Dynamic Analysis

Overview

Dynamic Sensitivity analysis is used to dynamically change the priorities of the objectives to determine how these changes affect the priorities of the alternative choices.

0	Dynamic	MANAGE MOD	ELS A DEFINE MODEL	COLLECT INPUT		ALLOCATE	REPORTS	🕄 🖸 🙆
₽	C :			-				
Sample IT Portfolio Optimization Dynamic Analysis for All Participants								
-	With respect to Goal: Optimize 11 Portfolio 10 Improve Performance							
		Keewledge	Leverage Knowledge	,	27.70%	AS/400 Rep	lacements	52.74%
	Leverage	Knowledge	Improve Organizational Effici	apov	21.06%	Cisco Bouto	re	61 76%
	Vendo	r/Partner Access	Improve Organizational Enici	ency	21.00%	CISCO ROULE	15	01.70%
	Custon	ner Access/Ser	Maintain Serviceability		10.07%	Customer Se	ervice Call Center	60.38%
	Interna	I Access	Minimize Risks		19.85%	Desktop Ret	placements	49 19%
	Improve (Organizational						
	Improv	e Service Effici	Financials		21.31%	EMC Symm	etrix	52.77%
	Levera	ge Purchasing				Firewall and	Antivirus Licenses	56.75%
Improve Time to Market		e Time to Market				less Manuala	- Dealana Oraniaa	50.00%
Manage Resources		e Resources				Ton Mounta	III Backup Service	59.96%
Maintain Serviceability		Serviceability				Laptop Repl	acements	32.78%
	Scalea	bility				Mobile Work	force Pocket PCs	32.71%
Responsiveness		nsiveness						
Resources		rces				Oracle 9i Up	grade	57.69%
	Minimize	Risks				PeopleSoft U	Jpgrade	45.32%
	Levera	ge Proven Tec				Plumtree Co	rporate Portal	77.52%
	Ensure	Readiness						
						ProServe Sy	stem Upgrade	55.37%
	Shortcuts	a	Advanced mode is OFF ()				© 2007-2019	Expert Choice, Inc. All Rights Reserved
Clic	k 葦	to show/hid	le the toolbar optic	ons:				
Hiera	irchy 🦳	F	ilter Alternatives: D	ecimals:				
L & G Priorities C Show all A			Show all Alternative:	2 V Sort Alternat	ives by: None	Sort Obje	ectives by: None	e V B Show components

By dragging the objective's priorities back and forth in the left column, the priorities of the alternatives will change in the right column.

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	Objectives	Alternatives		
Leverage Knowledge	27.70%	AS/400 Replacements	52.74%	
Improve Organizational Efficiency	y 21.06%	Cisco Routers	61.76%	
Maintain Serviceability	10.07%	Customer Service Call Center	60.38%	
Minimize Risks	19.85%	Desktop Replacements	49.19%	
Financials	21.31%	EMC Symmetrix	52.77%	
		Firewall and Antivirus Licenses	56.75%	
		Iron Mountain Backup Service	59.98%	
		Laptop Replacements	32.78%	
		Mobile Workforce Pocket PCs	32.71%	
		Oracle 9i Upgrade	57.69%	
		PeopleSoft Upgrade	45.32%	
		Plumtree Corporate Portal	77.52%	

The black 🗌 markers on the objective and alternative bars indicate the original objectives and alternatives priorities.

After temporarily changing the priority of one or more of the objectives, you can press the 🖸 reset icon.

By selecting an element in the hierarchy other than the Goal, you can see the results with respect to (WRT) this element rather than the overall results with respect to the goal:

Goal: Optimize IT Portfolio	Objectives		Alternatives	
Leverage Knowledge	Improve Service Efficiencies	22.53%	AS/400 Replacements	52.26%
Vendor/Partner Access	Leverage Purchasing Power	18.15%	Cisco Routers	51.17%
Customer Access/Ser	Improve Time to Market	27.33%	Customer Service Call Center	35.85%
Internal Access				
 Improve Organizational 	Manage Resources	31.99%	Desktop Replacements	40.76%
Improve Service Effici			EMC Symmetrix	58.33%
Leverage Purchasing			Firewall and Antivirus Licenses	38.32%
Improve Time to Market			laan Mauntain Daalaya Qarailaa	54.029/
Manage Resources			Iron Mountain Backup Service	54.03%
Maintain Serviceability			Laptop Replacements	25.66%
Scaleability			Mobile Workforce Pocket PCs	18.32%
Responsiveness				
Resources			Oracle 9i Upgrade	59.10%
Minimize Risks			PeopleSoft Upgrade	56.85%
Leverage Proven Tec			Plumtree Corporate Portal	70.06%
Ensure Readiness				L
Vendor			ProServe System Upgrade	46.42%
Business			Sales Force Laptops	32.94%

The dynamic analysis above shows all the alternatives priorities with respect to the selected node Improve Organizational Efficiency.

Toggle 🚠 to show/hide the objectives hierarchy/tree at the left.

to show/hide the Local and Global objectives priorities on the objectives hierarchy/tree. Local Global Toggle

Select Participant and Group

You can select to display results for an individual participant or another group using **C**



Clicking the **PR** button will open a window where you can select a participant or a group.

You can use the prev \checkmark and next > buttons to cycle through each participant or group.

Alternative Components

Show components displays the breakdown of each of the objective's contributions or share to the priority of each of the alternatives.

