

Risk Management: Tying it all together with Primavera®

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S & R Associates, Inc.

- Primavera Solution Provider (PSP)
- Project management consulting, training and staff augmentation
- Certified woman-owned, small business
- National support with offices in Georgia and California

Agenda

- Opening Remarks and Expectations
 - High Level Overview
 - Attend other Sessions for Details
- Risk Management Definitions and Processes
- Primavera® Features and Functionality
- Benefits and Closing Remarks
- Questions and Answers

What is your Risk Management role?

- Are you a Project Manager wondering how to model the effects of risk into your project plan?
- Are you an Executive assessing risk across your portfolio?
- Are you a Scheduler interested in Monte Carlo and more?
- Are you a Methodologist or a Risk Manager tasked with incorporating lessons learned?

Leverage the Power of Primavera®

- Address each of the PMBOK® Risk Management Processes
- Integrate Primavera® features and functions into a coordinated and effective approach
- Meet the needs of the entire organization

Nothing we do is without risk. All we can do is be prepared.

Project Risk

“Project Risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on at least one project objective, such as time, cost, scope, or quality.”

PMBOK® Guide, Third Edition

Risk Management Processes

- Risk Management Planning
- Risk Identification
- Qualitative Risk Analysis
- Quantitative Risk Analysis
- Risk Response Planning
- Risk Monitoring and Control

Risk Management Planning

“Deciding how to approach, plan and execute the risk management activities for a project”

PMBOK® Guide, Third Edition

Risk Identification

“Determining which risks might affect the project and documenting their characteristics”

PMBOK® Guide, Third Edition

Qualitative Risk Analysis

“Prioritizing risks for subsequent further analysis or action by assessing or combining their probability of occurrence or impact”

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Quantitative Risk Analysis

“Numerically analyzing the effect on overall project objectives of identified risks”

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Risk Response Planning

“Developing options and actions to enhance opportunities and reduce threats to project objectives”

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Risk Monitoring and Control

“Tracking identified risks, monitoring residual risks, identifying new risks, executing risk response plans, and evaluating effectiveness throughout the project life cycle”

PMBOK® Guide, Third Edition



Primavera Features & Functionality

	Planning	Identification	Qualitative Analysis	Quantitative Analysis	Response Planning	Monitoring & Control
Methodology Management	X					
Work Products and Documents	X	X			X	X
Risk Types	X		X			X
Project Codes and UDFs	X	X			X	X
Filters	X					X
Thresholds and Issues	X					X
Project Architect		X			X	
Size & Complexity Wizard		X			X	
Baselines		X			X	X
Project Risks			X			X
Project Scoring			X			X
Activity Codes, UDFs & Global Change	X	X		X	X	X

Additional Capabilities

	Planning	Identification	Qualitative Analysis	Quantitative Analysis	Response Planning	Monitoring & Control
<i>Reports</i>	X	X	X	X	X	X
<i>Dashboard</i>	X	X	X	X	X	X
<i>Charts and Chart Design</i>	X	X	X	X	X	X
<i>PertMaster Monte Carlo Analyzer™</i>				X		
<i>PertMaster Project Risk</i>	X			X		X
<i>PertMaster Risk Expert</i>	X	X	X	X	X	X

IT Project: Software Implementation

•Scope

- Sponsorship
- Project Prioritization
- Hardware & Network
- Software Development
- Implementation
- Maintenance
- Staffing & Skill Set
- Business Continuity
- Disaster Recovery

•Typical Risks

- Technical Expertise
- Subject Matter Expertise
- Staffing Availability
- Unclear Process
- Limited Methodology
- Change Management
- Network Bandwidth
- Integration
- Scope Creep

Public Sector Project: New School

•Scope

- Programming
- Community Outreach
- Design
- Land Acquisition
- Environmental
- Permitting
- Construction
- Furnishings & Equipment
- Close-out

•Typical Risks

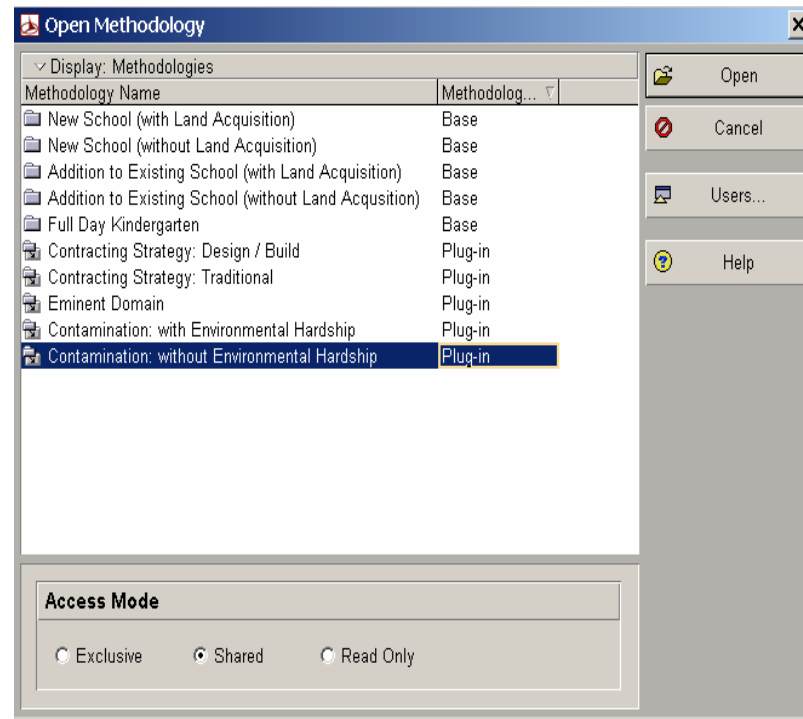
- Land Acquisition
- Eminent Domain
- Contamination
- Contracting Strategy
- Agency Response Time
- Weather
- Unforeseen Conditions
- Labor Restrictions
- Change in Demographics

Risk Planning

- Methodology Management
- Work Products and Documents
- Risk Types
- Project Codes and UDFs
- Filters
- Thresholds and Issues

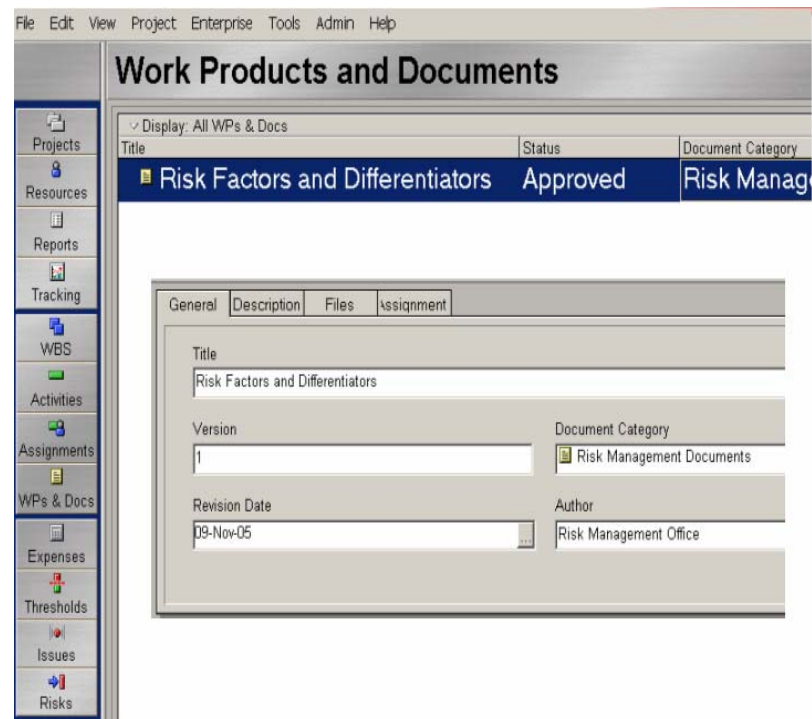
Methodology Management

- Gather and store Best Practices
- Methodology
 - Plan for the full project lifecycle
- Plug-in
 - Specialized Topics



