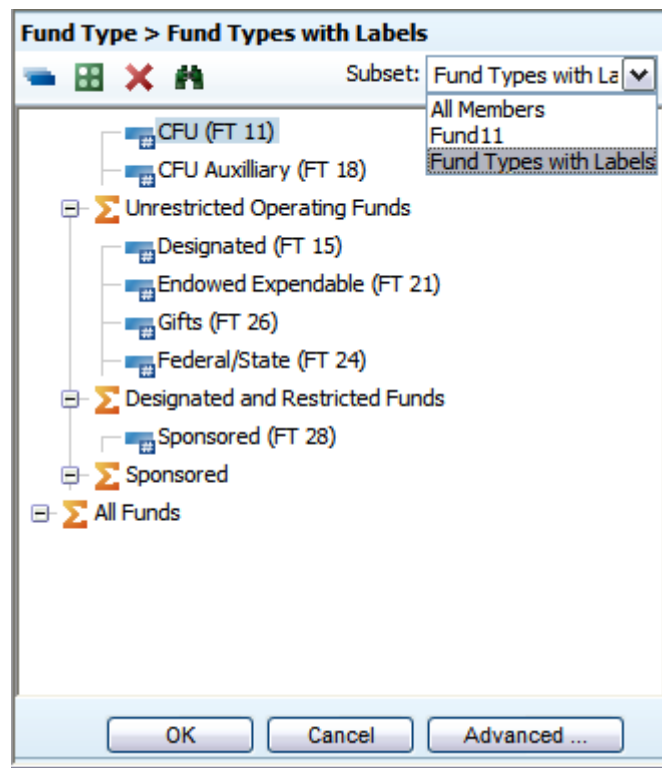
The Subset Editor displays elements from the dimension, as well as a Toolbar. The items in the toolbar are:

Icon	Description
	Subset All – Shows all elements in the dimension, even if they are not included in the current subset. This is the master list of dimension

	items.
	Keep Selected Elements – include the selected elements in the display. This can only be used if the dimension is included in the rows or columns, not the Context area.
	Delete Selected Elements - exclude the selected elements in the display. This can only be used if the dimension is included in the rows or columns, not the Context area.
	Find in Subset – look for particular items within the subset
	Subset choice – Predefined Subsets have been created by the TM1 Developers. Subsets may be defined to include specific items, such as FY13, FY14, FY15, or a subset of RC's within EXEC02. They may also use different "aliases" for the items in a chosen dimension. The College of Engineering might be displayed as COE, College of Engineering or RC – DIV23 – COE.

The Advanced button opens a more complex dialog box which allows creation of more involved subsets, as well as "custom consolidations".

Using Predefined Consolidations to Show Summary Values

Some dimensions contain predefined aggregations. The Fund Type Dimension has aggregations for Unrestricted and Restricted Operating Funds. Although the Context area only allows the selection of one item, choosing a Consolidated item allows for the display of the sum of both Funds below it.

STEP

1. Choose Unrestricted Operating Funds, and note that the total is displayed.
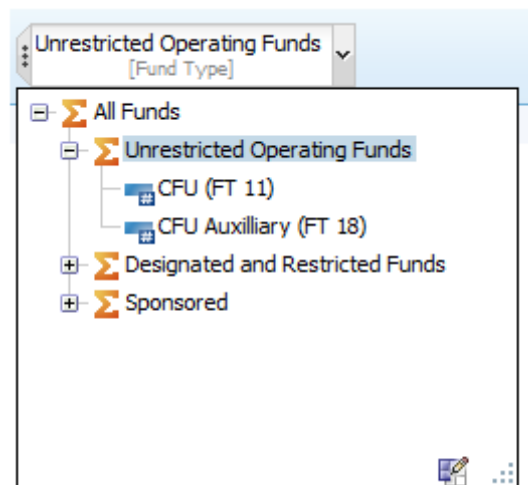
Note that the cells are Gray because the display is no longer at the lowest level of the Fund Type dimension – e.g. a single Fund Type.

