Project Scope
MIT Business Intelligence
Performance Point Server Pilot
Last Updated: 08/07/08

Document Information		
Project:	MIT Business Intelligence Project	
Related Documents:	Project Charter	
Version:	DRAFT 0.02	
	DRAFT 0.01	Initial Draft
	DRAFT 0.02	Draft w/Meeting 1 edits

Project Background and Description
MIT does not have a hosted forecasting and modeling tool to assist department administrators and faculty/PIs in managing their budget, revenue, or expenses for central departmental funds or research awards. Currently the process for matching available resources to projects requires a great deal of effort and the reliance on data gleaned from a composite of local and institutional data. *Project Goals:* • Development of user friendly scenario and forecasting system that address PI resources, group resources and overall DLC resources. • Provide a comprehensive view of DLC resources that takes into account financial commitments, existing resources, staff, faculty and student appointments and support requirements. • Development of a forecasting and reporting that can be adapted for Institution-wide roll out • Develop basic modeling and forecasting using "what if" scenarios, hypothetical appointments and funding. • Demonstrate the integration of data from multiple sources. *(This section will need to be revised/edited)*

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Implementation Requirements
To ensure the requisite functionality is available, the following components will be deployed on the appropriate systems **Server Deployment** ● Development and Deployment of Production MITBI Application instance ● Development and Deployment of Test MITBI Application instance ● Implementation of Kerberos Authentication for required devices **Client Deployment** ● Connection of designated devices to the WIN.MIT.EDU domain ● Installation of client software (Excel Add-In) ● Connection of devices to Performance Point server

Data Requirements

Data Structures

Models

Model	Description
CSAIL_Financial	Contains financial amount information by Cost Object and GL. Broken out into the following Scenarios: Actual, Forecast, Budget (Department Budgets at the GL level), Commitments
CSAIL_People	Contains amount information about employees information by Employee/Position, Cost Object and GL. Broken out into the following Scenarios: Actual, Forecast, Commitments
People_Assumptions	Contains Salary and FTE information by person/GL. All information in the Forecast Scenario
People_Rates_Assumption	Contains Overhead Rate information for people by Cost Object/GL
Financial_Rates_Assumption	Contains Rate information by Cost Object/GL

Dimensions

Dimension	Description

Cost_Object	The Cost Objects defined in the system
Employee_Position	The employees in the system relevant to CSAIL (PI's and staff assigned to CSAIL Cost Objects)
Entity	The current application context: CSAIL
GL	Cost elements from CEMIT-CS1 and CEMIT-CS2 hierarchies
Project_Year	The list of Project Years being tracked by CSAIL
Rate	Overhead Rate information (EB, F&A, S&W, etc.)
Scenario	The scenario information (Forecast, Budget, Actuals, Commitments, etc.)
Time	The units of time, currently monthly

Dimension Properties

Cost_Object

Property	Sample Value
Label	P6896245
Description	Conversational Human – Robot Interaction
CO_Category	Research, Fund Sponsored, etc.
CO_Status	Open, Closed
PrimeSponsor	NSF, NIH, etc.
PrimeSponsor_ID*	(Id of the sponsor)
Fund Center	BerGren / Michael UROP, DH-Admin/CMI, etc.
FundCenter_ID*	(Id of the Fund Center
Sponsor	MIT – Internal, NSF, Navy – ONR, etc.
Sponsor_ID*	(Id of the sponsor)
PI Directorate	AI, Math, Theory
PI_Research_Group	TOC/Math, Robotics, SLS
CO_Effective_Date	(Effective Start Date of Cost Object)
CO_Expiration_Date	(Expiration Date)
CO_Final_Expiration_Date	(Final Expiration Date from COEUS)
Profit_Center	Mathematics, Biology, Center for Global Change Science, etc.

Plannable_Cost_Object	Plan, No Plan
PI	Stewart, Iain W, etc.
Profit_Center_ID	P159900, etc.

GL

Property	Sample Value
Label	CEMIT-CS21 (The lowest level of the cost element hierarchy, either GL account (for people) or GL account group (for Finance)
Description	Expenses (Description of GL)
Account Type	Income, Expense, etc.