Work Products and Documents

- Catalog project documents & deliverables
- Documents
 - Guidelines
 - Procedures
- Work Products
 - Output
 - Deliverables



The screenshot shows the 'Work Products and Documents' application window. The menu bar includes File, Edit, View, Project, Enterprise, Tools, Admin, and Help. The main window title is 'Work Products and Documents'. Below the title bar, there is a dropdown menu set to 'Display: All WPs & Docs'. A table displays a list of documents:

Title	Status	Document Category
Risk Factors and Differentiators	Approved	Risk Manag

Below the table, there is a detailed view of the selected document. The 'General' tab is active, showing the following fields:

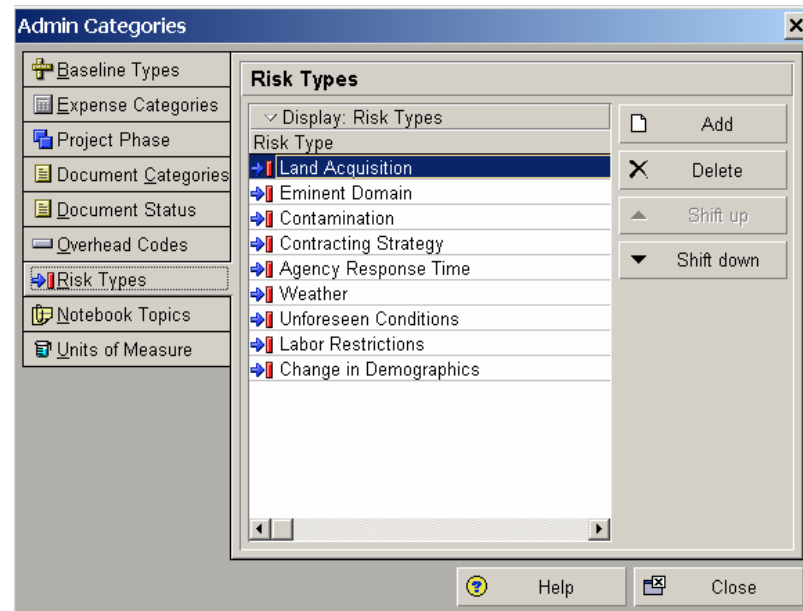
- Title: Risk Factors and Differentiators
- Version: 1
- Document Category: Risk Management Documents
- Revision Date: 09-Nov-05
- Author: Risk Management Office

Work Products and Documents

Factor	Primavera	Description	Values	Project Plan Revisions
Land Acquisition	Code	The development of a school may require the purchase of land from one or more entities.	- Yes - No	Select Methodology based upon School Type
Eminent Domain	Code	The acquisition of land may require invoking eminent domain. Low, Medium, High percentages are based upon number of parcels (not acreage).	No Yes: - Low (10%) - Medium (40%) - High (75%)	Select plug-in. Modify durations using Size & Complexity Wizard.
Contracting Strategy	Code	The preferred method of project delivery is by Traditional Method, that is, Design followed by Construction with separate contracts for each. All other delivery methods must be pre-approved by the Program Office.	- Traditional - Developer - Design / Build	Select appropriate plug-in.
Environmental Contamination	Code	The discovery of Environmental Contamination must be immediately characterized and reported to the Office of Environment. In the case of High contamination, submit an application for Environmental Hardship to secure additional funding.	No Yes: - Low - Medium - High (Environmental Hardship)	Select plug-in: - If Low or Medium, use "Contamination w/o Environmental Hardship" - If "High", use "Contamination w/ Environmental Hardship" Modify durations using Size & Complexity Wizard.
# of Seats	UDF	Current (Original plus approved changes) number of seats.	N/A	
# of Classrooms	UDF	Current (Original plus approved changes) number of classrooms.	N/A	
Community Involvement	UDF	Indicate what impact the levels and nature of community involvement will impact the project.	Red, Yellow, Green Indicator	

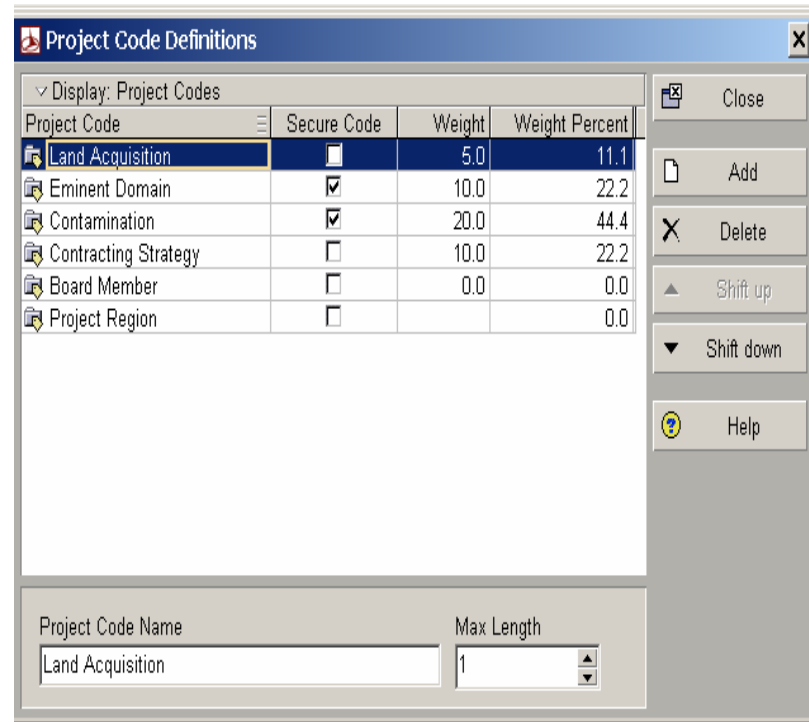
Risk Types

- Standardize and classify risks for all projects
- Assign to risks in any project
- Use for PMBOK® “Risk Categories”