Nesting Rows or Columns

The basic use of the TM1 application involves putting one dimension in the rows, another in the columns and showing a value at each intersection. In the figure below, the Salary and Benefits types are in the rows, the years are in the columns, and the values are in the intersections. Often times a display like this is sufficient to answer a question or allow easy data entry.

Rows: Salary and Benefits Input [mSalaryBenefits]	Columns: Budget Years [Year]		Context: RC - DIV23 - COE [Budget Center]	Budget [Version]	CFU (FT 11) [Fund Type]			
	FY10	FY11	FY12	FY13	FY14	FY15	FY16	
Salary - Full Time	$0	$29,000,000	$30,000,000	$0	$0	$0	$0	
Salary - Part Time	$0	$3,000,300	$4,444,000	$0	$0	$0	$0	
Salary - Temp Help	$0	$0	$0	$0	$0	$0	$0	
Total Salaries	$0	$32,000,300	$34,444,000	$0	$0	$0	$0	
Benefits - Full Time	$0	$9,000,000	$9,000,000	$0	$0	$0	$0	
Benefits - Part Time	$0	$222,000	$333,000	$0	$0	$0	$0	
Benefits - Temp Help	$0	$0	$0	$0	$0	$0	$0	
Total Benefits	$0	$9,222,000	$9,333,000	$0	$0	$0	$0	
Total Salary and Benefits	$0	$41,222,300	$43,777,000	$0	$0	$0	$0	

However, there are times when more information would be helpful. In these cases, it is possible to see additional data by "nesting" a new dimension within the Rows or Columns. In the figure below, the Version dimension has been merged into the display – note the appearance of Budget and Actual below each year.

Rows: Salary and Benefits Input [mSalaryBenefits]	Columns: Budget Years [Year]		Version - Budget First [Version]		Context: RC - DIV23 - COE [Budget Center]		CFU (FT 11) [Fund Type]									
	FY10		FY11		FY12		FY13		FY14		FY15		FY16				
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual			
Salary - Full Time	$0	$0	$29,000,000	$29,000,500	$30,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Salary - Part Time	$0	$0	$3,000,300	$6,000,100	$4,444,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Salary - Temp Help	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Total Salaries	$0	$0	$32,000,300	$35,050,600	$34,444,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Benefits - Full Time	$0	$0	$9,000,000	$9,123,456	$9,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Benefits - Part Time	$0	$0	$222,000	$401,401	$333,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Benefits - Temp Help	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Total Benefits	$0	$0	$9,222,000	$9,524,857	$9,333,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			
Total Salary and Benefits	$0	$0	$41,222,300	$44,575,457	$43,777,000	$0	$0	$0	$0	$0	$0	$0	$0	$0			

Nesting is done by grabbing the left hand side of a dimension item (the three dots), and dragging it into the Rows or Columns section. Nesting to the left or right of an existing dimension nests the new dimension above or below the existing display.

Data Spreading

TM1 allows a variety of methods of "Data Spreading". This is using a base value and "spreading" it across several cells. For instance, a reasonable way to budget the coming years would be to start with a base number, and increase it for each new year by a specified percentage. TM1 allows for this functionality, plus several other options shown in the figure below.

Data Spreading is not dynamic – once the spread has been completed and the cells are populated, the target cells will not change value if the source cell changes value.

Spread Type	Description
Proportional Spread	Distributes a specified value among cells proportional to existing cell values
Equal Spread	Distributes a specified value equally across the cells in a view
Repeat	Repeats a specified value across cells in a view
Percent Change	Multiplies the current cell values by a specified percentage. The product of that multiplication can then replace, be added to, or be subtracted from the existing cell values.
Straight Line	Populates cube cells by linear interpolation between two specified endpoints
Growth %	Accepts an initial value and a growth percentage. By using the initial value as a starting point, this method sequentially increments all values in a range by the specified growth percentage.
Relative Proportional	Spreads values to the leaves (children) of a consolidation proportional to the