Employee_Position

Property	Sample Value
Label	9620620152-S00061873, etc
Description	(Name of person)
Supervisor	Winston, Patrick H, etc.
Supervisor_MITID*	9XXXXXXXX
Job_Title	Research Assistant, Sponsored Research Technical Staff, etc.
Start Date	(Start Date of the employee position)
End Date	(End Date of the employee position)
Org_Unit	Comp Sci & Artificial Intelligence, Electrical Engineering, etc.
Status	Active or (null)
Employee_Type	Student,Sponsored Research Staff, Faculty, etc.
Pay Basis	12 months, 9 months, Term, Summer, etc.
Position	S00061873, etc.
Current_Appt	True, False
MIT_ID	9XXXXXXXX

Hierarchies

Name	Description
Cost_Object_People	Hierarchy of Cost Objects for People
Cost_Object_Financial	Hierarchy of Cost Objects for Finance

Cost_Object_Sponsor*	Hierarchy of Cost Objects organized by Sponsors – Brown Book
Cost_Object_FundCenter*	Hierarchy of Cost Objects organized by Fund Centers
GL_Financial	Hierarchy of GL Accounts for Finance (CEMIT-CS1)
GL_People	Hierarchy of GL Accounts for People (CEMIT-CS2)

* = To be defined

Data Load Processes

Monthly Update of Fact Data
CSAIL_Financial: Actuals, Budgets and Commitments
Financial information from Data Warehouse

CSAIL_People: Actuals and Commitments
People information from Data Warehouse

People_Rates_Assumption: Rate Data
Rate information from Data Warehouse

Financial_Rates_Assumption: Rate Data
Manual load of Financial Rate information from lthe Data Warehouse (CSAIL Local Data)

People_Assumptions: Salary, FTE and % Distribution Data
Load of Salary, FTE and % Distribution from Warehouse

Monthly updates of Dimension Data And Hierarchies*
All loads involving CSAIL local data must be fully automated before we can increase load frequency.

Cost Object: Cost_Object_People, Cost_Object_Finance
Load of of CO dimension and CO_people hierarchy from Data Warehouse
Load of CO_Finance hierarchy from local data

GL: GL_People, GL_Financial
Load of GL dimension and GL_People hierarchy from Data Warehouse
Load of GL_Financial hierarchy from local data

Employee Position
Load of Employee Position information from Data Warehouse (CSAIL Local Data for supervisor association)

Project Year
Manual load of Project Year information from Data Warehouse (CSAIL Local Data

Data Management

- Documentation for all load processes
- Development and Deployment of manual/minimally automated processes to load all MITBI data structures identified above.
- Development and Deployment of "lights-out" (no manual intervention required) automated processes to load all MITBI data structures identified above.

Core Application Functionality

The core application functionality can be divided into the following areas:
- Required Business Functionality
- Business Rules
- Associations

Required Business Functionality

One-time load of Commitments Data to Forecast
The data in the commitments scenario will be loaded into the Forecast scenario once to populate the base forecast.

Project Year Allocations
The system must include a method to associate months for a particular cost object to a project year during forecasting. All project year allocations will initially be deposited into PY_NA. After that a business rule will be run to allocate the project amounts by month into the project years in question. In the event that no project year data is available the project year data will be populated into project year 0 (PY0).

Planning by Percent distribution and FTE of people by CO
The system must provide the means to plan people via percent distribution.
1) For any given person, the system must provide the means to identify what projects(cost_objects) that an employee-position should be associated with and their allocation to the project in question. The total % distribution must always equal 100% across all cost objects.
2) For any given employee-position, the system must provide the means to identify (by person) their FTE status (whether they are full-time, half-time etc.)
3) To plan for a employee-position, the formula to allocate them is:
% distribution * FTE * amount

   * As a temporary measure, the % distribution will be calculated from the Commitments % distribution

The system must provide a form to allow the manipulation of % distribution and FTE by employee-position. This includes the ability to add Cost Object distributions to an employee-position.

New Hire planning
The system must provide the means to identify the impact of new hires on existing projects. This includes the tracking of proxy hire roles (To be Hired/TBH) and the ability to forecast the effects of distribution to specific Cost Objects (Projects).

New Project planning
The system must provide the means to allocate a proxy Cost Collector (To be allocated/TBA) for forecasting purposes and allocate resources to the project to identify the impact. This includes assigning overhead rates.

Current Balance
For Research funds, the current balance is defined as:
Authorized Totals – (Direct Expenses + Indirect Expenses)

For Discretionary Funds, the current balance is defined as:
Revenue and Transfers - Expenses

Future Funding
The system will calculate Future Funding for research funds as follows:
Anticipated totals – Authorized Totals

Project Run Rate
The System must provide the means to calculate the burn rate for a a given Cost_Object(project). This calculation would include:
1) 12-month burn rate calc: For a given project, the total expenses used over the last 12 months
2) Monthly burn rate calc: Averaged over the last 12 months, the total expenses per month
3) Expenses vs. Budget: When is money expected to run out for the project.