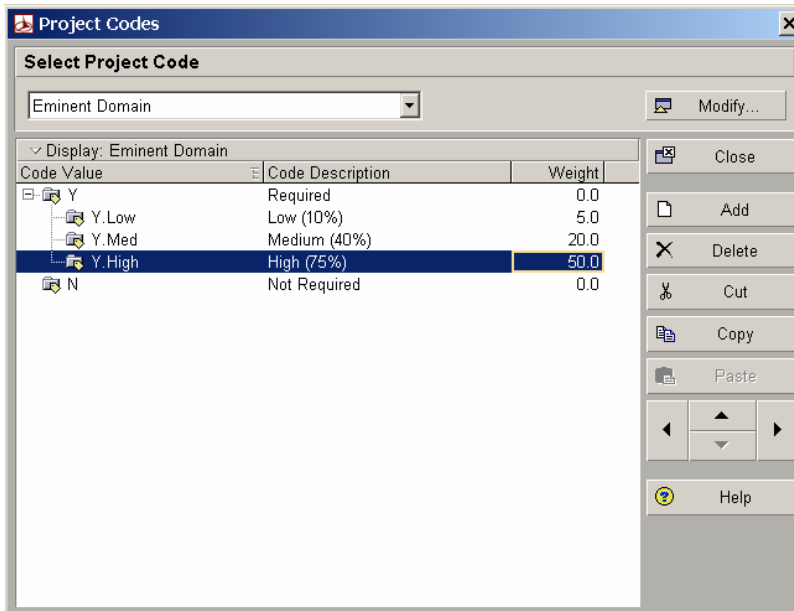


Project Codes - Definitions

- Classify projects across the enterprise
- Use to group, sort, filter and organize
- Assign a weight to determine rank or priority
- Secure to make viewable to only selected users

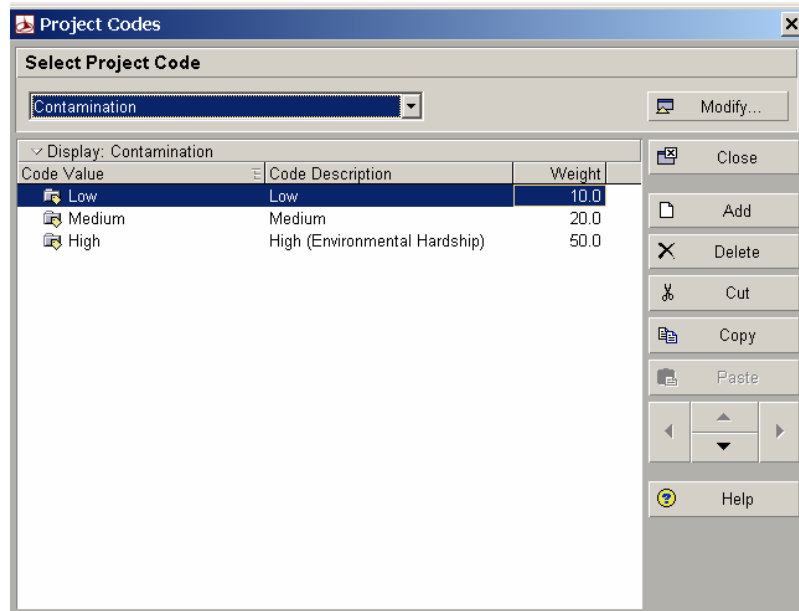


Project Codes - Values



The screenshot shows the 'Project Codes' dialog box with 'Eminent Domain' selected in the dropdown menu. The table below displays the project codes and their weights.

Code Value	Code Description	Weight
Y	Required	0.0
Y.Low	Low (10%)	5.0
Y.Med	Medium (40%)	20.0
Y.High	High (75%)	50.0
N	Not Required	0.0

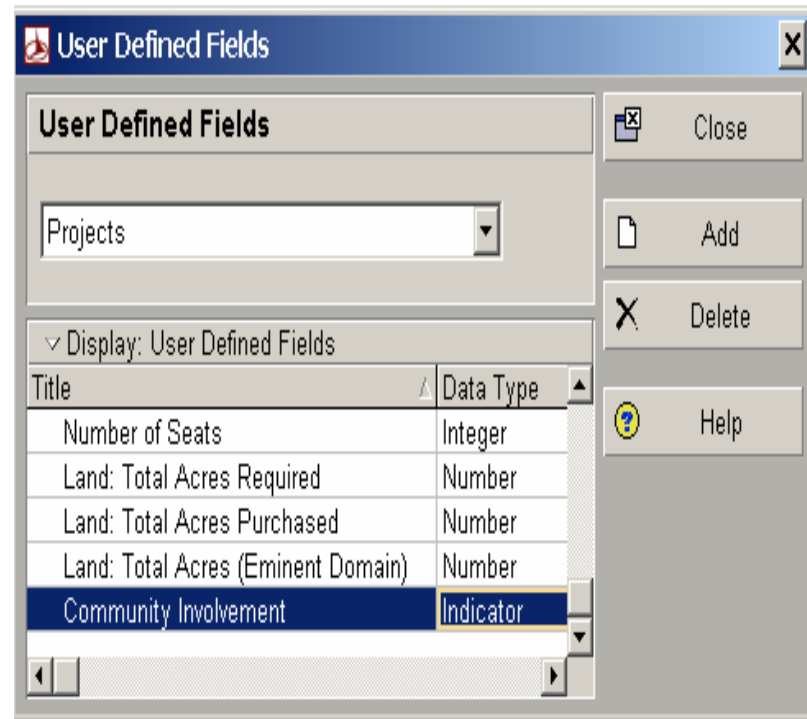


The screenshot shows the 'Project Codes' dialog box with 'Contamination' selected in the dropdown menu. The table below displays the project codes and their weights.

Code Value	Code Description	Weight
Low	Low	10.0
Medium	Medium	20.0
High	High (Environmental Hardship)	50.0

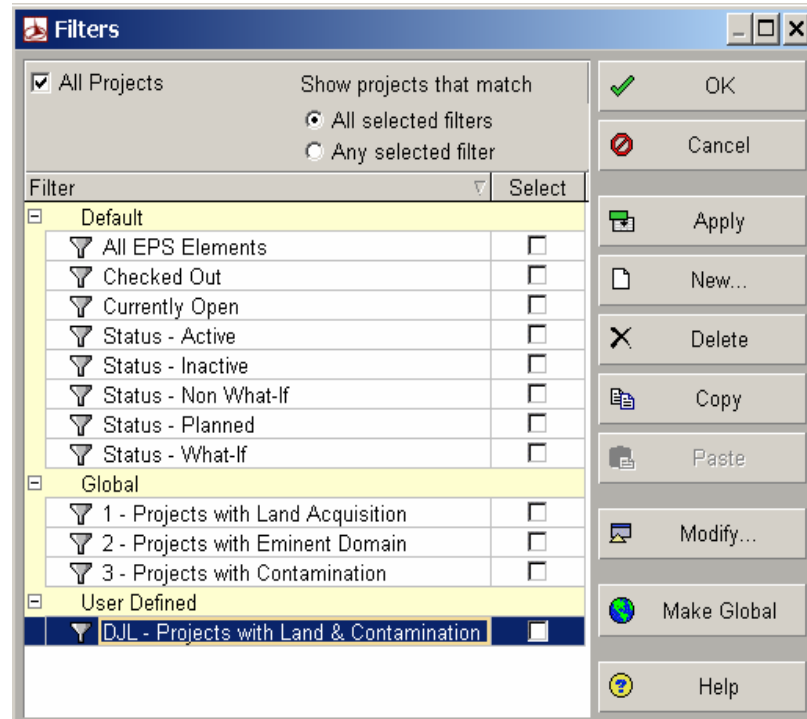
Project User Defined Fields (UDFs)

- Custom fields added to the database
- Data types: dates, integers, numbers, text, cost, indicators
- Use to group, sort, filter and organize
- Also available for WBS, Activities, Resources, etc.



