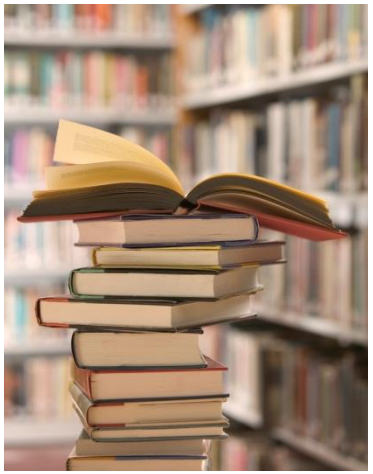
Decision Support: Case Study

USAF
FINANCIAL MANAGEMENT CENTER OF EXPERTISE

"Making the Most of Our Dollars and Sense"

“A good decision is based on knowledge and not on numbers.” - Plato



“It doesn’t matter which side of the fence you get off on sometimes. What matters most is getting off. You cannot make progress without making decisions.” - Jim Rohn

AF 8 Step Process

Runway Degradation

- **Northern Tier AD base**
  - Reserve Fighter Alert mission
  - AD has no flying mission
  - Lots of snow
- **Runway pavement is degrading**
  - FOD increasingly present
  - MX doubled 3 times in past 5 years
  - Shoulders and aprons also in disrepair
  - Minor slope violation at north end of runway
- **Other Issues**
  - AEF cycle starts next October (18 Months)
  - Possible access to special Reserve MILCON funding
  - Wing CC not happy

Identify the Issue

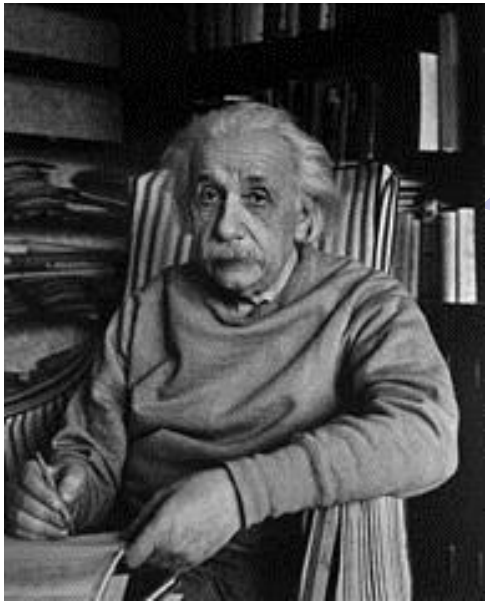
- **Root cause**
  - **Objective statement**
- **Identify the decision maker**
- **Make sure everyone understands the problem**
  - **We all frame issues differently**
  - **Influenced by our**

Assumptions	**Goals**	**Education**
Experience	**Expectations**	**Prejudices**

Task

What should the study do?

- **Objective**
- **Key Assumptions**
- **Alternatives**



"If I had an hour to solve a problem and my life depended on the solution, I would spend the first 55 minutes determining the proper question to ask, for once I know the proper question, I could solve the problem in less than five minutes."

Your Objective/Decision Maker

- **Objective**
- **Determine most efficient method of maintaining runway for the next 10 years**

Key Assumptions

- **Yours**

- **Ours**
  - **Mission must continue – can be relocated**
  - **AEF tasking generates more training next summer**
  - **Normal MILCON takes longer than 18 months**
  - **Special MILCON available if needed**
  - **Local airports available (large and small)**
  - **MX not possible after 5 years**
  - **Construction can be accelerated at a cost**
  - **…**

Alternatives

- **Yours**

- **Ours**
  - **Status Quo**
  - **Resurface only (not MILCON)**
  - **Construction in 2 years (normal MILCON)**
    - Relocate to Commercial Airport, Regional Airport, Sister Base

- **Not Considered**
  - **Construction – Special MILCON (Not Res base)**
  - **Closure for repairs**

AF 8 Step Process

Analysis of Alternatives

- **Must capture both Costs and Benefits**
- **Some activities could be classified as either**
- **Not all categories created equal**
  - **Hard vs. soft costs**
  - **Critical vs. nice benefits**
- **Level of fidelity depends on scope of study**

Alternatives

1. Status Quo
2. Resurface
3. New Construction – Commercial
4. New Construction – Regional
5. New Construction – Sister AFB

Cost Development

- What are the costs for each alternative?
- When do they occur?
- What is your source for the costs?
  - Upon which year are they based?
  - Has your source accounted for inflation?
- Have you considered different types of costs?

