



ORACLE®

Adding Optimization to Portfolio Management

A short demonstration of Oracle Crystal Ball and Primavera

Primavera ProSight - Scorecard: Optimization - Windows Internet Explorer

http://localhost:120/ProSight/Portfolios/View.htm?window=sc&itemID=748&scID=289

File Edit View Favorites Tools Help

SnagIt

Primavera ProSight - Scorecard: Optimization

PRIMAVERA ProSight Administrator, System | Mond

INVESTOR SCORECARD WORKBOOK FORMS DASHBOARDS TO-DO Setup Admin Optimize

Scorecard: Optimization Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard | Collaborate | View | Hear | Setup | Tools | Help

Items

Current Initiatives and Prop

- 1 Alt - ERM Auditor
- 2 Alt - General Ledger (ER
- 3 Alt - Procure On-line
- 4 Alt - Rev Recognition
- 5 Business Contingency Op
- 6 CD - Advanced Manufact
- 7 CD - Business Contingen
- 8 CD - Disaster Recovery S
- 9 CD - HIPAA Compliance S
- 10 CD - Knowledge Mngmt
- 11 CD - Learning Managem
- 12 CD - Marketing Data Int
- 13 CD - Requirements Syst
- 14 CRM Implementation
- 15 Decomm - APC Plant Cor

Item: Alt - ERM Auditor 1/35

Local intranet

Let's assume that we have a portfolio of items, each with associated cost and Net Present Value (NPV). We don't have the resources to do everything. Which should we choose?

In this demonstration, we will show how to use Oracle tools to converge on an optimal portfolio.

We start with a typical portfolio of Items in our portfolio management application.

Primavera ProSight - Scorecard: Optimization - Windows Internet Explorer

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Scorecard: Optimization Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard | Collaborate | View | User | Setup | Tools | Help

Items

Current Initiatives and

1 Alt - ERM Auditor

2 Alt - General Ledger

3 Alt - Procure On-line

4 Alt - Rev Recognition

5 Business Contingency Optimization

6 CD - Advanced Manufacturing System

7 CD - Business Contingency Compliance

8 CD - Disaster Recovery System

9 CD - HIPAA Compliance System

10 CD - Knowledge Mngmt

11 CD - Learning Management

12 CD - Marketing Data Integration

13 CD - Requirements System

14 CRM Implementation

15 Decomm - APC Plant Control

First, create a Scorecard - we've called this one Optimization. The Scorecard contains the categories you want to use in the optimization.

3	Alt - Procure On-line	53	33	150,000	184,903
4	Alt - Rev Recognition	43	73	250,000	800,757
5	Business Contingency Optimization	—	—	—	—
6	CD - Advanced Manufacturing System	32	33	450,000	139,877
7	CD - Business Contingency Compliance	32	65	225,000	29,000
8	CD - Disaster Recovery System	29	82	145,000	77,449
9	CD - HIPAA Compliance System	59	33	220,000	—
10	CD - Knowledge Mngmt	61	68	755,000	142,667
11	CD - Learning Management	51	53	180,000	—
12	CD - Marketing Data Integration	50	43	150,000	50,741
13	CD - Requirements System	89	63	186,000	18,556
14	CRM Implementation	81	58	197,000	338,362
15	Decomm - APC Plant Control	53	55	67,500	224,853

Item: Alt - ERM Auditor 1/35

Local intranet

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Scorecard: Optimization Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard | Collaborate | View | User | Setup | Tools | Help

Next we copy the information into our spreadsheet.

Current Initiatives and Proposals		51	53	9,781,500	4,700,738
1	Alt - ERM Auditor	58	55	184,000	343,452
2	Alt - General Ledger (ERP)	36	80	550,000	236,821
3	Alt - Procure On-line	53	33	150,000	184,903
4	Alt - Rev Recognition	43	73	250,000	800,757
5	Business Contingency Optimization	—	—	—	—
6	CD - Advanced Manufacturing System	32	33	450,000	139,877
7	CD - Business Contingency Compliance	32	65	225,000	29,000
8	CD - Disaster Recovery System	29	82	145,000	77,449
9	CD - HIPAA Compliance System	59	33	220,000	—
10	CD - Knowledge Mngmt	61	68	755,000	142,667
11	CD - Learning Management	51	53	180,000	—
12	CD - Marketing Data Integration	50	43	150,000	50,741
13	CD - Requirements System	89	63	186,000	18,556
14	CRM Implementation	81	58	197,000	338,362
15	Decomm - APC Plant Control	53	55	67,500	224,853

Item: Alt - ERM Auditor 1/35

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Primavera ProSight - Scorecard: Optimization

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Scorecard: Optimization Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard Collaborate | View | User | Setup | Tools | Help

Select Entire Scorecard
Select All Cells
Copy
Paste
Clear

Click Clipboard and then Select Entire Scorecard.

	Regy Score	Risk Score %	Total Planned Cost (\$)	NPV
Current Initiative				4,700,738
1 Alt - ERM Auditor				343,452
2 Alt - General Ledger (ERP)				236,821
3 Alt - Procure On-line				184,903
4 Alt - Rev Recognition	43	73	250,000	800,757
5 Business Contingency Optimization	—	—	—	—
6 CD - Advanced Manufacturing System	32	33	450,000	139,877
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14 CRM Implementation	81	58	197,000	338,362
15 Decomm - APC Plant Control	53	55	67,500	224,853

javascript:void('Collaborate')

Local intranet

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Scorecard: Optimization Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard Collaborate | View | User | Setup | Tools | Help

Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV
Current Initiatives and Proposals				10,738
1 Alt - ERM Auditor				3,452
2 Alt - General Ledger (ERP)				5,821
3 Alt - Procure On-line	33	33	150,000	104,903
4 Alt - Rev Recognition	43	73	250,000	800,757
5 Business Contingency Optimization	—	—	—	—
6 CD - Advanced Manufacturing System	32	33	450,000	139,877
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13 CD - Requirements System	89	63	186,000	18,556
14 CRM Implementation	81	58	197,000	338,362
15 Decomm - APC Plant Control	53	55	67,500	224,853