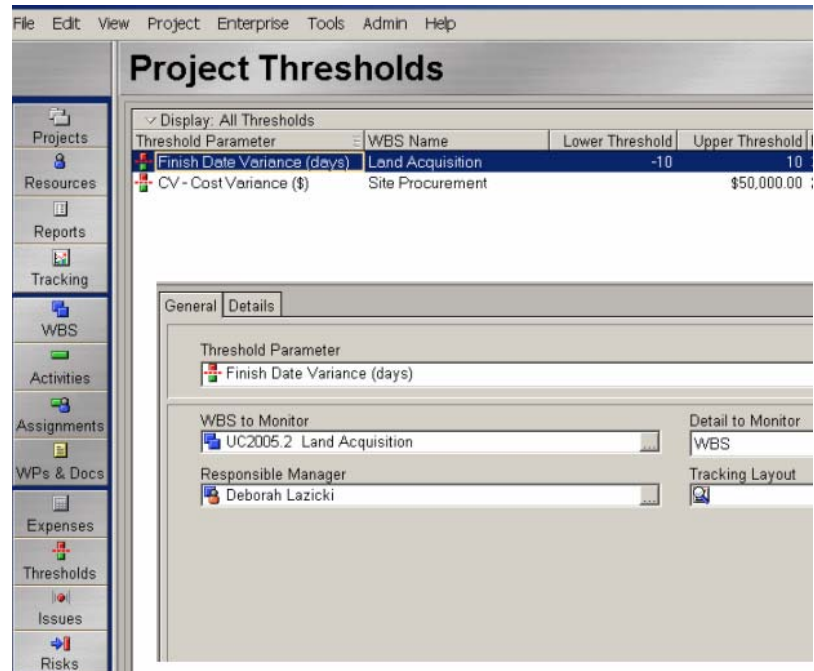
Project Filters

- Choose what to display
- Use multiple criteria
- Apply one or more
- Default, Global, or User
- Also available for WBS, Resources, etc.



Thresholds

- Acceptable tolerances (upper and/or lower) for a performance factor
- “Monitor” to generate Issues



The screenshot shows the 'Project Thresholds' window in the Primavera software. The window has a menu bar (File, Edit, View, Project, Enterprise, Tools, Admin, Help) and a left-hand navigation pane with icons for Projects, Resources, Reports, Tracking, WBS, Activities, Assignments, WPs & Docs, Expenses, Thresholds, Issues, and Risks. The main area displays a table of thresholds:

Threshold Parameter	WBS Name	Lower Threshold	Upper Threshold
Finish Date Variance (days)	Land Acquisition	-10	10
CV - Cost Variance (\$)	Site Procurement		\$50,000.00

Below the table is a 'Details' panel with two tabs: 'General' and 'Details'. The 'Details' tab is active, showing the following information:

- Threshold Parameter: Finish Date Variance (days)
- WBS to Monitor: UC2005.2 Land Acquisition
- Detail to Monitor: WBS
- Responsible Manager: Deborah Lazicki
- Tracking Layout: [Icon]

Issues

- Known problem which requires attention or corrective action
- Generate from Threshold or create manually
- Create Email threads
- Automate Alerts
- Maintain history

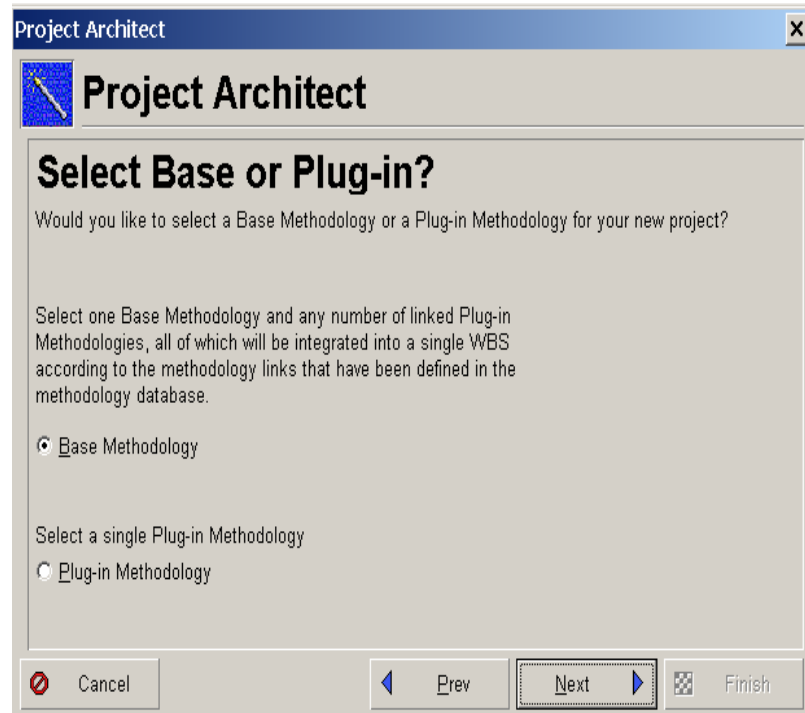
Project Issues			
▼ Display: All Issues			
Issue	WBS Name	Status	Priority
• Finish Date Variance (days) is -18 on WBS: UC2005.2	Land Acquisition	Open	3 - Normal
• Finish Date Variance (days) is -18 on WBS: UC2005.2.3	CDE Site Approval	Open	3 - Normal
• Finish Date Variance (days) is -20 on WBS: UC2005.2.1	Site Selection/Programming	Open	3 - Normal
• Finish Date Variance (days) is -20 on WBS: UC2005.2.2	Site Procurement	Open	3 - Normal