Spread	leaves of a reference cell. The reference cell can be located in the cube from which you initiate spreading or in a separate cube. However, the reference cell must share the same consolidations as the cell from which you initiate spreading.
Relative Percent Adjustment	Spreads values to the leaves (children) of a consolidation by applying a percentage adjustment to the leaves of a reference cell.
	This method increments the values in the leaves of the reference cell by a user-specified percentage. The resulting values are then spread to the leaves of the consolidation from which you initiated spreading.
	The reference cell can be located in the cube from which you initiate spreading or in a separate cube. However, the reference cell must share the same consolidations as the cell from which you initiate spreading.
Repeat Leaves	Copies a specified value to the leaves (children) of a consolidation. When you apply this method, you can copy the value to all leaves of the consolidation or only to those leaves that already contain non-zero values.
Equal Spread Leaves	Distributes a specified value equally across all leaves of a consolidated cell. When you apply this method, you can choose to distribute the value to all leaves of the consolidation or only to those leaves that already contain non-zero values.
Clear	Clears values from cells in a view. You can apply this method to either leaf cells or consolidated cells. When you apply the Clear method to a consolidated cell, TM1 sets all leaves of the consolidation to zero.

General Steps for Data Spreading

1. Select a cell or range from which you want to data spread

You can initiate spreading from a single cell, a single linear range of cells, or a single rectangular range of cells. You cannot initiate spreading from a non-contiguous range of cells, nor can you spread data across multiple individually selected cells or ranges in a worksheet or cube view.

To spread data you must select a linear or rectangular range of cells by using any of these selection methods:

- Drag the pointer across the cells
- Click the first cell in the range, hold down SHIFT, and click the last cell in the range
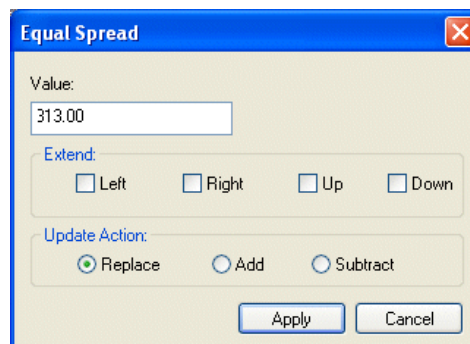
2. Select a data spreading method

After you select the cell or range of cells from which you want to initiate data spreading, you can select a method.

- Right-click the cell or range and in the right click pop-up menu select **Data Spread**.
- Choose a data spread method from the menu.

The Data Spread menu is dynamic -- TM1 displays only the methods that are valid for the cell or range from which you initiate spreading. For instance, the Relative Proportional Spread, Relative Percent Adjustment, Repeat Leaves, and Equal Spread Leaves methods are not valid for leaf cells. When you initiate spreading from a leaf cell, those data spreading method options appear dimmed on the Data Spread menu, indicating that they are unavailable.

3. Specify required values

With most TM1 spreading methods, you specify only the value you want to spread. For example, when you use the Equal Spread method, you must enter one value.


With several spreading methods, you must specify additional values. For example, with the Straight Line method, you specify both a Start Value and an End Value.

4. Select the directions to extend spreading

If you spread from a single cell, you must specify the direction to extend spreading relative to the point of insertion. The cell from which you initiate data spreading is always included in the spread.

Some data spreading methods allow you to extend spreading in multiple directions. These methods display Extend options as check boxes, of which you can choose any combination. For example, the Extend options in the following dialog box extend spreading to all cells above and to the right of the point of insertion.
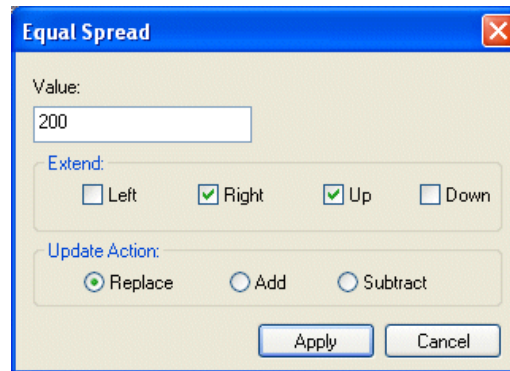