Objectives	
Leverage Knowledge	27.70%
Improve Organizational Efficiency	21.06%
Maintain Serviceability	10.07%
Minimize Risks	19.85%
Financials	21.31%

Alternatives					
AS/400 Replacements	52.74%				
Cisco Routers	61.76%				
Customer Service Call Center	60.38%				
Desktop Replacements	49.19%				
EMC Symmetrix	52.77%				
Firewall and Antivirus Licenses	56.75%				
Iron Mountain Backup Service	59.98%				
Laptop Replacements	32.78%				
Mobile Workforce Pocket PCs	32.71%				
Oracle 9i Upgrade	57.69%				
PeopleSoft Upgrade	45.32%				
Plumtree Corporate Portal	77.52%				

The breakdown colors of the alternative bars at the right corresponds to each of the objectives at the left.

Change Alternatives Color

Clicking on the alternative bar will open a color picker where you can select and change the color assignment.

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Objectives		Alternatives			
Leverage Knowledge	27.70%	AS/400 Replacements	52.74%		
Improve Organizational Efficiency	21.06%	Cisco Routers	61.76%		
Maintain Serviceability	10.07%	Customer Service Call Center	60.38%		
Minimize Risks	19.85%	Desktop Replacements	49.19%		
Financials	21.31%	EMC Symmetrix	52.77%		
		Firewall and Antivirus Licenses	56.75%		
		Iron Mountain Backup Service	59.98%		
		Laptop Replacements	32.78%		
		Mobile Workforce Pocket PCs	32.71%		
		Oracle 9i Upgrade	57.69%		
		PeopleSoft Upgrade	45.32%		
		Plumtree Corporate Portal	77.52%		
		ProServe System Upgrade	55.37%		
		Sales Force Lantons	53 12%		

You can also change colors from the Alternatives and Objectives Grid.

DIDN'T SEE THE OPTION YOU ARE LOOKING FOR? Try enabling the **Advanced Mode** switch at the bottom of the page; this will show the **advanced options on this page**.

When the <u>Advanced mode</u> is ON, you will see the advanced options on this page:

Hierarchy 💽	Filter Alternatives:	Normalize Options:	● Ideal □ CIS	Decimals:
L & G Priorities 🔘 🕻 🍋 🔪	Show all Alternative:	Unnormalized V	O Distributive D User Priorities	2 🗸
Sort Alternatives by: None	Sort Objectives by:	None 🔽 🔚 🗆	Show components 🗹 Show Ma	arkers

Using Markers

The \Box Show Markers option displays red \Box and blue \Box markers on the alternatives bars which indicate the alternative priority when the selected objective is dragged to the maximum (100%) or minimum (0%) respectively.

Financials	21.31%	AS/400 Replacements	52.74%
Improve Organizational Efficiency	21.06%	Cisco Bouters	61 76%
	21.0070		01.70%
Leverage Knowledge	27.70%	Customer Service Call Center	60.38%
	40.070	Dealthe Dealth and the	10 1001
Maintain Serviceability	10.07%	Desktop Replacements	49.19%
Minimize Risks	19.85%	EMC Symmetrix	52.77%

The selected objective in the example above is "Financials" as indicated by its light gray background.

When the "Financials" bar is dragged to the maximum (100%), the alternative bars at the right will be filled up to where the red marker is. When it is dragged to the minimum (0%), the alternative bars at the right will be filled up to where the blue marker is.

Depending on the alternative, red might be on the right and blue on the left, or vice-versa.

Ideal and Distributive Synthesis

Results can be computed as an Ideal mode (default) or Distributive mode synthesis.

Ideal

Distributive

Originally, AHP had only one synthesis mode – later called the "distributive" synthesis mode. A distributive synthesis distributes priorities from the goal down through the alternatives and is analogous to dividing priorities in a pie chart, which is intuitive for decision-makers to comprehend. The sum of the global priorities for each alternative with respect to each covering objective represents the overall priority of that alternative. The priorities have ratio scale properties (as well as, of course, interval and ordinal properties), which means that they can be used in making a choice or in allocating resources. This synthesis operation can be thought of as distributing the goals priority of 1.0 to the alternatives under consideration and is today called the distributive synthesis mode. Originally, this was the only synthesis mode of AHP. Critics of AHP pointed out situations where a different synthesis mode is more appropriate.

Aggregating Individual Priorities (AIP)

Clicking the **AIP** check-box will show results based on aggregating individual priorities, known as AIP, instead of aggregating individual judgments (<u>AIJ</u>). When AIP is checked, overall alternative priorities are computed for each participant and then an average of these priorities is computed.

AIP

NOTE: Due to the nature of AIP, objectives charts, objectives grid, and all sensitivity analysis pages are disabled when AIP is selected.

Normalization Options

In Advanced mode, you can select to display results based on various normalization options:

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- Unnormalized: The priority is the sum of the products of each covering objective's global priority times the priority of the alternative with respect to each covering objective. If an alternative has a priority of 1 for every covering objective, it will have an unnormalized priority of 1 and is referred to as an ideal alternative. Note: "Unnormalized" is not available and not applicable when using Distributive mode.
- Normalized for All: Sum to 1 for all the alternatives.
- Percentage of Maximum: The alternative with the highest priority is 1 and all others are a percentage of this.
- Normalized for Selected: Sum to 1 for the selected alternatives.

Combined Input Option (CIS)

If the Combined Input Option (CIS) is ON, then results for individuals are computed by combining the priorities derived from judgments/ratings for which they had roles, with the combined results for any parts of the model where they did not have a role.

CIS

Apply User Priorities

If priorities (weights) have been specified for participants, you can use the "User Priorities" check box which enables you to apply or ignore these priorities in calculating the results.

User Priorities