Risk Identification

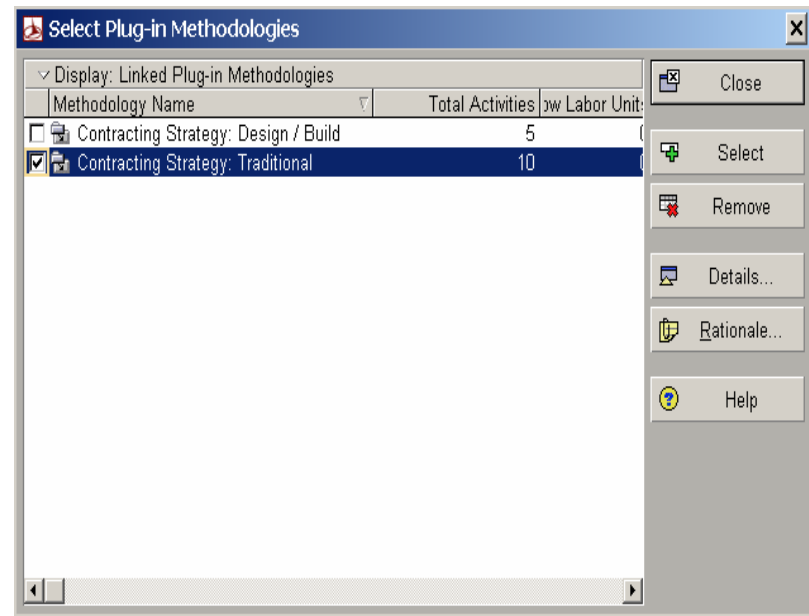
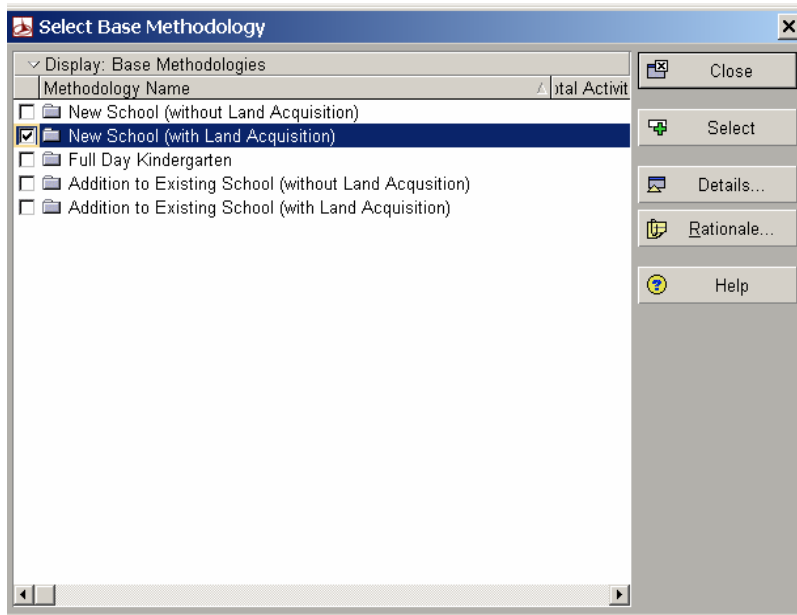
- Work Products and Documents
- Project Codes and UDFs
- Project Architect
- Size & Complexity Wizard
- Baselines

Project Architect

- A wizard that guides you through questions, then builds a project plan according to your responses
- Select base/plug-in
- Estimate size
- Tailor

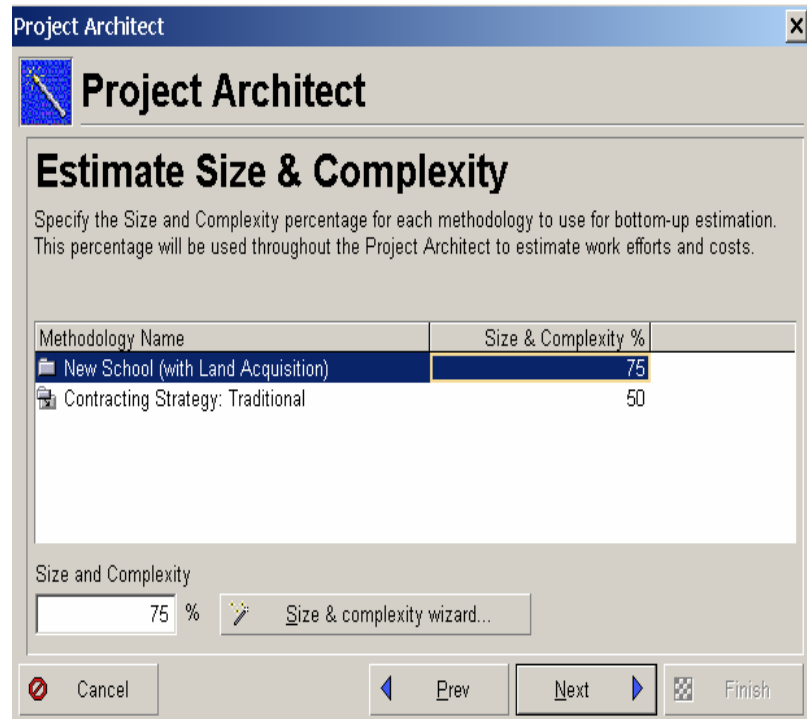


Base Methodologies and Plug-ins



Size & Complexity Wizard

- Calculate value between low and high ranges
- Answer questions or manually enter a percentage



Project Architect

Estimate Size & Complexity

Specify the Size and Complexity percentage for each methodology to use for bottom-up estimation. This percentage will be used throughout the Project Architect to estimate work efforts and costs.

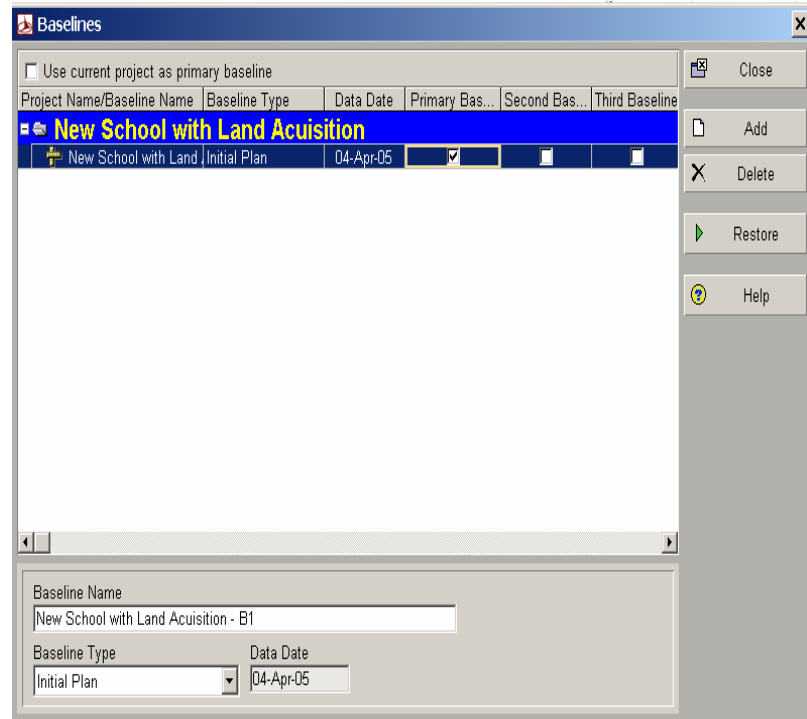
Methodology Name	Size & Complexity %
New School (with Land Acquisition)	75
Contracting Strategy: Traditional	50

Size and Complexity

% [Size & complexity wizard...](#)

Baselines

- “Snapshot” of a project at a specific point in time
- Use to:
 - Measure performance
 - Analyze changes over time
 - Perform “what if” analysis



Qualitative Analysis

- Risk Types
- Project Risks
- Project Scoring
- *PertMaster Risk Expert*

Project Risks

- Identify, categorize and prioritize risks
- Assign probability of occurrence
- Apply net exposure values
- Perform “what-if” impacts to cost, float, finish date

Project Risks

Project Risks Back Forward Home

Display: All Risks

Risk	WBS Name	Status	Priority
Change in Demographics	Programming	Open	3 - Normal
Land Acquisition Prolonged Negotiations	Land Acquisition	Open	3 - Normal