Plan salary percent increase
The system must provide the means to include the percent increase in any and all salary calculations. Within the Forecast Scenario for the CSAIL_People and CSAIL_Financial models the system needs to allow a calculation to increase the salary expenses by specific amounts (expected to be 3%) on an annual basis at the month level.

Business Rules

Within Microsoft Performance Point Server, business rules perform necessary calculations to ensure that all required data is available to performing necessary planning tasks. The defined business rules for this pilot include the following:

Name	Model	Description
Overhead Calc People_SW	CSAIL_PEOPLE	For each rate type and GL in the Assumption Model, Multiplies the

		intersection against the amount in the GL in the People Model. For SW rates.
Overhead Calc People_MS	CSAIL_PEOPLE	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the People Model. For MS rates.
Overhead_Calc_People_EB_V AC	CSAIL_PEOPLE	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the People Model. For EB VAC rates.
Overhead_Calc_People_EB_V AC_NO_MTDC	CSAIL_PEOPLE	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For EB VAC NOT MTDC rates.
Overhead_Calc_People_FA-EB	CSAIL_PEOPLE	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the People Model. For FA minus EB rates.
Overhead_Calc_People_FA	CSAIL_PEOPLE	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For FA rates.
Overhead Calc Finance_SW	CSAIL_FINANCIAL	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For SW rates.
Overhead Calc Finance_MS	CSAIL_FINANCIAL	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For MS rates.
Overhead_Calc_Finance_EB_ VAC	CSAIL_FINANCIAL	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For EB VAC rates.
Overhead_Calc_Finance_EB_ VAC_NO_MTDC	CSAIL_FINANCIAL	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For EB VAC NOT MTDC rates.

Overhead_Calc_Finance_FA-EB	CSAIL_FINANCIAL	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For FA minus EB rates.
Overhead_Calc_Finance_FA	CSAIL_FINANCIAL	For each rate type and GL in the Assumption Model, Multiplies the intersection against the amount in the GL in the Finance Model. For FA rates.
Overhead_Prepopulation	People_Rates_Assumptions	Takes the rate information found in July2008 and copies across all months
FTE_Adj_Salary_Real	People_Assumptions	For each person, multiplies the FTEEFF (FTE) by the salary in the GL for the next 60 months for Real Employees
FTE_Adj_Salary_Plan	People_Assumptions	For each person, multiplies the FTEEFF (FTE) by the salary in the GL for the next 60 months for Plan Employees
PY_Allocations	CSAIL_FINANCIAL	Allocates data to the correct Project Year
Salary_Across Model	CSAIL_PEOPLE	Multiples the salary amount in the GL against the rate in the GL for all periods, across all GLs

Associations

The system shall include the development and deployment of automated processes to transfer summary information from the CSAIL_People model to the CSAIL_Financial model (loading the aggregations of amounts across all scenarios).

Reporting Requirements				
The following reports have been identified for Phase I. All reports with a technical complexity (TC) of 1 shall be included in the pilot. Every attempt shall be made to complete reports of TC: 2 as well. Technical Complexity = 3 reports shall be generated as time permits.				
Title	Model	Description	TC	Priority
CSAIL_Volume	CSAIL_Financial	Total yearly volume by year (for the last 5 years) of Research CO_Categories, and for the W3C (Special) CO. Option to include yearly month-to-month comparison	1	

		as well		
Research Account Detail	CSAIL_Financial	For any given Research Cost Object, the breakdown of % distribution and total cost for personnel and the total expenses (by expense category) for that account. Includes month to date in project year and projected monthly amounts for the above. Headers give balance and funding detail	2	
HQ Account Detail*	CSAIL_Financial	For any given Cost Object, the breakdown of % distribution and total cost for personnel and the total expenses (by expense category) for that account. Includes month to date in project year and projected monthly amounts for the above. Headers give balance and funding detail *(Needs additional information)*	3	
Salary Distribution by Employee	CSAIL_People People Assumptions	For any given Employee the list of cost objects they are associated with and their % distribution to those Cost Objects month over month for the current year	1	
Salary Distribution by Account	CSAIL_People People Assumptions	For any given Cost Object the list of Employees that are associated with it and their % distribution to this Cost Objects month over month for the current year	1	
Staffing Commitments	CSAIL_People	For a particular PI, Breakdown of Salary, % Distribution, Cost to PI, Tuition amount (if applicable) and Loaded Cost (includes overhead) for all personnel associated with the PI (PI in Employee:Supervisor Field	3	
PI_Summary	CSAIL_Financial	For a given PI/Group, the list of all Cost Objects for this PI with current balance, future funding, end date, and projected balance on end date. Separates Research and	2	