Item: Alt - ERM Auditor 1/25 Category: Strategy Score

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Scorecard: Optimization Portfolio: Current Initiatives and Proposals

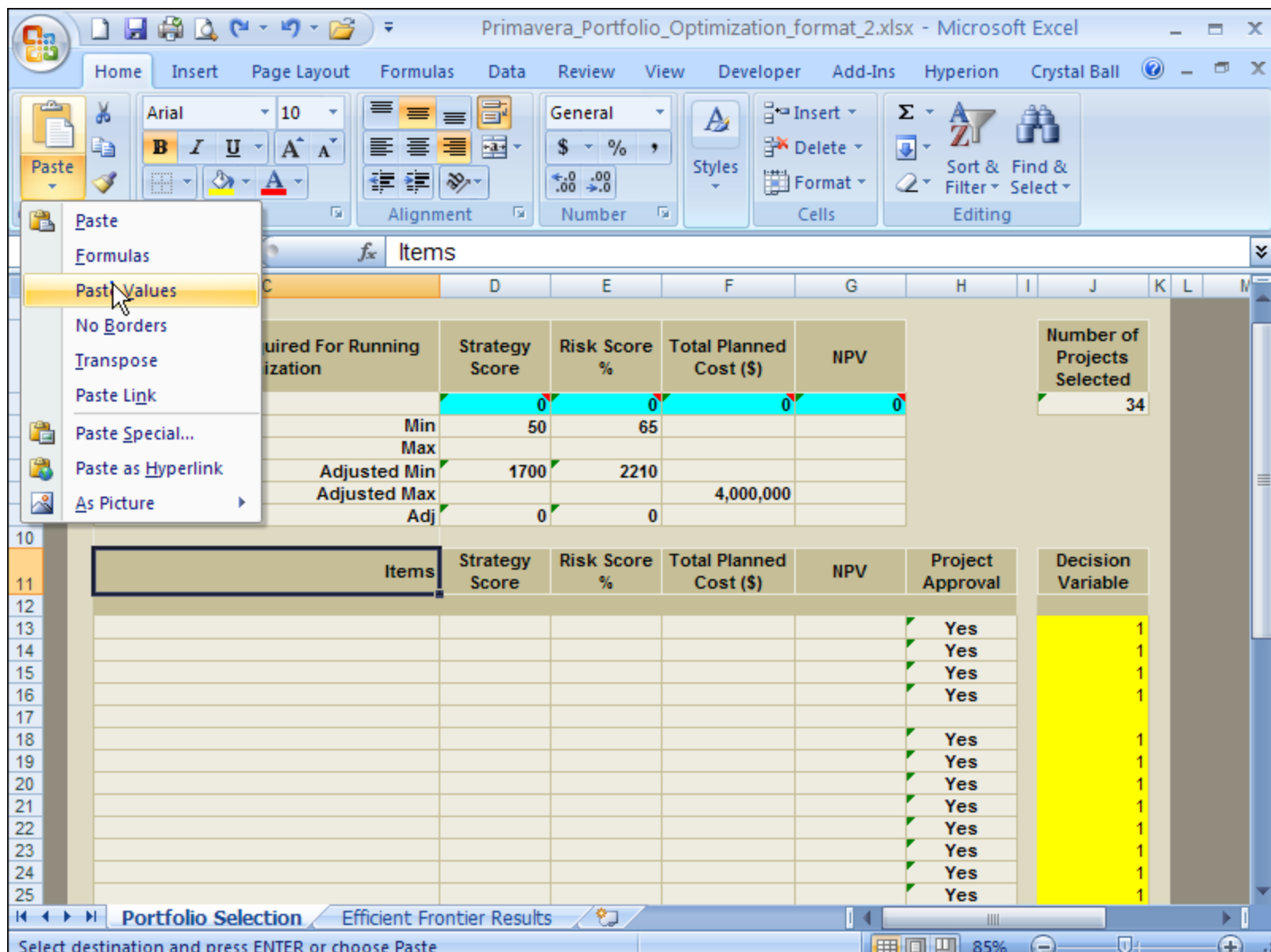
Scorecard | Portfolio | Clipboard Collaborate | View | User | Setup | Tools | Help

Select Entire Scorecard
Select All Cells
Copy
Paste
Clear

Click Clipboard, then Copy.

	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV
Current Initiative	51	53	9,781,500	4,700,738
1 Alt - ERM Auditor				343,452
2 Alt - General Ledger (ERP)				236,821
3 Alt - Procure On-line			100,000	184,903
4 Alt - Rev Recognition	43	73	250,000	800,757
5 Business Contingency Optimization	—	—	—	—
6 CD - Advanced Manufacturing System	32	33	450,000	139,877
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15 Decomm - APC Plant Control	53	55	67,500	224,853

javascript:void('Collaborate') Local intranet



Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

Clipboard Font Alignment Number Styles Cells Editing

C11 fx Items

2

3 Adjustments Required For Running Optimization Strategy Score Risk Score Total Planned Cost (\$) NPV Number of Projects Selected

4 51 53 9,781,500 4,700,738 34

5

6

7

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Items Strategy Score Risk Score % Total Planned Cost (\$) NPV Project Approval Decision Variable

Current Initiatives and Proposals 51 53 9781500 4700738

Alt - ERM Auditor 58 55 184,000 343,452 Yes 1

Alt - General Ledger (ERP) 36 80 550,000 236,821 Yes 1

Alt - Procure On-line 53 33 150,000 184,903 Yes 1

Alt - Rev Recognition 43 73 250,000 800,757 Yes 1

Business Contingency Optimization

CD - Advanced Manufacturing System 32 33 450,000 139,877 Yes 1

CD - Business Contingency Compliance 32 65 225,000 29,000 Yes 1

CD - Disaster Recovery System 29 82 145,000 77,449 Yes 1

CD - HIPAA Compliance System 59 33 220,000 Yes 1

CD - Knowledge Mngmt 61 68 755,000 142,667 Yes 1

CD - Learning Management 51 53 180,000 Yes 1

CD - Marketing Data Integration 50 43 150,000 50,741 Yes 1

CD - Requirements System 89 63 186,000 18,556 Yes 1

Portfolio Selection Efficient Frontier Results

Select destination and press ENTER or choo... Average: 211446.073 Count: 178 Sum: 28968112 85%

Before setting up the optimization, we define two types of variables: Decision Variables and Forecasts.