General | Description | Impact | Control

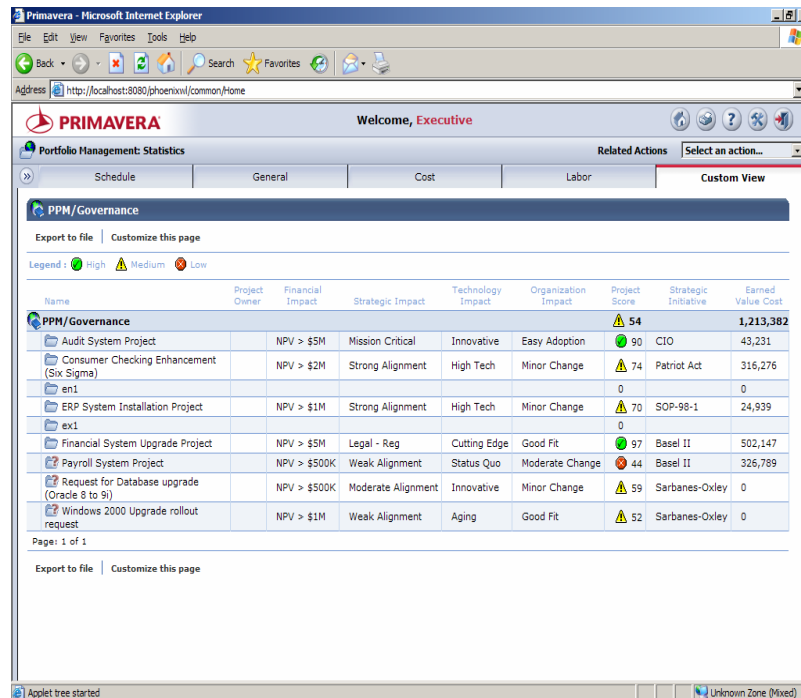
Impact Date: 23-Jan-06 Impacted Activities: 2

	Current	Impact		Exposure
Labor Units	104	70		14
Nonlabor Units	0			
Material Units	0			
Expenses	\$0.00			

Probability: 20 % =

Project Scoring

- Rank or prioritize projects based upon weights assigned to the codes
- Viewable only in the web tool

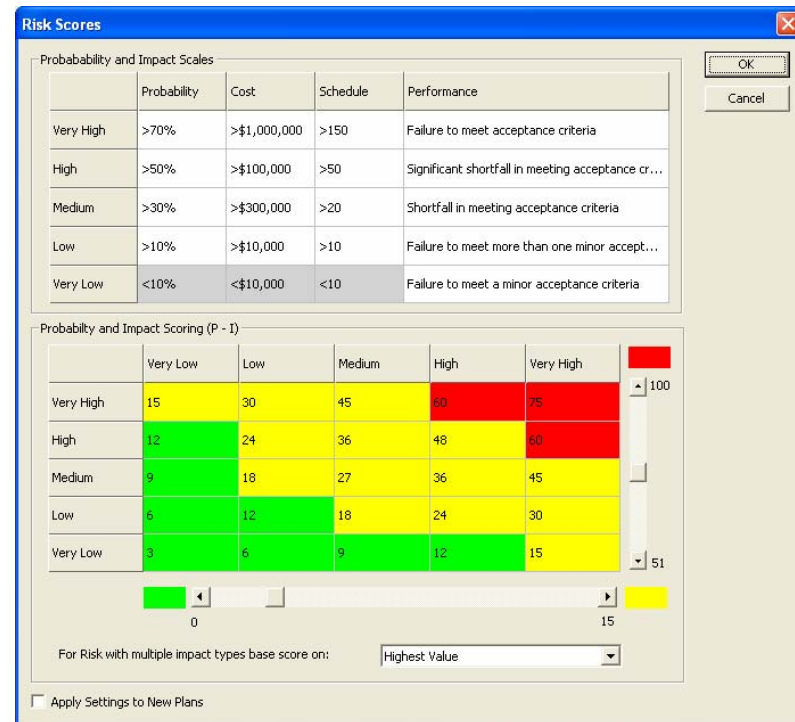


The screenshot shows a web browser window displaying the Primavera application. The page title is "PRIMAVERA" and the user is logged in as "Executive". The main content area is titled "Portfolio Management: Statistics" and shows a table of project scores. The table has columns for Name, Project Owner, Financial Impact, Strategic Impact, Technology Impact, Organization Impact, Project Score, Strategic Initiative, and Earned Value Cost. The table is filtered to show projects under "PPM/Governance".

Name	Project Owner	Financial Impact	Strategic Impact	Technology Impact	Organization Impact	Project Score	Strategic Initiative	Earned Value Cost
PPM/Governance								
						54		1,213,382
Audit System Project		NPV > \$5M	Mission Critical	Innovative	Easy Adoption	90	CIO	43,231
Consumer Checking Enhancement (Six Sigma)		NPV > \$2M	Strong Alignment	High Tech	Minor Change	74	Patriot Act	316,276
en1						0		0
ERP System Installation Project		NPV > \$1M	Strong Alignment	High Tech	Minor Change	70	SOP-98-1	24,939
ex1						0		0
Financial System Upgrade Project		NPV > \$5M	Legal - Reg	Cutting Edge	Good Fit	97	Basel II	502,147
Payroll System Project		NPV > \$500K	Weak Alignment	Status Quo	Moderate Change	44	Basel II	326,789
Request for Database upgrade (Oracle 8 to 9i)		NPV > \$500K	Moderate Alignment	Innovative	Minor Change	59	Sarbanes-Oxley	0
Windows 2000 Upgrade rollout request		NPV > \$1M	Weak Alignment	Aging	Good Fit	52	Sarbanes-Oxley	0

PertMaster Risk Expert

- Risk Register
- PI Matrices
- Risk Waterfalls
- Schedule integration
- Risk event plan
 - Risk event plan
- Register integration

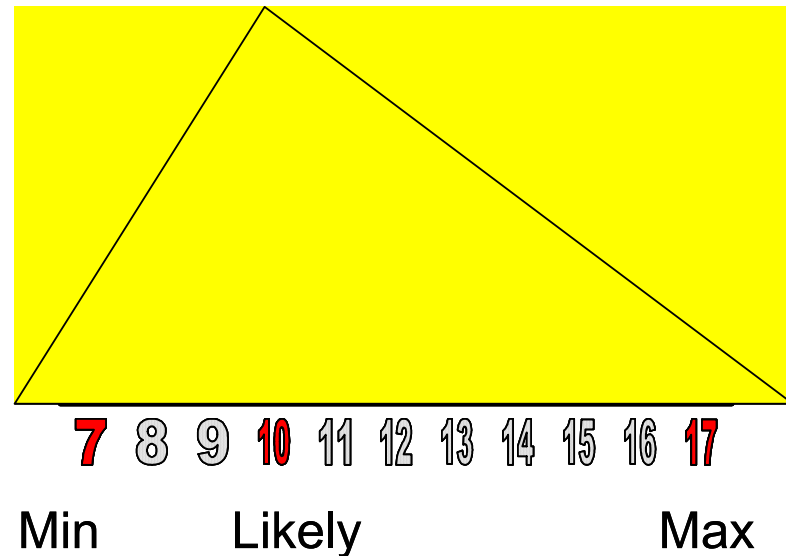


Quantitative Analysis

- *PertMaster Monte Carlo Analyzer*
- *PertMaster Project Risk*
- Activity Codes, UDFs and Global Change

