
Decision Analysis Example

Decision Background

We are in the business of providing healthcare providers with medical equipment, including sophisticated imaging systems, and have done so for more than 20 years. These various devices sometimes breakdown and require replacement parts in a hurry in order for the healthcare providers to meet their commitments to their patients. Healthcare professionals rely on us not only for the quality of our products, but also on the dependability of our maintenance service.

We are seeking a very reliable courier service to deliver urgently required parts to our field engineers nationwide at the moment of need. While some of the parts can be fragile, we would be willing to house them in the courier's stocking locations for faster delivery provided it is cost effective and the facilities are state-of-the-art. When our team was assembled, we were instructed to select a courier service that would help us continue to maintain our reputation for service excellence. Our leadership team made it clear that we will not acquire a courier company or develop this capability internally.

The courier service we select must be able to deliver any day of the year, including weekends and holidays. We favor doing business with companies that are environmentally conscious. Not only do we need to make this decision quickly, the courier service we select must offer quality services at affordable prices.

Our team includes the heads of Inventory Management, Procurement, Logistics, Field Service, and Quality Control.

Clarify Purpose					
State the decision					
What is the fundamental purpose of this choice?		Include			
What specific choice or recommendation needs to be made?		• Choice word (decide, select...) • Result • 1-2 modifiers			
Select a courier company to deliver urgently required service parts.					
Develop objectives		Classify objectives		Screen alternatives through the MUSTs	
What short- and long-term benefits or results do we want? What resources should we use or save? What restrictions influence this choice? What minimums or maximums must we meet? Which objectives need to be clarified? Consider how time, cost, customers, management, etc., influence this choice Be clear and specific Use short statements		Establish measures for each objective (as measured by...) Consider: Time, speed, monetary units, accepted norms, or other hard numbers		Does this alternative meet each MUST objective? Gather and record factual data Determine if Go or No Go Eliminate any No Go alternatives	
		Weigh the WANTS			
		For the other objectives, what is the relative importance of each WANT? (Most important WANT = 10; Others = 1-10, relative to the '10')		<input checked="" type="checkbox"/> • Indicate final choice Total = 390	
				Alternative 1	
Objectives		Measures		Rush-it	Score Weighted score
Delivers within a day after order is placed	Number of hours to deliver after order (24 hours)	M		Can meet the 24-hour delivery requirement	GO
Delivers daily	Delivers everyday of the year (365 days)	M		Delivers 365 days a year	GO
Nationwide operation	Percentage of Postal Codes (100%)	M		Delivers to all postal codes; meets a 100%	GO
Low damage rates	Percentage lower than industry average	10		0.1%; provides packing supplies and packing services	5 50
Track and trace facilities	Timely availability of data (within 24 hours)	9		Newly installed automated system; includes automatic e-mail of pickup-to-delivery information upon request	8 72
Minimize delivery cost	Cost per 20kg/45lb-box	8		\$3/kg (2.2 lbs)	10 80
Maximize order placement methods	Number of order placement methods (online, operator)	7		Via the web or through an operator	10 70
Minimize delivery time	Average delivery time (< 8 hours in cities and suburbs; < 18 hours in rural areas)	5		Approximately 6-7 hours in major cities and suburbs; between 12-18 hours in rural areas	8 40
Recognized for quality and environmental initiatives	International Organization for Standardization (ISO) certified	5		ISO 9001:2008 certified— quality ISO14001:2004 certified— environment	10 50
Maximize years in operation	Number of years in operation (> 3 years)	4		11 years in operation	7 28
Assess Risks				Assess Risks	
Identify adverse consequences				<div>Probability Seriousness</div>	
Start with the highest scoring alternative Imagine you have implemented this alternative What risks are associated with this alternative? What could go wrong, short and long term, with this alternative? What are the implications of being close to a MUST limit or threshold? What information about this alternative might be invalid? What are the implications? Use "If..., then..." format; e.g., If X happens, then Y is the adverse consequence Identify adverse consequences for all alternatives that are close to the best performer				If... fuel prices keep rising M then... they may increase the cost of service or add a fuel surcharge or both M+	
Assess the threat					
How likely is each adverse consequence? (probability—record the rationale; mark each H, M, or L) What level of impact will this adverse consequence have? (seriousness—record the rationale; mark each H, M, or L)				If... they decide to stop providing packing supplies or packing services L then... we will have to stock supplies and pack the parts ourselves, increasing cost and complexity M	
Make Decision					
Make the choice					
Are we willing to accept the risk(s) to gain the benefit of this choice? Can we manage the risk(s) to an acceptable level?		If yes, pick it; If no, repeat for the next best alternative Record and communicate the final choice Plan and take action to implement the chosen alternative Plan how you will manage its risk(s)			
				If... then...	

Evaluate Alternatives									
Generate alternatives									
What different alternatives are available? Review Decision Statement and objectives Consult experts and research many sources Ask stakeholders who will approve or implement					List alternatives without debate Use creative thinking techniques If necessary, combine or design alternatives or consider the status quo				
Use knowledge and experience			OR		Compare alternatives against the WANTS				
Which alternative best satisfies each WANT objective? Examine how each alternative performs against each WANT objective Mark the best performers with an asterisk (*) Each WANT objective should have at least one * The alternative with the most * is the best performer					How well does each alternative perform against each WANT objective? Record supporting data, then for each objective: Find the best performing alternative and give it a score of 10 Score other alternatives (0-10) relative to the best performer Multiply objective weights x scores Add for total weighted scores				
<input checked="" type="checkbox"/> - Indicate final choice Total = 412			<input checked="" type="checkbox"/> - Indicate final choice Total =		<input checked="" type="checkbox"/> - Indicate final choice Total = 258				
Alternative 2			Alternative 3		Alternative 4				
Lightning Speed Score Weighted score			Hare & Son Score Weighted score		PostHaste Score Weighted score				
Can meet the 24-hour delivery requirement GO			Can meet the 24-hour delivery requirement GO		Can meet the 24-hour delivery requirement GO				
Delivers 365 days a year GO			Does not deliver on major holidays NO GO		Delivers 365 days a year GO				
Delivers to all postal codes; meets a 100% GO			Delivers to all postal codes; meets a 100% GO		Delivers to all postal codes; meets a 100% GO				
0.06%; will custom design packing 10 100					0.16%; provides packing supplies 2 20				
Advanced technology; includes real time proof of delivery, data extraction for reports; instant invoicing 10 90					Technology allows for manual tracking from pickup to delivery 5 45				
\$5/kg (2.2 lbs) plus fuel surcharge 6 48					\$4.2/kg (2.2 lbs) plus fuel surcharge 8 64				
Via the web 7 49					Via the web 7 49				
2-6 hours in areas close to a strategic stocking location; has over 400 such locations; charges for stocking vary by location 10 50					Approximately 7 hours in major cities and suburbs; between 16-18 hours in rural areas 8 40				
ISO 9001:2008 certified—quality 7 35					Has a newly installed quality management system; in the process of being audited 4 20				
50+ years in operation 10 40					5 years in operation 5 20				
Assess Risks			Assess Risks		Assess Risks				
If... they are bought out by another company M then... they may decide to concentrate on pallets instead of single box deliveries H+			If... then...		If... then...				
If... we use their strategic stocking locations to warehouse our parts L+ then... our costs could increase significantly depending on location M			If... then...		If... then...				
If... then...			If... then...		If... then...				