Cost Categories

Cost Category	1. Status Quo	2. Resurface	3. New – Commercial	4. New – Regional	5. New – Sister AFB
Construction			X	X	X
Airfield Mx	X	X	X	X	X
TDY					X
Temp Facilities			~	X	
Transportation			~	~	X
Comm Fees			X	X	~
Airport Fees			X	X	
Flying Hours					X
Personnel		X	X	X	X

What is a Benefits Analysis

- **Methodology to capture nonmonetary costs and benefits**
  - **Changes in capability**
  - **Flexibility**
  - **Efficiency**
  - **Security**
  - **Morale**
- **Get input from all parties**
- **Must be included to capture all relevant aspects of alternatives**

Benefits

Benefit Category	Weight	1. Status Quo	2. Resurface	3. New – Commercial	4. New – Regional	5. New – Sister AFB
Aesthetics	**10**	**20%**	**60%**	**80%**	**100%**	**100%**

Benefits

Benefit Category	Weight	1. Status Quo	2. Resurface	3. New – Commercial	4. New – Regional	5. New – Sister AFB
Msn Efficiency	10	20%	60%	80%	100%	100%
Security	7	100%	100%	25%	50%	75%
Repair Quality	5	0%	33%	100%	100%	100%
Flexibility	3	75%	100%	25%	50%	50%
Command Constancy	3	100%	100%	50%	50%	75%
Morale	2	90%	100%	80%	50%	20%
Weighted Total		14.3	20.7	17.0	21.5	24.0

Other Analytical Considerations

- **Our analysis missing risk and stakeholders**
- **Financial risk would be part of sensitivity**
- **What are the non-financial risks**
- **Who are the stakeholders**
  - **Are they important to decision**
  - **Can they influence implementation**
  - **What is their position**

Risk and stakeholders are critical inputs to most decisions

Non-Financial Risks

Risk Assessment						
Description	Impact (H, M, L)	1. Status Quo	2. Resurface	3. New - Commercial	4. New - Regional	5. New - Sister AFB
Mission	**H**	**E**	**H**	**M**	**H**	**M**

Risk Priority Matrix				
IMPACT	HIGH	Moderate Risk	High Risk	EXTREME RISK
	MEDIUM	Low Risk	Moderate Risk	High Risk
	LOW	Negligible Risk	Low Risk	Moderate Risk
		LOW	MEDIUM	HIGH
		PROBABILITY		

Risk Development
ORM Methodology

Risk Assessment						
Description	Impact (H, M, L)	1. Status Quo	2. Resurface	3. New - Commercial	4. New - Regional	5. New - Sister AFB

Risk Priority Matrix				
IMPACT	HIGH	Moderate Risk	High Risk	EXTREME RISK
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		LOW	MEDIUM	HIGH
		PROBABILITY		

Stakeholders

Stakeholder Impact Plan			
Stakeholder	**Impact Ability (H,M,L)**	**Prefered Alternative**	**Key Issues**

AF 8 Step Process

Getting to a Recommendation

- Collect inputs
- Group data
- Round 1: remove some alternatives
- Round 2: contemplate remaining alternatives
- Choose
- Logic check

Reminder

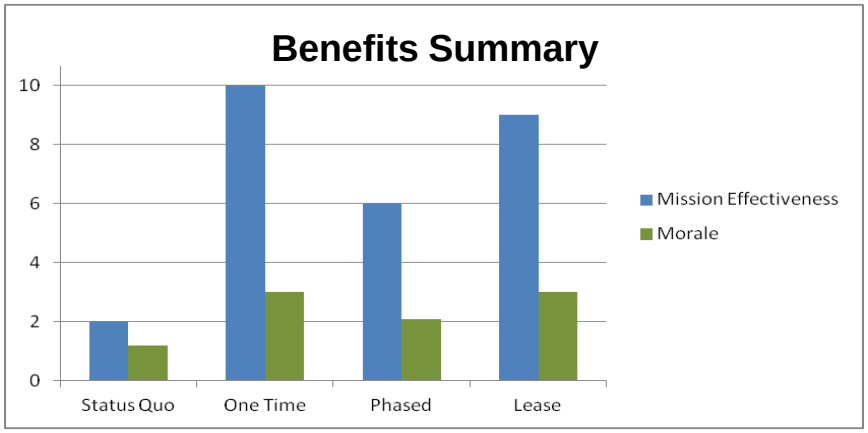
Decision criteria should be identified in the beginning of the decision support process