PertMaster Monte Carlo Analyzer™

- Add-on for Primavera 4.x, 5.x, and Contractor
- Entry level duration uncertainty modeling tool
- Triangular & Uniform probability distributions
- Risk Barchart, Risk S-Curve and Tornado Plot

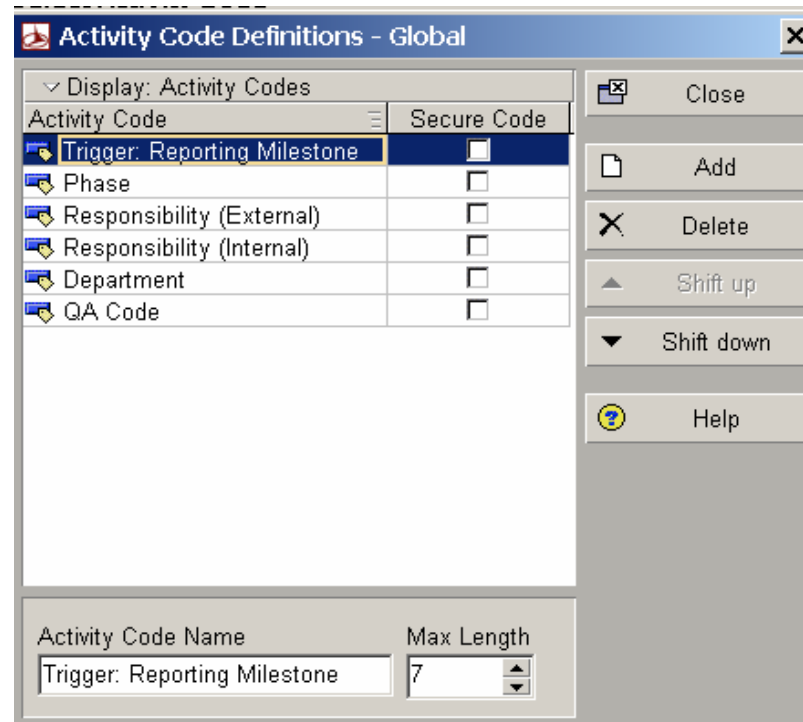


PertMaster Project Risk

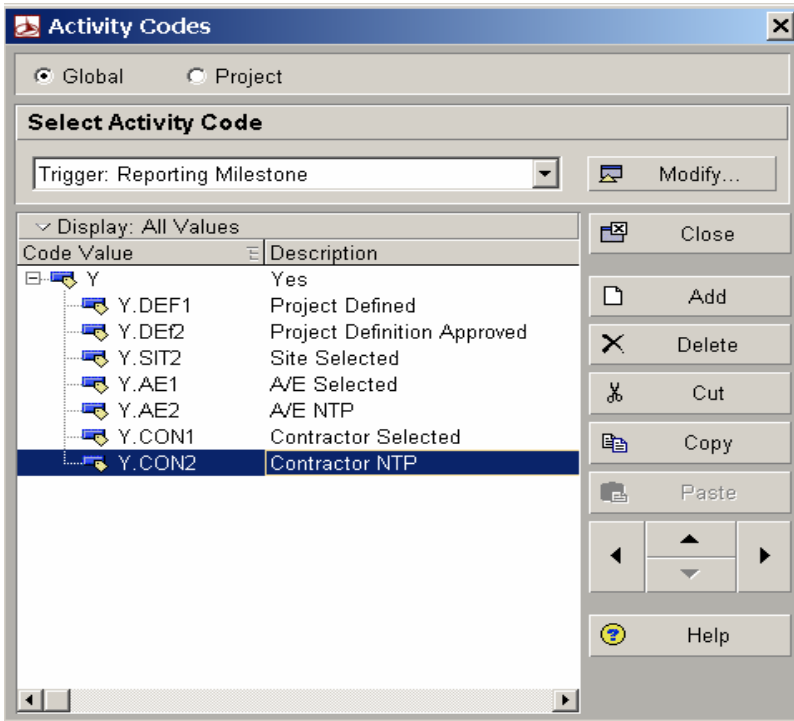
- Probabilistic scheduling (e.g, P10%, P90%)
- Enhanced granularity on durations (e.g., hourly)
- Cost & resource modeling & sensitivity analysis
- Advanced cost modeling (DCF, IRR, NPV)

Activity Codes - Definitions

- Classify activities within projects and across the enterprise
- Use to group, sort, filter and organize
- Secure to make viewable to only selected users
- Use for PMBOK® “Triggers”



Activity Codes - Values



Activity Codes

Global Project

Select Activity Code

Trigger: Reporting Milestone Modify...

Display: All Values

Code Value	Description
Y	Yes
Y.DEF1	Project Defined
Y.DEF2	Project Definition Approved
Y.SIT2	Site Selected
Y.AE1	A/E Selected
Y.AE2	A/E NTP
Y.CON1	Contractor Selected
Y.CON2	Contractor NTP

Close

Add

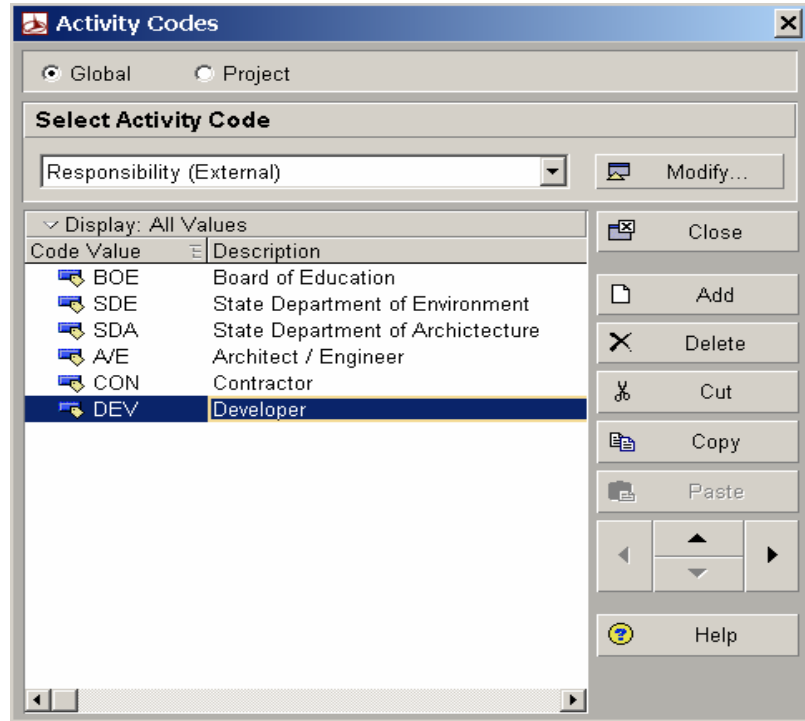
Delete

Cut

Copy

Paste

Help



Activity Codes

Global Project

Select Activity Code

Responsibility (External) Modify...