Other data spreading methods allow you to extend spreading in a single direction. These methods display Extend options as option buttons, of which you can select any one. For example, the Extend options in the following dialog box extend spreading to all cells directly below the point of insertion.
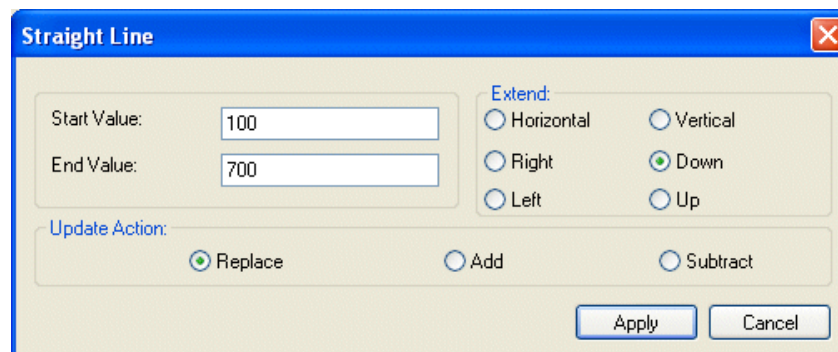
When you initiate spreading from a selected range of cells, the Extend options are disabled and spreading is applied to the selected range.

5. Select an Update Action

The Update Action indicates whether spread values should replace, be added to, or subtracted from existing cell values. For example, the Update Action in the following dialog box indicates that spread values are added to existing cell values.
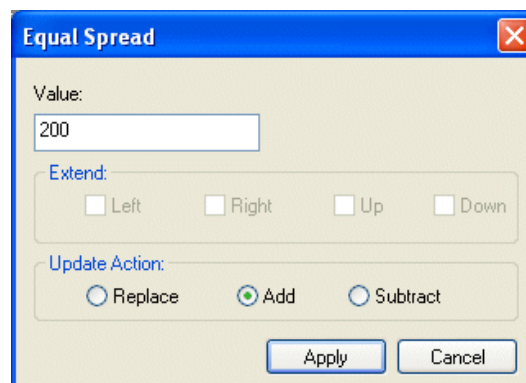
Excluding Cells from Data Spreading

TM1 provides a Leaf Hold feature that lets you exclude cells from data spreading operations. You can use Leaf Hold in the Cube Viewer, In-Spreadsheet Browser, and slice worksheets.

Leaf Hold only prevents a cell from being affected by data spreading; you can still edit held cells manually. The holds apply only to the user initiating the feature; other users can edit held cells.

Holding Consolidation Values Constant

TM1 provides a Consolidation Hold feature that lets you hold the value of a consolidation constant while adjusting the underlying leaf values. For example, you might want to hold the value of 1 Quarter constant while changing the values of the Jan, Feb, or Mar leaves to perform a what-if analysis.

When a consolidation hold is in place and the value of a leaf of the consolidation is changed, TM1 automatically applies proportional spreading to the remaining leaf values so that the consolidation value remains unchanged.

CHAPTER 6: TM1 Application and Navigation

Multi-Tab Display – Tiling Tabs

There are times when it is helpful to view data in two tabs simultaneously – one example is to view the impact on the Financial Plan when changes are made in feeder tabs.

Tiling is accomplished in TM1 by viewing the first tab desired. Then, scroll to the second tab, grab its left side, and drag it to the bottom of the screen until a rectangle is outlined. Release the mouse and both panels will appear. The result will be both tabs tiled on the screen.

The tabs will still be active for the top panel – in the example below, the Financial Plan will remain at the bottom of the screen.

Comments

Comments may be added to any cell in the display. To add a comment, right click on the desired cell and choose the Add Comment selection. Once a comment exists, a small red triangle will appear in the upper right corner of the cell.