		Discretionary Cos. Include PI's Burn Rate (Total Expenses) over the last 12 months as a total and an average.		
PI Overview	CSAIL_Financial	The List of all Pis in CSAIL, along with their unexpended balance, Discretionary Balance, and Research Balances. Based off of their existing burn rate an indicator will identify how long their funding is expected to last (Red = 3 months, Yellow = 6 months, Green = 12 months+)	2	
CSAIL_Sponsor_Volume	CSAIL_Financial	Total yearly volume by year (for the last five years) by Sponsor Category Option to include yearly month-to-month comparison as well	2	
Employee Overview	CSAIL_People	Stacked bar chart showing headcount of last 5 years by employee_type	1	
Salary Coverage Report	CSAIL_Report	For every employee the salary for them, and their % distribution and salary amount per month by Cost Object to ensure that they are fully covered	2	
PI Group Funding Breakdown	CSAIL_Financial	For any given PI/Group, the list of Cost Objects for that PI and the breakdown of terms, funding and expenses for that Cost Object	2	
HQ Funds*	CSAIL_Financial	Shows Income and Expenses for the HQ Accounts by Account Type (Discretionary, Facilities, etc.)	3	

Data Entry Requirements				
The following Data Entry Reports have been identified to satisfy the planning needs of CSAIL. Additional forms shall be included in phase 2.				
Title	Model	Description	TC	Priority
PI/Group	CSAIL_Financial	For any given PI, the list of all	2	

Distribution		Employees for that PI, and the breakdown of % distribution on the PI's projects for each employee, monthly for 3 years		
Employee distribution	CSAIL_Financial/CSAIL_People	For every employee the salary for them, and their % distribution and salary amount per month by Cost Object. Allows the addition of additional projects to an employee, or the manipulation of the Employees % distribution.	2	
CO breakdown	CSAIL_Financial/CSAIL_People	For any given Cost Object, a breakdown of all the employees and expenses on that cost object . Includes anticipated Funding, Projected Balances, % Distribution and employee cost amounts. Provides the ability to and alter the expenses and employees associated with a project.	2	
New Project Form	CSAIL_Financial	Provides the ability to define a new cost object and apply expenses and employees to it.	3	

Training Requirements

TBD

Security Requirements

The system must have adequate security in place to secure the information contained therein. Access to this information shall only be provided to authorized personnel the user breakdown is as follows:

CSAIL Leadership
CSAIL Leadership shall have access to all associated data within the system. This shall include access to data across Pis as well as access to information pertaining to HQ, General, and internal discretionary funds. At this time members of the CSAIL Leadership team are expected to have read only access

Financial Analysts
Financial Analysts shall have full read access to all information within the system (including HQ information). In addition the Financial Analysts will have the ability to

plan across Pis and Cost Objects, which will add data to the forecast scenario. This will include access to Salary data.

Primary Investigators/Delegates
Pis and their delegates will have access to all data pertaining to their associated projects and personnel. This includes the ability to plan across all associated Cost Objects and to review salaries for all associated employees. The association of people to primary investigator will be governed by either the supervisor association on the employee or their presence in actuals or commitments for Cost Objects associated with the PI.

Affected Organizations

CSAIL
* Security implementation may affect other organizations

Affected Business Processes or Systems

This project is intended to provide a replacement for the existing planning processes that exist in the CSAIL department. This shall include replacement or creation of new reports and forms to implement the desired functionality as defined above.

Specific Exclusions from Scope

The following functionality shall be delayed to Phase II:

1. Generation of CSAIL Dashboards with drill down functionality.

The following reports and Dashboard functionality will be delayed until phase II.

Title	Model	Description	TC
Dashboard: PI Summary	CSAIL_Financial	Scorecard for PI's indicating who is in trouble based on when funds are expected to run out (3 months = red, 6 months = yellow, 12 months+ = green)	3

4)

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Approval and Authority to Proceed		
We approve the project component as described above, and authorize the team to proceed.		
Name *[type or sign name]*	Title	Date

Prepared By:
Amon C. Horne/DRS