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

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Clipboard Font Alignment Number Styles Cells Editing

C11 fx Items

2

3 Adjustments Required For Running Optimization Strategy Score Risk Score Total Planned Cost (\$) NPV Number of Projects Selected

4 51 53 9,781,500 4,700,738 34

5

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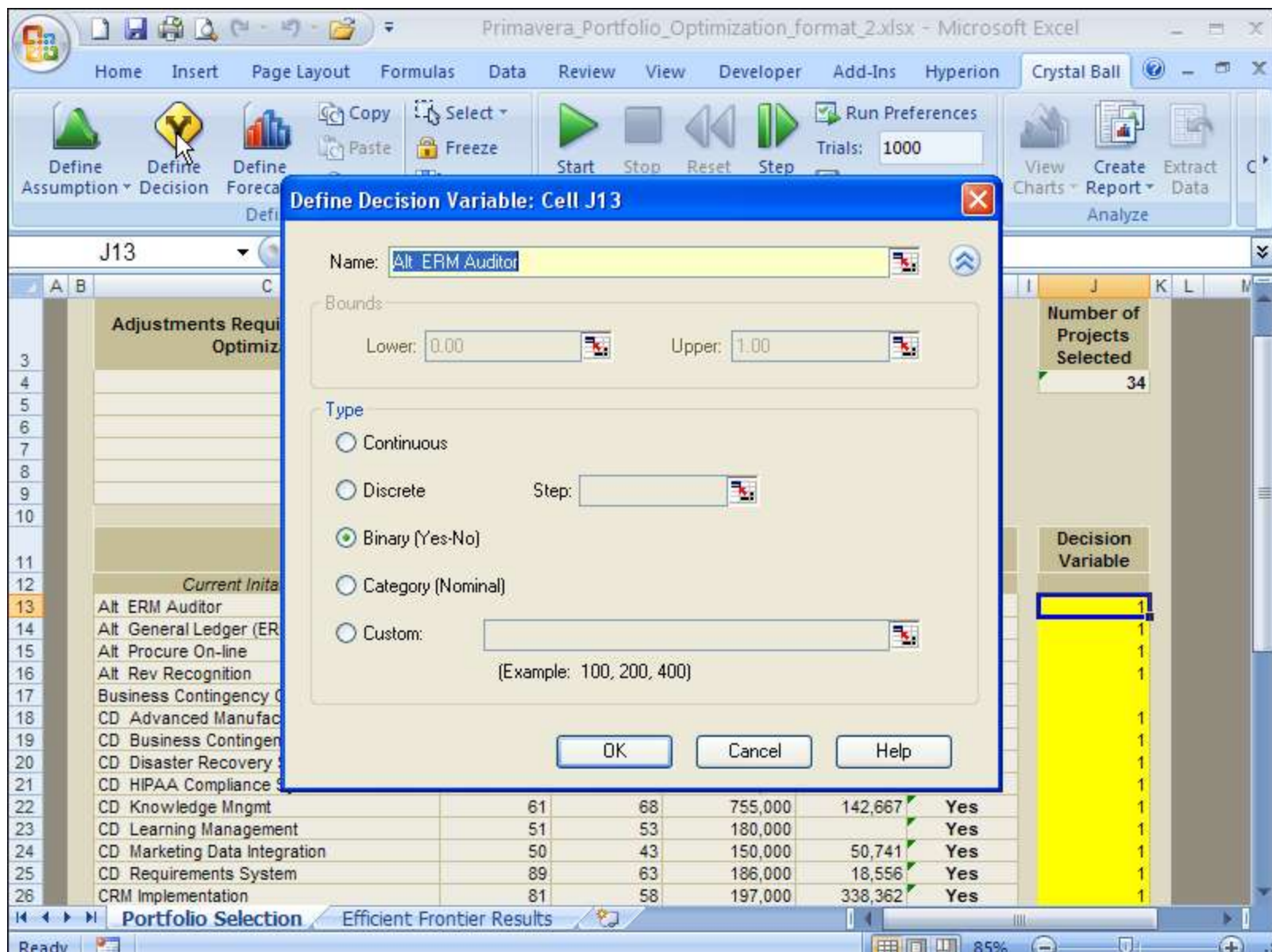
25

Decision Variables will track which items will be included in the final, optimal portfolio.

Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Project Approval	Decision Variable
Current Initiatives and Proposals	51	53	9781500	4700738		
Alt - ERM Auditor	58	55	184,000	343,452	Yes	1
Alt - General Ledger (ERP)	36	80	550,000	236,821	Yes	1
Alt - Procure On-line	53	33	150,000	184,903	Yes	1
Alt - Rev Recognition	43	73	250,000	800,757	Yes	1
Business Contingency Optimization						
CD - Advanced Manufacturing System	32	33	450,000	139,877	Yes	1
CD - Business Contingency Compliance	32	65	225,000	29,000	Yes	1
CD - Disaster Recovery System	29	82	145,000	77,449	Yes	1
CD - HIPAA Compliance System	59	33	220,000		Yes	1
CD - Knowledge Mngmt	61	68	755,000	142,667	Yes	1
CD - Learning Management	51	53	180,000		Yes	1
CD - Marketing Data Integration	50	43	150,000	50,741	Yes	1
CD - Requirements System	89	63	186,000	18,556	Yes	1

Portfolio Selection Efficient Frontier Results

Select destination and press ENTER or choo... Average: 211446.073 Count: 178 Sum: 28968112 85%



Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

Define Assumption Define Decision Define Forecast Define Copy Paste Clear Select Freeze Cell Prefs

Start Stop Reset Step Run Preferences Trials: 1000 Save or Restore View Charts Create Report Extract Data Analyze

J13 fx 1

	C	D	E	F	G	H	I	J	K	L	M
3	Adjustments Required For Running Optimization	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV			Number of Projects Selected			
4		51	53	9,781,500	4,700,738			34			
5	Min	50	65								
6	We'll define the portfolio Net Present Value (NPV) as our forecast.										
11	Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Project Approval		Decision Variable			
12	Current Initiatives and Proposals	51	53	9781500	4700738						
13	Alt ERM Auditor	58	55	184,000	343,452	Yes		1			
14	Alt General Ledger (ERP)	36	80	550,000	236,821	Yes		1			
15	Alt Procure On-line	53	33	150,000	184,903	Yes		1			
16	Alt Rev Recognition	43	73	250,000	800,757	Yes		1			
17	Business Contingency Optimization										
18	CD Advanced Manufacturing System	32	33	450,000	139,877	Yes		1			
19	CD Business Contingency Compliance	32	65	225,000	29,000	Yes		1			
20	CD Disaster Recovery System	29	82	145,000	77,449	Yes		1			
21	CD HIPAA Compliance System	59	33	220,000		Yes		1			
22	CD Knowledge Mngmt	61	68	755,000	142,667	Yes		1			
23	CD Learning Management	51	53	180,000		Yes		1			
24	CD Marketing Data Integration	50	43	150,000	50,741	Yes		1			
25	CD Requirements System	89	63	186,000	18,556	Yes		1			
26	CRM Implementation	81	58	197,000	338,362	Yes		1			

Portfolio Selection Efficient Frontier Results

Ready 85%

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

Define Assumption Define Decision Define Forecast Copy Paste Select Freeze Cell Prefs Run Preferences Trials: 1000 Save or Restore View Charts Create Report Extract Data Analyze

G4 =SUMPRODUCT(G13:G47,J13:J47)

Define Forecast: Cell G4

Name: NPV

Units:

LSL: USL:

Target:

OK Cancel Help

	Alt	ERM Auditor	Alt	General Ledger (ERP)	Alt	Procure On-line	Alt	Rev Recognition	Business Contingency Optimization	CD	Advanced Manufacturing System	CD	Business Contingency Compliance	CD	Disaster Recovery System	CD	HIPAA Compliance System	CD	Knowledge Mngmt	CD	Learning Management	CD	Marketing Data Integration	CD	Requirements System	CRM	Implementation
36	80	550,000	236,821	Yes																							
53	33	150,000	184,903	Yes																							
43	73	250,000	800,757	Yes																							
32	33	450,000	139,877	Yes																							
32	65	225,000	29,000	Yes																							
29	82	145,000	77,449	Yes																							
59	33	220,000		Yes																							
61	68	755,000	142,667	Yes																							
51	53	180,000		Yes																							
50	43	150,000	50,741	Yes																							
89	63	186,000	18,556	Yes																							
81	58	197,000	338,362	Yes																							

Portfolio Selection Efficient Frontier Results

Ready 85%

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

Define Assumption Define Decision Define Forecast Define Copy Paste Clear Select Freeze Cell Prefs Run Preferences Trials: 1000 Save or Restore View Charts Create Report Extract Data Analyze

G4 $\text{=SUMPRODUCT(G13:G47,J13:J47)}$

	C	D	E	F	G	H	I	J	K	L	M
3	Adjustments Required For Running Optimization	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV			Number of Projects Selected			
4		51	53	9,781,500	4,700,738			34			
5	Min	50	65								
6	Max										
7	Adjusted Min	1700	2210								
8	Now let's set up our optimization.										
9											
10											
11	Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Project Approval		Decision Variable			
12	Current Initiatives and Proposals	51	53	9781500	4700738						
13	Alt ERM Auditor	58	55	184,000	343,452	Yes		1			
14	Alt General Ledger (ERP)	36	80	550,000	236,821	Yes		1			
15	Alt Procure On-line	53	33	150,000	184,903	Yes		1			
16	Alt Rev Recognition	43	73	250,000	800,757	Yes		1			
17	Business Contingency Optimization										
18	CD Advanced Manufacturing System	32	33	450,000	139,877	Yes		1			
19	CD Business Contingency Compliance	32	65	225,000	29,000	Yes		1			
20	CD Disaster Recovery System	29	82	145,000	77,449	Yes		1			
21	CD HIPAA Compliance System	59	33	220,000		Yes		1			
22	CD Knowledge Mngmt	61	68	755,000	142,667	Yes		1			
23	CD Learning Management	51	53	180,000		Yes		1			
24	CD Marketing Data Integration	50	43	150,000	50,741	Yes		1			
25	CD Requirements System	89	63	186,000	18,556	Yes		1			
26	CRM Implementation	81	58	197,000	338,362	Yes		1			

Portfolio Selection Efficient Frontier Results

Ready 85%

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

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OptQuest

Welcome

Objectives

Decision Variables

Constraints

Options

Select an objective and optionally specify requirements

Primary workbook: Primavera_Portfolio_Optimization_f

Objectives: ? Exclude

Maximize the Mean of NPV ☐

We define the objective: Maximize the mean of the portfolio value.