Comments do not aggregate up – a comment added for one college does not show when looking at an EXEC02 aggregation.

	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Salary - Full Time	$0	$29,000,000	$30,000,000				
Salary - Part Time	$0	$3,000,300	$4,444,000				
Salary - Temp Help	$0	$0	$0				
Total Salaries	$0	$32,000,300	$34,444,000				
Benefits - Full Time	$0	$9,000,000	$9,000,000				
Benefits - Part Time	$0	$222,000	$333,000				
Benefits - Temp Help	$0	$0	$0				
Total Benefits	$0	$9,222,000	$9,333,000	$0	$0	$0	$0
Total Salary and Benefits	$0	$41,222,300	$43,777,000	$0	$0	$0	$0

Right-click menu: Copy, Paste, Data Spread ▶, Holds ▶, Drill, Add Comment…, Browse Comments…

Zero Suppression

There are times when there is more data on the screen than is useful. If a number of rows or columns are filled with zeroes, then it will be useful to use Zero Suppression to simplify the display.

The Suppress Zero function is controlled by an item on the toolbar:

Suppress Zeros on Rows
Suppress Zeros on Columns
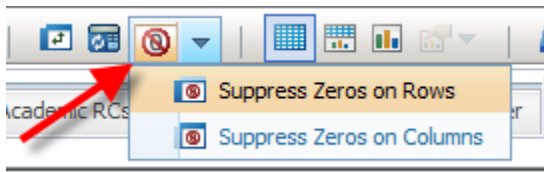
Either Zero Rows or Zero Columns may be hidden -- in order for the hiding to work **all** values in the row or column must equal 0. Clicking the icon itself suppresses Rows and Columns. The drop-down arrow allows suppression of either Rows or Columns.

 If Suppressing hides columns that should be shown, a small non-zero amount, such as "1" may be entered which will reveal the row or column. First add the data, then perform the suppression.

Recalculating

Most views have been set by the application to automatically recalculate after the ENTER key is pressed. When data is first entered, it will be displayed in green. Once the ENTER key is clicked, it will turn blue. Once Committed, it will turn black.

Another way to "save" data is to hit the Recalculate icon in the toolbar. This forces an immediate recalculation based on any entered data.

Saving, Committing, Submitting

Information typed into the TM1 application follows the this lifecycle:

Status	Color	Description
Available	Black/Gray	User has not taken ownership –review mode only
Reserved	Black/White	User has taken ownership
First entered	Green	Not saved anywhere
Saved	Blue	Saved in users private workspace or sandbox
Committed	Black	Saved to public view in TM1
Submitted	Black/Gray	Cells are Gray and locked preventing editing
Rejected	Black/White	Cells are saved, but may be edited
Approved	Black/Gray	Cells are saved and locked preventing editing

Ownership happens when the user clicks the Take Ownership icon. The budget is then **Reserved**.
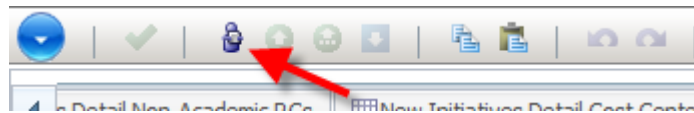
Ownership is **released** on the TM1 Applications page

Saving occurs whenever the ENTER key is pressed, or the Recalculate option is chosen on the toolbar

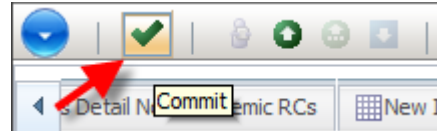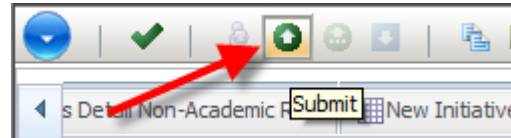
Commiting happens when the Commit icon is chosen on the toolbar.

Submitting happens when the Submit icon is chosen on the toolbar.

