



# **Decision Analysis**

# **Clarify Purpose**

State the decision

What is the fundamental purpose of this choice? What specific choice or recommendation needs to be made? • Choice word (decide, select...) • Result • 1-2 modifiers

influence this choice

**Objectives** 

Include

# **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

Record supporting data, then for each objective:

Multiply objective weights x scores

**Compare alternatives against the WANTs** 

How well does each alternative perform against each WANT objective?

Find the best performing alternative and give it a score of 10

Score other alternatives (0-10) relative to the best performer

#### **Develop objectives** Classify objectives Screen alternatives through the MUS

What short- and long-term benefits or results do we want? Establish measures for each What resources should we use or save? objective (as measured by...) 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.,

Consider: Time, speed, monetary units, accepted norms, or other hard numbers

Measures

If the objective is Mandatory, Measurable, and Realistic, label it a MUST (Select 'MUST' from dropdown)

#### 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')

Use knowledge and experience
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Does this alternative meet each MUST objective? Gather and record factual data Determine if Go or No Go Eliminate any No Go alternatives

# 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

= Indicate final choice

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Add for total weighted scores

score

Seriousness

Score

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= Indicate final choice

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Alternative 4		

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Seriousness

# **Assess Risks**

# **Identify adverse consequences**

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

## **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)

## 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)

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Probability

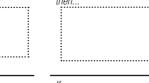
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Probability



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**Assess Risks** 

Probability





#### **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

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### 1 Clarify Purpose

#### When to use Decision Analysis?

Do we need to make a choice?

Does it make a difference which alternative is chosen?

Are we unclear about which alternative is the best?

Do we need the consensus of a group of stakeholders to successfully implement the choice?

Yes to any of the above = use Decision Analysis

#### State the decision

What is the fundamental purpose of this choice?

What specific choice or recommendation needs to be made?

Write a short statement that includes:

Choice word (decide, pick, select...); Result; 1 or 2 key modifiers The words you use will broaden or narrow the range of alternatives

Document the specific attributes that will indicate the objective has been met

#### **Develop objectives**

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

Measures can be subjective

Consider things like time, speed, monetary units, accepted norms, the 'Should', etc.

Involve stakeholders who will approve or implement

Establish measures for each objective (as measured by...)

Determine how the objective will be measured

If subjective, determine who will 'make the call'

What is the relative importance of each WANT?

Identify the most important WANT(s)

#### **Classify objectives into MUSTs and WANTs Weigh the WANTs**

Is this objective.

Mandatory? (required by key stakeholder, regulation, law, policy) Measurable? (has a specific limit or threshold)

Realistic? (can be achieved)

Yes to all 3 = MUST—label (M) All others are WANTs

Give it (them) a weight of 10

Compare others to the 10(s) Assign numbered weights

Confirm weights by comparing to the 10(s)

Which MUST objectives should be reflected in the WANTs?

#### **2** Evaluate Alternatives

## **Generate alternatives**

What different alternatives are available?

Review Decision Statement and objectives

Ask stakeholders who will approve or implement

Use creative thinking techniques

List alternatives without debate If necessary, combine or design alternatives or consider the status quo

## **Screen alternatives through the MUSTs**

Does this alternative meet each MUST objective? Gather and record factual data Determine if Go or No Go Eliminate any No Go alternatives

### Use knowledge and experience

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

## OR

How well does each alternative perform against each WANT objective?

First record factual, accurate supporting data about how well each alternative meets

Consult experts and research many sources

each objective

Then score, starting with the first objective:

Find the best performing alternative and give it a score of 10

Compare the performance of other alternatives and score (0-10) relative to the best

**Compare alternatives against the WANTs** 

Repeat scoring for all remaining objectives

Multiply objective weights x scores Add for total weighted scores

## 3 Assess Risks

#### **Identify adverse consequences**

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?

Start with the highest scoring alternative Imagine you have implemented this alternative

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# **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)

# 4 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)