Requirement Exclude

(optional requirement, or necessity) ☐

Add Objective Add Requirement Efficient Frontier Import... Delete

< Back Next > Run Close Help

24 CD Marketing Data Integration 50 43 150,000 50,741 Yes 1

Portfolio Selection Efficient Frontier Results

Ready Calculate 85%

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

OptQuest

Welcome
Objectives
Decision Variables
Constraints
Options

Optionally, specify constraints on the decision variables

☐ Advanced entry

Constraints	Type	Exclude
1 Strategy Score must be greater than minimum 'Portfolio Selection'!D9 >= 'Portfolio Selection'!D7	Linear	<input type="checkbox"/>
2 Total Planned Costs must be less than maximum 'Portfolio Selection'!F4 <= 'Portfolio Selection'!F8	Linear	<input type="checkbox"/>
3 Pick at least 1 project to prevent divide by zero errors	Linear	<input type="checkbox"/>
We also specify constraints for the optimization, such as budget limits.	Linear	<input type="checkbox"/>
5 Risk Constraint for Efficient Frontier 'Portfolio Selection'!E4 >= 0 Efficient Frontier: vary the bound from 50 to 70 in steps of 5	Non-linear	<input checked="" type="checkbox"/>

Add Constraint Add Comment... Efficient Frontier Delete

< Back Next > Run Close Help

24 CD Marketing Data Integration 50 43 150,000 50,741 Yes 1

Portfolio Selection Efficient Frontier Results

Ready Calculate 85%

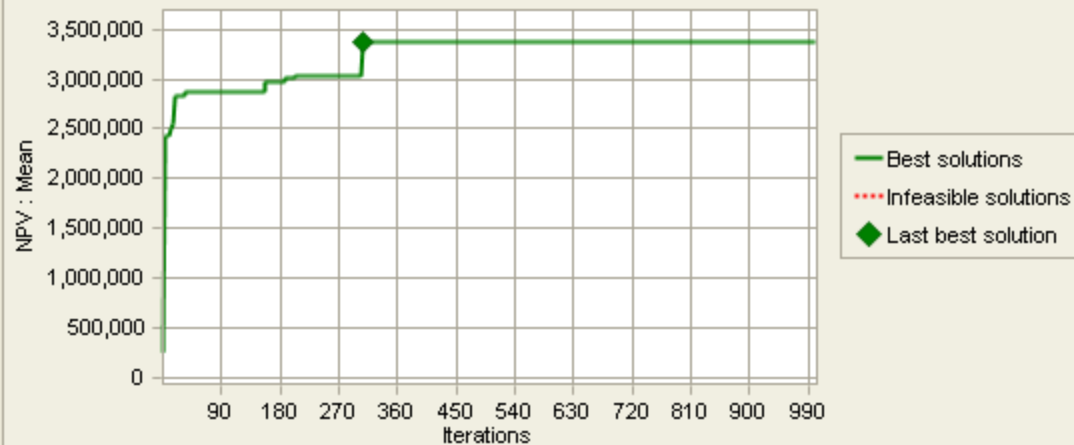
OptQuest Results

Edit View Analyze Preferences Help

1000 Iterations

Best Solution View

Performance Chart



Best Solution:

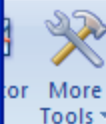
Iteration # 306

Objectives	Value
Maximize the Mean of NPV	3,364,877

Requirements	Value
--------------	-------

Constraints	Left Side		Right Side
Strategy Score must be greater than minimum	684	>=	650
Total Planned Costs must be less than maximum	3875500	<=	4000000
Pick at least 1 project to prevent divide by zero errors	13	>=	1

Crystal Ball



Help

Resources

About

Help

Number of
Projects
Selected

13

Decision
Variable

1
1
0
1
0
0
1
0
1
0
0

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Select Freeze Cell Prefs Run Preferences Trials: 1000 Save or Restore View Charts Create Report Extract Data OptQuest Predictor More Tools Help Resources About

J13 fx 1

Adjustments Required For Running Optimization	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Number of Projects Selected
	55	65	3,975,500	3,074,520	14
<p>Once the optimization is complete, the results are automatically pasted into the spreadsheet.</p> <p>We want to copy those results back into our Scorecard.</p>					
<i>Current Initiatives and Projects</i>					
Alt ERM Auditor					1
Alt General Ledger (ERP)					1
Alt Procure On line					0
Alt Rev Recognition	43	73	250,000	800,757	Yes
Business Contingency Optimization					1
CD Advanced Manufacturing System	32	33	450,000	139,877	No
CD Business Contingency Compliance	32	65	225,000	29,000	No
CD Disaster Recovery System	29	82	145,000	77,449	Yes
CD HIPAA Compliance System	59	33	220,000		No
CD Knowledge Mngmt	61	68	755,000	142,667	Yes
CD Learning Management	51	53	180,000		No
CD Marketing Data Integration	50	43	150,000	50,741	No

Portfolio Selection Efficient Frontier Results

Ready

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Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV
Current Initiatives and Proposals				
1 Alt - ERM Auditor				
2 Alt - General Ledger (E				
3 Alt - Procure On-line				
4 Alt - Rev Recognition	43	73	250,000	800,757
5 Business Contingency Optimization	—	—	—	—
6 CD - Advanced Manufacturing System	32	33	450,000	139,877
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13 CD - Requirements System	89	63	186,000	18,556
14 CRM Implementation	81	58	197,000	338,362
15 Decomm - APC Plant Control	53	55	67,500	224,853

Select the Scorecard to which you will paste the results of the optimization.