Approval happens when a Reviewer **Submits** the budget to a higher level of review

Data Flow in the Financial Plan

As tabs are updated in the TM1 Application, data flows into the Financial Plan. This can be seen in the entry to the Salary & Benefits by Fund Type. Salary and Benefits calculations are done within the Salary area. Once the numbers are calculated, they are transferred to the Financial Plan.

Once the data reaches the Financial Plan, lines may be used for further calculations, such as Credit Card Debt or University Contributions.

If desired, it is also possible to tile more than one tab on the screen at a time – for instance view the Salary & Benefits tab on the top of the screen, and the Financial Plan on the bottom of the screen.

Glossary of TM1 Terms

A

alias

An alternative name used instead of a primary name.

In the Budget Center dimension, there are several aliases for the budget center – RC – BV – Div20 may also be displayed as Bouve College of Health Sciences or simply as BV.

attribute

A property that provides qualitative information about dimensions. In the Year dimension, FY13 might have the attribute of CurrentYear (which would be attached to FY14 in October)

audit log

A log that maintains the history of all commands that modify metadata or configuration data and significant operations, including commands that would have made a change but failed to do so.

C

cell security

The access control level assigned to a single cell in a cube. A cell is an intersection of all of the various dimensions in the cube, for example FY13, BV, Budget, Fall, Enrollment Count.

child

A node that is subordinate to another node in a tree structure. Only the root node is not a child.

In the organizational hierarchy, NU is the root. The EXEC levels are children of NU. The colleges are children of the EXEC levels.

commit

Users may enter data in the TM1 application, and it is automatically saved as private data. When a commit is performed, the information is moved to a public space, where others may view it.

consolidation

In a hierarchical dimension, a consolidation typically represents a summary level. In the Fund Type dimension, there are Operational Funds, which represent a consolidation level.

control object

Any object used to store system information statistics including system performance.

Control objects are used internally to TM1. In the Financial Plan application, we also refer to some cubes as control cubes when they contain User Defined variables, such as the current year.

crosstab

One example of a crosstab is an Excel pivot table. Crosstabs contain one or more dimensions in the rows (e.g. Colleges), and one or more dimensions in the columns (e.g. Years). In the cells within the crosstab will be values, such as Enrollment counts.

cube

A multidimensional representation of data needed for online analytical processing, multidimensional reporting, or multidimensional planning applications.

Cubes are the heart of TM1 data. Dimensions represent Who, What, When, How – Fund Type, College, Year, Student Type, and Financial Statement line all represent Northeastern dimensions. The cubes store values for the intersection of all of the dimensions. If one visualizes a Rubix cube, each block represents the intersection of the row, column, and slice for a specific value – FY13, BV, InSchool, Enrollment = 200.

D

data source

A file or data used as the source for the TurboIntegrator import process.

The Financial Plan application sources data from historical spreadsheets, from Banner (via ODS), and manual input (for items like Tuition amount)

dimension

In Cognos BI and Cognos TM1, a broad grouping of descriptive data about a major aspect of a business, such as Year, College, Student Type. Each dimension includes different levels of members in one or more hierarchies and an optional set of calculated members or special categories.

Dimensions may be hierarchical, such as the Northeastern Organization (NU->EXEC->College or Cost Center) or flat, such as Year (FY12, FY13, FY14…)

drill down

In a multidimensional representation of data, to access information by starting with a general category and moving downwards through the hierarchy of information, for example from Years to Quarters to Months.

NU example: Drill down from All Students to Freshmen, or from All Budget Centers to a specific college

drill through

A method of examination used to reveal detail or context information about a cell's contents.

NU Example: Drill through will be implemented in Phase 2. A drill through example could be drilling from a total of Study Abroad students to a detailed listing of all of the student names.

E

element

> A member of a dimension.

> NU examples: In the Budget Center dimension, each college is an element in that dimension. In the Year dimension, each year is an element.

L

leaf

> In a tree, an entry or node that has no children.