Collect Inputs

Group Data

- Summarize relevant inputs on slides
- Use colors
- Create bar charts
- Put relevant info on summary chart

	20 Year NPV
Status Quo	$ 2,500,000
One Time Construction	$ 5,500,000
Phase Construction	$ 4,500,000
Lease	$ 6,000,000



Stakeholder Analysis		
Stakeholder	**Preferred Alternative(s)**	**Unfavorable Alternative(s)**
Wing Commander	One time construction	Status Quo
Civil Engineering	One time construction	Status Quo

Pre-Decision Summary

Cost Summary by Appropriation (FY14 $K)

Category	Status Qu	Resurface	Commercial	Regional	Sister AFB
MILCON	-	-	26,010.0	26,010.0	26,010.0
O & M (Local)	9,780.4	4,282.6	845.9	2,136.1	2,344.7
O & M (FH)	-	-	-	-	1,620.0
Opportunity	-	-	2,811.4	2,918.0	-
Totals	9,780.4	4,282.6	29,667.3	31,064.1	29,974.7

Analysis Summary

Category	Status Qu	Resurface	Commercial	Regional	Sister AFB
Benefit	14.3	20.7	17.0	21.5	24.0
Risk	Runway Failure	Runway Failure	Security Flight Ops	Facilities Mission	Minimal
Stake holder	None	BOS Comm	Base Ops	Civ Comm	Reserve HQ

Round 2: Key Questions

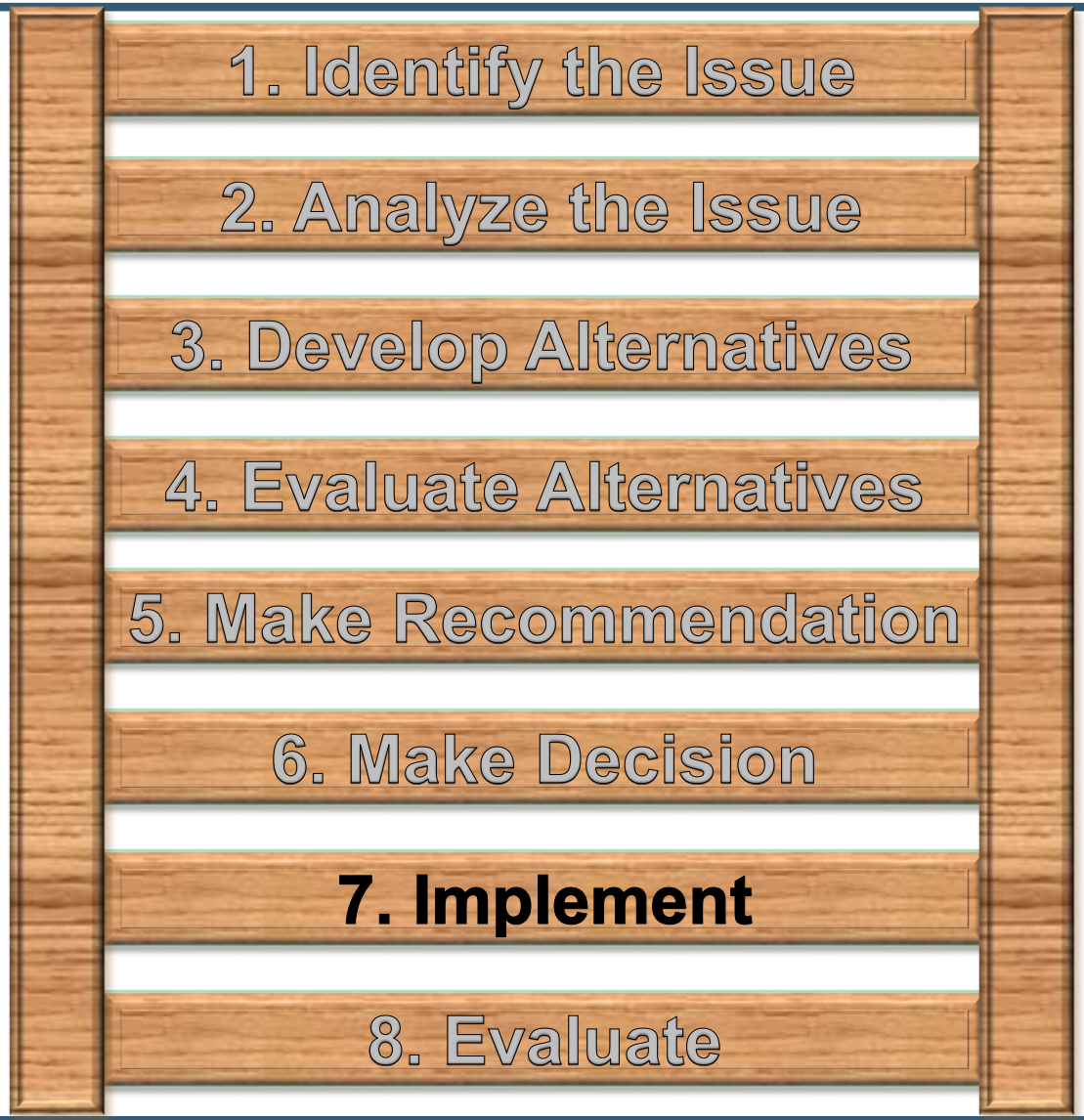
- **Financially viable: Does it make economic/financial sense to pursue, given competing priorities?**
- **Optimal: Are resources being used in the best possible way?**
- **Feasible: Can proposal work given all relevant factors and constraints?**
- **Implementable: What are the associated risks and consequences of acquiring?**