Display: All Values

Code Value	Description
BOE	Board of Education
SDE	State Department of Environment
SDA	State Department of Architecture
A/E	Architect / Engineer
CON	Contractor
DEV	Developer

Close

Add

Delete

Cut

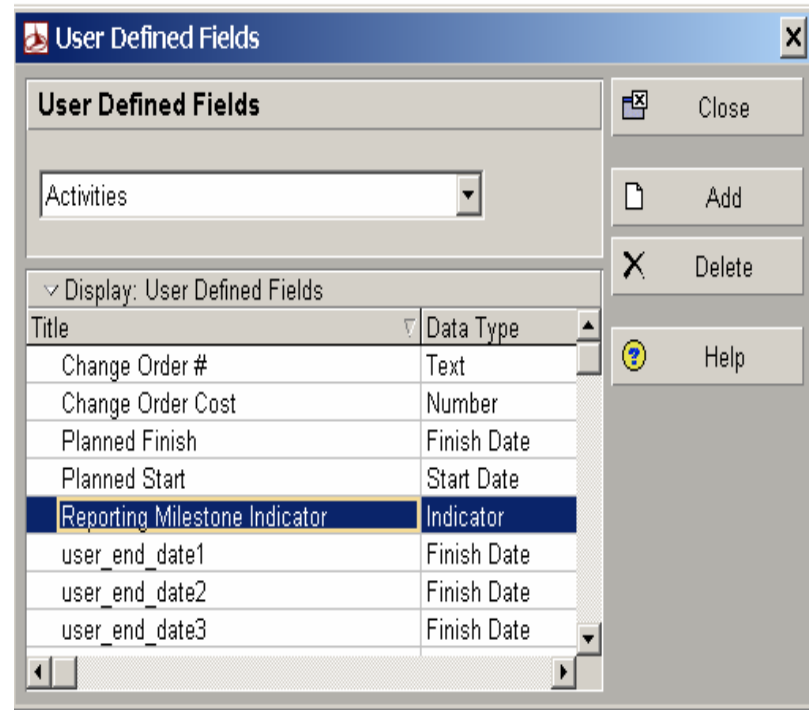
Copy

Paste

Help

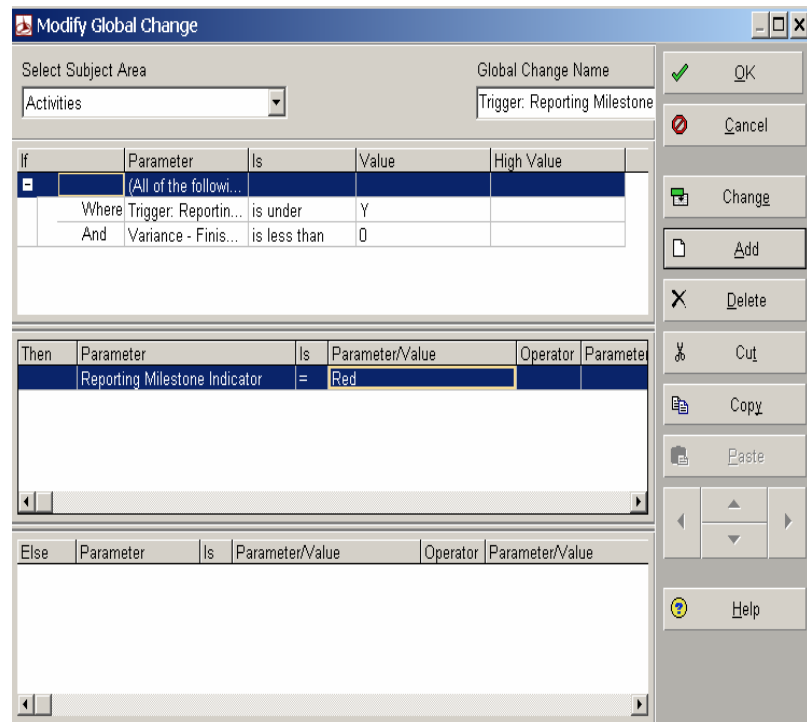
Activity UDFs (Type = Indicators)

- Custom fields added to the database
- Data types: dates, integers, numbers, text, cost, indicators
- Use to group, sort, filter and organize
- Also available for Project, Resources, etc.



Global Change

- Quickly change all or selected activities
- Uses If, Then, Else statements
- Can perform calculations
- Populate UDFs



Risk Response Planning

- Work Products and Documents
- Project Codes and UDFs
- Thresholds and Issues
- Project Architect
- Size & Complexity Wizard
- Baselines

Monitoring and Control

- Work Products and Documents
- Risk Types
- Project Codes and UDFs
- Filters
- Thresholds and Issues
- Baselines
- Project Risks
- Project Scoring
- Activity Codes, UDFs & Global Change

Additional Capabilities

- Reports
- Dashboard
- Charts and Chart Design
- PertMaster Monte Carlo Analyzer™
- PertMaster Project Risk
- PertMaster Risk Expert

Project Risk

- “One measure of the organizational commitment is its dedication to gathering high quality data on the project risks and their characteristics.”

PMBOK® Guide, Third Edition

Benefit → Organized Data Collection

- Balanced blend of “top down” and “bottom up” information
- Identifies what makes a project unique and what problems can arise
- Data reaches a wider audience, minimizing ad-hoc requests

Primavera® becomes the “go to” data source

Benefit → Improved Project Delivery

- Insight into factors that affect cost and schedule performance
- Understanding of decisions that change the approach and when they occur
- Provides a way to forecast and analyze the results

Better, easier, repeatable project management

Benefit → Maximized Resource Potential

- Consistent methodology allows for interchangeability of personnel
- New Team Members are easily oriented, trained and assimilated
- Varying levels of detail provide each role with the information they need

Knowledgeable, prepared, effective Team Members

Closing Remarks

- You're already doing this to some degree, all you have to do is formalize the approach
- “Release” features and functionality based upon the maturity of the organization
- Obtain Executive Sponsorship and Manage the Change

The biggest risk is to do nothing

Other Conference Sessions

- Monday
 - Advanced Risk Management Techniques using PertMaster and Primavera (2:40-3:40)
 - Managing Risk Using PertMaster Monte Carlo Analyzer for Primavera 5.0 (1:30-2:30)
 - Establishing a Performance Measurement Baseline (4:10-5:10)
 - Organizing and Filtering Project Data (4:10-5:10)

Other Conference Sessions (cont'd)

- Tuesday
 - Know your Project Better with Comprehensive Graphics (11:10-12:10)
 - Schedule Risk Management - The Merge of Project Execution Planning and Monte Carlo Risk Analysis (2:40-3:40)
 - Managing Baseline Schedules (4:10-5:10)
 - Managing Issues with Primavera (4:10-5:10)

Other Conference Sessions (cont'd)

- Wednesday
 - Portfolio Project Management Using Project Scoring (8:00-9:00)
- Exhibit Floor
 - Primavera
 - PertMaster
- Software Clinic

2005: A Primavera dyssey

Questions and Answers