Item:Alt - ERM Auditor 1/35

Local intranet

Primavera ProSight - Scorecard: Optimization Selection - Windows Internet Explorer

http://localhost:120/ProSight/Portfolios/View.htm?window=sc&itemID=7488scID=290

File Edit View Favorites Tools Help

SnagIt

Primavera ProSight - Scorecard: Optimization Selection

PRIMAVERA ProSight Administrator, System | Mon

INVESTOR SCORECARD WORKBOOK FORMS DASHBOARDS TO-DO Setup | Admin | Optimize

Scorecard: Optimization Selection Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard | Collaborate | View | User | Setup | Tools | Help

Items	Strategy Score	Risk Score %	Total Planned Cost	NPV	Selected
Current Initiatives and					
1 Alt - ERM Auditor					
2 Alt - General Ledger					
3 Alt - Procure On-line					
4 Alt - Rev Recognition	43	73	250,000	800,757	
5 Business Contingency Optimization	—	—	—	—	
6 CD - Advanced Manufacturing System	32	33	450,000	139,877	
7 CD - Business Contingency Compliance	32	65	225,000	29,000	
8 CD - Disaster Recovery System	29	82	145,000	77,449	
9 CD - HIPAA Compliance System	59	33	220,000	—	
10 CD - Knowledge Mngmt	61	68	755,000	142,667	
11 CD - Learning Management	51	53	180,000	—	
12 CD - Marketing Data Integration	50	43	150,000	50,741	
13 CD - Requirements System	89	63	186,000	18,556	
14 CRM Implementation	81	58	197,000	338,362	
15 Decomm - APC Plant Control	53	55	67,500	224,853	

Item: Alt - ERM Auditor 1/35 Category: Selected 5/5

Local intranet

We've created a copy of our Optimization Scorecard and added a Category called Selected. We'll paste the results there.

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

Select Freeze Cell Prefs Run Preferences Trials: 1000 Save or Restore Run View Charts Create Report Extract Data OptQuest Predictor More Tools Help Resources About

H13 $=IF(J13=1,"Yes","No")$

	A	B	C	D	E	F	G	H	I	J	K	L	M
22			CD Knowledge Mngmt	61	68	755,000	142,667	Yes		1			
23			CD Learning Management	51	53	180,000		No					
24			CD Marketing Data Integration	50	43	150,000	50,741	No					
25			CD Requirements System	89	63	186,000	18,556	Yes					
26			CRM Implementation	81	58	197,000	338,362	Yes					
27			Decomm APC Plant Control	53	55	67,500	224,853	Yes					
28			Decomm Clinical Trials	36	67	225,000	-20,000	No					
29			Decomm E mail (Lotus Notes)	23	50	450,000	15,174	No					
30			Decomm Fixed Assets	54	33	338,000	158,889	No					
31			Decomm General Ledger	36	70	491,000	123,148	Yes					
32			Decomm Global Integration (INF)	63	35		180,041	Yes					
33			Decomm HR Web	69	33	296,000	85,889	No					
34			Decomm Web Unified Security	54	33	405,000	28,305	No					
35			In Dev Customer Billing	72	77	290,000	161,954	Yes					
36			In Dev DB2 to Oracle Migration	36	33	310,000	144,074	No					
37			In Dev Federal Gov't Compliance System	65	63	350,000	35,185	Yes					
38			In Dev Help Desk Integration	53	33	110,000	65,185	No					
39			In Dev Server Farm Consolidation	50	52	230,000	150,000	No					
40			In Dev Supply Chain	86	33	280,000	89,959	No					
41			In Dev Web Security Services	51	67	310,000	244,979	Yes					
42			Upgrd Collections Mgmt	40	33	250,000	505,583	No					
43			Upgrd Help Desk	36	53	150,000	110,741	No					
44			Upgrd MS Office	37	38	250,000	192,990	No					
45			Upgrd Network Integration	60	67	162,000	-50,000	No					
46			Upgrd Partner Extranet	58	60	975,000	-255,092	No					
47			zDecomm Accts Receivable (Legacy)	35	67	200,000	146,296	Yes					
48													

Portfolio Selection Efficient Frontier Results

Ready Count: 35

Primavera ProSight - Scorecard: Optimization Selection - Windows Internet Explorer

http://localhost:120/ProSight/Portfolios/View.htm?window=sc&itemID=748&scID=290

File Edit View Favorites Tools Help

Primavera ProSight - Scorecard: Optimization Selection

Administrator, System | Mon

INVESTOR SCORECARD WORKBOOK FORMS DASHBOARDS TO-DO Setup Admin Optimize

Scorecard: Optimization Selection Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | **Clipboard** | Collaborate | View | User | Setup | Tools | Help

- Select Entire Scorecard
- Select All Cells
- Copy
- Paste
- Clear

		Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Selected
Current Initiative		51	53	9,781,500	4,700,738	—
1	Alt - ERM Auditor	58	55	184,000	343,452	—
2	Alt - General Ledger (ERP)				236,821	—
3	Alt - Procure On-line				184,903	—
4	Alt - Rev Recognition	43	73	250,000	800,757	—
5	Business Contingency Optimization	—	—	—	—	—
6	CD - Advanced Manufacturing System	32	33	450,000	139,877	—
7	CD - Business Contingency Compliance	32	65	225,000	29,000	—
8	CD - Disaster Recovery System	29	82	145,000	77,449	—
9	CD - HIPAA Compliance System	59	33	220,000	—	—
10	CD - Knowledge Mngmt	61	68	755,000	142,667	—
11	CD - Learning Management	51	53	180,000	—	—
12	CD - Marketing Data Integration	50	43	150,000	50,741	—
13	CD - Requirements System	89	63	186,000	18,556	—
14	CRM Implementation	81	58	197,000	338,362	—
15	Decomm - APC Plant Control	53	55	67,500	224,853	—

Select Clipboard, then Paste.

javascript:void('Clipboard')

Local intranet

Primavera ProSight - Scorecard: Optimization Selection - Windows Internet Explorer

http://localhost:120/ProSight/Portfolios/View.htm?window=sc&itemID=7488scID=290

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SnagIt

Primavera ProSight - Scorecard: Optimization Selection

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INVESTOR SCORECARD WORKBOOK FORMS DASHBOARDS TO-DO Setup | Admin | Optimize

Scorecard: Optimization Selection Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard Collaborate | View | User | Setup | Tools | Help