> NU example: Each college is a leaf in the Budget Center dimension. If departments were added to the dimension, the departments would be the leaves, and the colleges would be consolidation levels.

Lightweight Directory Access Protocol (LDAP)

> LDAP will be used to control who gets access to TM1.

> Question – is that just access and the rights/privs are assigned within TM1. What about Cognos?

> This is yet to be completely resolved.

M

metadata

> Data that describes the characteristics of data; descriptive data.

> NU example: The Budget Center dimension is described as having several levels – NU, EXEC, RC or CC's. Each Budget Center also has several attributes – aliases such as their short Name (BV) or description (Bouve College of Health Sciences). The metadata describes this structure. Values such as BV represent the actual data.

N

node

> In the TM1 world, a node references an element in a dimension. In the Northeastern world, the word Node is being used to describe a Budget Center – a Cost Center or Responsibility Center.

O

object security

> The access level assigned to Cognos TM1 objects.

OLAP

See online analytical processing.

online analytical processing (OLAP)

> The process of collecting data from one or many sources; transforming and analyzing the consolidated data quickly and interactively; and examining the results across different dimensions of the data by looking for patterns, trends, and exceptions within complex relationships of that data.

P

pick list

> A list of cell values available to a user when entering data into a cell.

> NU example: Simple examples are Y or N as pick list items for approval of New Initiatives. Pick lists ensure that data is entered consistently (rather than Yes, yes, Y, Approved, etc.)

process

> An object that contains a user-created script of TurboIntegrator functions and commands to programmatically import data as well as create and modify Cognos TM1 objects, such as cubes and dimensions. A process can be run manually or contained in a chore to run at a scheduled time. Processes are used to initialize values for a new budget year, or reset values if desired.

R

recalculate

> When new data is entered into a cell in TM1, cells that are dependent on that value may be recalculated. Automatic recalculation may be turned on or off.

reject

> In the approval workflow, a contributor will submit a budget for approval. Once it is submitted, it is locked to the contributor until the reviewer takes action. The budget may either be accepted, or it may be rejected. If it is rejected, the control reverts back to the submitter for revision. If it is accepted, it remains locked to the contributor.

rule

> A set of commands and tools used to create specific calculations and optimizations within cubes. Rules are equivalent to Excel formulas. A cell may either allow data entry (white cell), or have a rule applied to calculate its value (gray cell).

> NU example: Enrollment retention rates, term spreads, Tuition rate * Buy Sell Credit Hours all represent business rules that are applied to data.

S

sibling node

One of several nodes within the scope of another node. In the Year dimension, FY13 is a sibling of FY14.

slice

A view of a cube saved as a standard spreadsheet that retains a bi-directional link to the cube so that changes made in either the cube or in the slice are available in both locations. This is similar to linked excel spreadsheets.

spread

To distribute values across a range of cells using a specific algorithm, such as percent or increments.

submit

In the approval workflow, a contributor will submit a budget for approval once they are ready for review. Once it is submitted, it is locked to the contributor until the reviewer takes action. The budget may either be accepted, or it may be rejected. If it is rejected, the control reverts back to the submitter for revision. If it is accepted, it remains locked to the contributor.

subset

A set of elements within a dimension. Subsets may be named and saved for future use.

synchronization

A bi-directional process of copying data updates and metadata from an original cube to its replicated versions, and from replicated versions of the cube back to the original cube.

V

view

A view is a predefined presentation of a cube. In the Financial Plan cube, information could be explored by college, by year, by budget vs. actual – these are all different ways of viewing the same underlying cube. Views are created to simplify TM1 for users since they don't require additional manipulation of the cube to either enter data or derive meaning.

In the Financial Plan cube, views are provided to update information for a new year, and to review data with year-over-year comparisons.

W

websheet

A Microsoft Excel worksheet that is accessed through Cognos TM1 Web.

NU Example: Landing page

Z

zero suppression

The ability in a cube view to turn off the display of rows or columns that contain only zero values so those rows or columns do not display.

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