Consider strengths and weaknesses of each alternative

AF 8 Step Process

REGIONAL

AF 8 Step Process



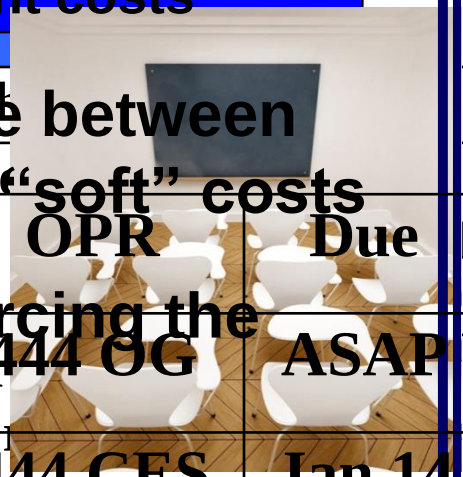
Implementation Plan

- Risk mitigation
- Communication
- Training
- Funding
- Schedule

Describe strategies, activities, and tasks needed for the recommendation

- Funding Needed
  - One time costs
  - Sustainment costs
- Differentiate between "hard" and "soft" costs
- Who is sourcing the funding?
- What colors of money are needed?

Most changes require training



Risk Mitigation Plan					
Descr	Recipients	Messages	Vehicles		
Lack of Fund	Base support agencies	Changes needed to support temp operations	Meet	OPR	Due
Inadequate h	Local community	Changes in operating pro	Social news	444 OG	ASAP
Sec/Invoice	Base personnel and families	Ne work schedules	hall meeting	444 CES	Jan 14
	leadership	community		444 CES	Jan 14
				444 PA	Mar 14
					Leadership

Target audience
Training goals
Deliverables
Inputs/Outputs

Identify Relocation Lead

MILCON Funding Request

Remote Operations Request

Initial Coord w/Community

All are critical to the Decision Support process

Follow-up and Measure

- **How well is the decision being implemented?**
  - **Is the process/change functioning as expected?**
  - **Are people trained?**
  - **Have the stakeholders needs been met?**
- **Has the problem been solved?**
  - **Have metrics been collected and reviewed?**
  - **Was objective met?**

Lessons Learned

- **Helps you improve for the next decision**
  - **General: decision support**
  - **Specific: particular problems**
- **What worked, what didn't work, and why**
- **Implement best practices**
- **Avoid the same mistakes**
- **Collect throughout the process**

Share with others

Summary

- **DS is more than an analytical exercise**
  - **Know who (what level) is making the decision**
  - **Know what decision needs to be made**
- **Different studies for different needs**
  - **Must tailor format/content**
  - **No “correct” answer/structure**
- **True DS requires getting involved early**

QUESTIONS?

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