Items	Strategy	NPV	Selected		
Current Initiatives and Proposals					
1 Alt - ERM Auditor			Yes		
2 Alt - General Ledger (GL)			Yes		
3 Alt - Procure On-line			No		
4 Alt - Rev Recognition		800,757	Yes		
5 Business Contingency Optimization		-	No		
6 CD - Advanced Manufacturing System		139,877	No		
7 CD - Business Contingency Compliance		29,000	No		
8 CD - Disaster Recovery System		77,449	Yes		
9 CD - HIPAA Compliance System		-	No		
10 CD - Knowledge Mngmt		142,667	Yes		
11 CD - Learning Management	51	53	180,000	No	
12 CD - Marketing Data Integration	50	43	150,000	50,741	No
13 CD - Requirements System	89	63	186,000	18,556	Yes
14 CRM Implementation	81	58	197,000	338,362	Yes
15 Decomm - APC Plant Control	53	55	67,500	224,853	Yes

Verifv Paste

20 Unchanged value
15 New value
0 New value with adjustment

Report... Accept Reject

The results are pasted in the Selected Category.

Rows 35 x 1 Columns

Local intranet

Primavera ProSight - Scorecard: Optimization Selection - Windows Internet Explorer

http://localhost:120/ProSight/Portfolios/View.htm?window=sc&itemID=748&scID=290

File Edit View Favorites Tools Help

Primavera ProSight - Scorecard: Optimization Selection

PRIMAVERA ProSight Administrator, System | Mon

INVESTOR SCORECARD WORKBOOK FORMS DASHBOARDS TO-DO Setup | Admin | Optimize

Scorecard: Optimization Selection Portfolio: Current Initiatives and Proposals

Scorecard | Portfolio | Clipboard Collaborate | View | User | Setup | Tools | Help

Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Selected
Current Initiatives and Proposals					No
1 Alt - ERM Auditor					Yes
2 Alt - General Ledger (ERP)					Yes
3 Alt - Procure On-line					No
4 Alt - Rev Recognition					Yes
5 Business Contingency Optimi					No
6 CD - Advanced Manufacturing					No
7 CD - Business Contingency Co					No
8 CD - Disaster Recovery Syste					Yes
9 CD - HIPAA Compliance Syste					No
10 CD - Knowledge Mngmt	61	68	755,000	142,667	Yes
11 CD - Learning Management	51	53	180,000		No
12 CD - Marketing Data Integration	50	43	150,000	50,741	No
13 CD - Requirements System	89	63	186,000	18,556	Yes
14 CRM Implementation	81	58	197,000	338,362	Yes
15 Decomm - APC Plant Control	53	55	67,500	224,853	Yes

Rows 35 x 1 Columns

Local intranet

We've already created a Portfolio called Optimized Initiatives. This Portfolio contains a scheduled query that will keep only those items selected as "yes" by the optimization.

Primavera ProSight - Scorecard: Optimization Selection - Windows Internet Explorer

http://localhost:120/ProSight/Portfolios/View.htm?window=sc&itemID=1205&scID=290

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Primavera ProSight - Scorecard: Optimization Selection

PRIMAVERA ProSight Administrator, System | Mon

INVESTOR SCORECARD WORKBOOK FORMS DASHBOARDS TO-DO Setup | Admin | Optimize

Scorecard: Optimization Selection Portfolio: Optimized Initiatives

Scorecard | Portfolio | Clipboard | Collaborate | View | User | Setup | Tools | Help

Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Selected
Optimized Initiatives	55	65	3,975,500	3,074,520	Yes
1 Alt - ERM Auditor	58	55	184,000	343,452	Yes
2 Alt - General Ledger (ERP)	36	80	550,000	236,821	Yes
3 Alt - Rev Recognition	43	73	350,000	800,757	Yes
4 CD - Disaster Recovery System				77,449	Yes
5 CD - Knowledge Mngmt				142,667	Yes
6 CD - Requirements System				18,556	Yes
7 CRM Implementation	81	58	197,000	338,362	Yes
8 Decomm - APC Plant Control	53	55	67,500	224,853	Yes
9 Decomm - General Ledger	36	70	491,000	123,148	Yes
10 Decomm - Global Integration (INF)	63	35	-	180,041	Yes
11 In Dev - Customer Billing	72	77	290,000	161,954	Yes
12 In Dev - Federal Gov't Compliance System	65	63	350,000	35,185	Yes
13 In Dev - Web Security Services	51	67	310,000	244,979	Yes
14 zDecomm - Accts Receivable (Legacy)	35	67	200,000	146,296	Yes

Finally, we view our complete optimized Portfolio.

14 items in portfolio 'Optimized Initiatives'

Local intranet

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J13 fx 1

We've just run an optimization to maximize the value of the portfolio, given a specific set of constraints.

But what if we would like to loosen or tighten one of our constraints?

If we accepted more risk, we could converge on a portfolio with a higher value. Conversely, we might accept a lower value portfolio in exchange for less risk.

Adjustments Rec Optim

Number of Projects Selected 14

Decision Variable

Alt ERM Auditor	1
Alt General Ledger	1
Alt Procure On line	0
Alt Rev Recognition	1
Business Contingency	0
CD Advanced Manu	0
CD Business Contingency Compliance	0
CD Disaster Recovery System	1
CD HIPAA Compliance System	0
CD Knowledge Mngmt	1
CD Learning Management	0
CD Marketing Data Integration	0

Portfolio Selection Efficient Frontier Results

Primavera_Portfolio_Optimization_format_2.xlsx - Microsoft Excel

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Select Freeze Cell Prefs Run Preferences Trials: 1000 Save or Restore View Charts Create Report Extract Data OptQuest Predictor More Tools Help Resources About

J13 fx 1

That capability, called the Efficient Frontier, is available in the software.

Let's quickly step through the optimization.

Adjustments Rec Optim

Number of Projects Selected 14

Items	Strategy Score	Risk Score %	Total Planned Cost (\$)	NPV	Project Approval	Decision Variable
Current Initiatives and Proposals	51	53	9781500	4700738		
Alt ERM Auditor	58	55	184,000	343,452	Yes	1
Alt General Ledger (ERP)	36	80	550,000	236,821	Yes	1
Alt Procure On line	53	33	150,000	184,903	No	0
Alt Rev Recognition	43	73	250,000	800,757	Yes	1
Business Contingency Optimization						
CD Advanced Manufacturing System	32	33	450,000	139,877	No	0
CD Business Contingency Compliance	32	65	225,000	29,000	No	0
CD Disaster Recovery System	29	82	145,000	77,449	Yes	1
CD HIPAA Compliance System	59	33	220,000		No	0
CD Knowledge Mngmt	61	68	755,000	142,667	Yes	1
CD Learning Management	51	53	180,000		No	0
CD Marketing Data Integration	50	43	150,000	50,741	No	0

Portfolio Selection Efficient Frontier Results

Ready

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OptQuest

Welcome
Objectives
Decision Variables
Constraints
Options

Optionally, specify constraints on the decision variables

☐ Advanced entry

Constraints	Type	Exclude
1 <i>St</i>	Linear	<input type="checkbox"/>
2 <i>To</i>	Linear	<input type="checkbox"/>
3 <i>Pi</i>	Linear	<input type="checkbox"/>
4 <i>Ri</i>	Linear	<input checked="" type="checkbox"/>
5 <i>Risk Constraint for Efficient Frontier</i> <u>'Portfolio Selection'!E4</u> \geq 0 Efficient Frontier: vary the bound from 50 to 70 in steps of 5	Non-linear	<input type="checkbox"/>

OK Clear Cancel

Add Constraint Add Comment... Efficient Frontier Delete

< Back Next > Run Close Help

CD Learning management 50 43 150,000 50,741 No 0

Portfolio Selection Efficient Frontier Results

Ready Calculate

85%

We set a variable bound for our risk constraint, and will let the software run through multiple optimizations to find the different risk-related portfolios.

Highlight Box (630 x 84) (X:153; Y:386)

OptQuest Results

Edit View Analyze Preferences Help

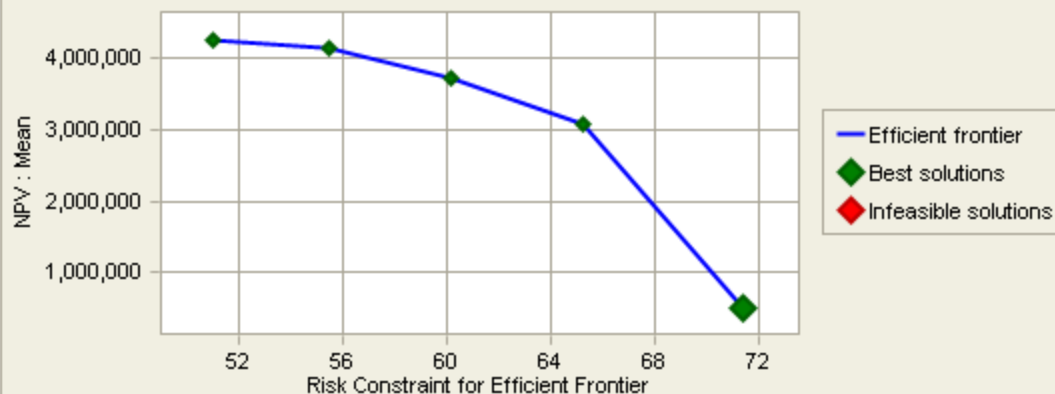
852 Iterations

Best Solution View

Efficient Frontier

Performance Chart

Efficient Frontier



Best Solution:

View test point:

70

Iteration # 838

Objectives

Value

Maximize the Mean of NPV

520,479

Requirements

Value

Constraints

Left Side

Right Side

Strategy Score must be greater than minimum

269

>=

250

Total Planned Costs must be less than maximum

1742000

<=

4000000

Pick at least 1 project to prevent divide by zero errors

5

>=

1

Crystal Ball



More Tools

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About

Help

Number of
Projects
Selected

7

Decision
Variable1
1
0
0
0
0
0
0
0
0
0
0

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Home Insert Page Layout Formulas Data Review View Developer Add-Ins Hyperion Crystal Ball

Define Assumption Define Decision Define Forecast Define

Copy Paste Clear Select Freeze Cell Prefs

Start Stop Reset Step Run Preferences Trials: 1000 Save or Restore

View Charts Create Report Extract Data Analyze

H8 3364877

Efficient Frontier	Solution	Number of Projects Selected
Efficient Frontier 1		18
Efficient Frontier 2		18
Efficient Frontier 3		16
Efficient Frontier 4		13
Efficient Frontier 5		9



Efficient Frontier lets you run multiple optimizations, each of which yields a different optimal portfolio, depending on how much risk you choose.

Portfolio	Efficient Frontier 4	Efficient Frontier 5
Alt ERM Auditor	1	1
Alt General Ledger (ERP)	1	1
Alt Procure Online	0	0
Alt Rev Recognition	1	1
Business Contingency Optimization	0	0
CD Advanced Manufacturing Sys	0	0
CD Business Contingency Compliance	0	0
CD Disaster Recovery System	1	1
CD HIPAA Compliance System	0	0
CD Knowledge Mngmt	1	1
CD Learning Management	0	0

You can copy the results of one or more risk assessed portfolios back to Primavera Portfolio Management.

Portfolio Selection Efficient Frontier Results

Ready 85%

- 
- In our demonstration, we've just seen that adding the ability to optimally select items in a portfolio to meet a specific objective, while complying with constraints and requirements extends the effectiveness of portfolio management.
- 



FOR MORE INFORMATION...

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- × 514-278-2221 (Local)
- × 514-278-5060 (Fax)

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