DAR Basics: Applying Decision Analysis and Resolution in the Real World

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Are you Ready for Something New?

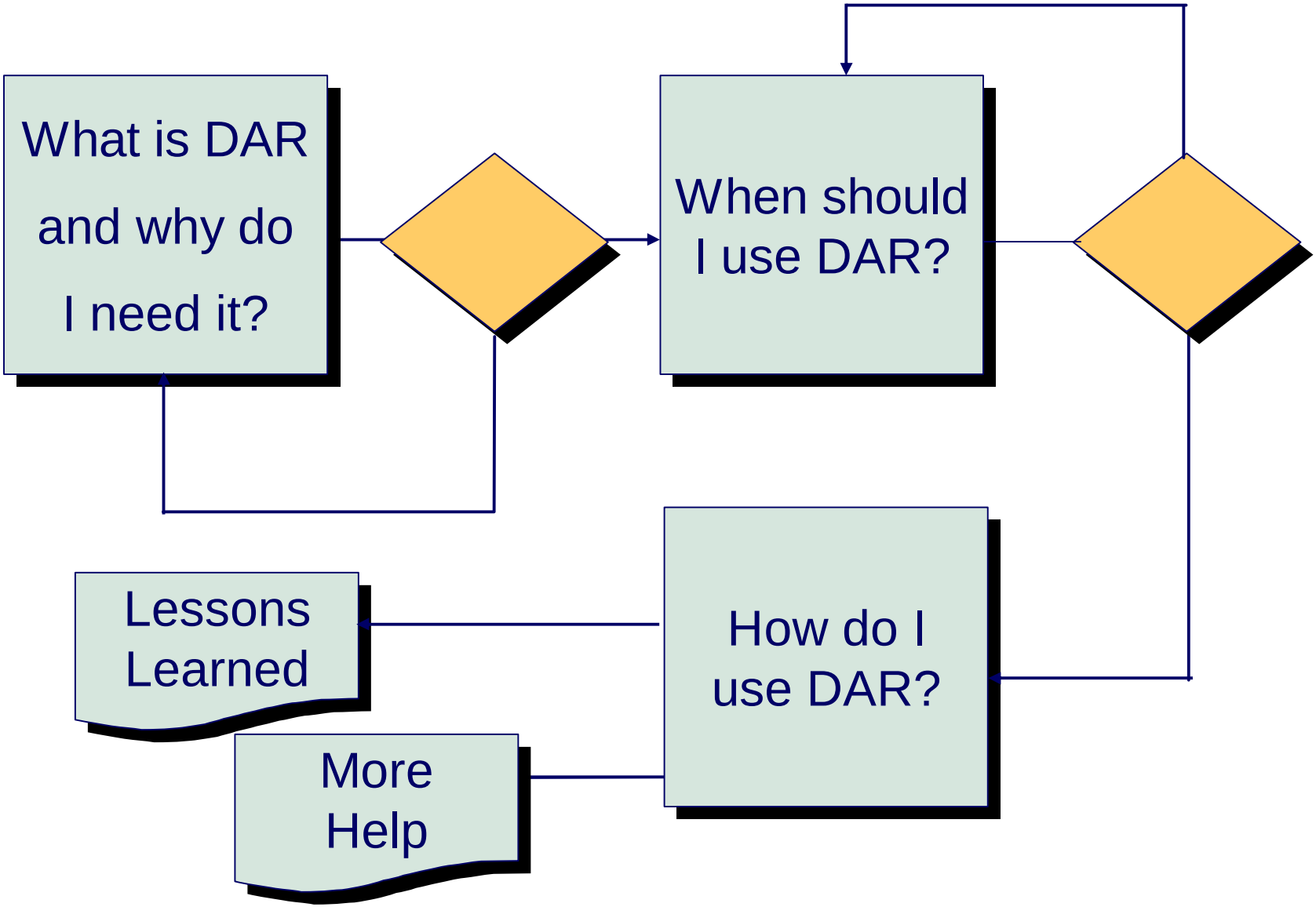
Volunteers Wanted For Hazardous Journey into DAR

Small wages. Paltry rations. 40 minutes of intense thinking. Much unknown. Constant danger. Route unclear. Continual frustration. Normal return doubtful.

No sleeping.

Adapted from The Seven Levels of Change, Rolf Smith

Agenda


What is DAR and why do I need it?
When should I use DAR?
How do I use DAR?
Lessons Learned
More Help

Why do we need a DAR Process?

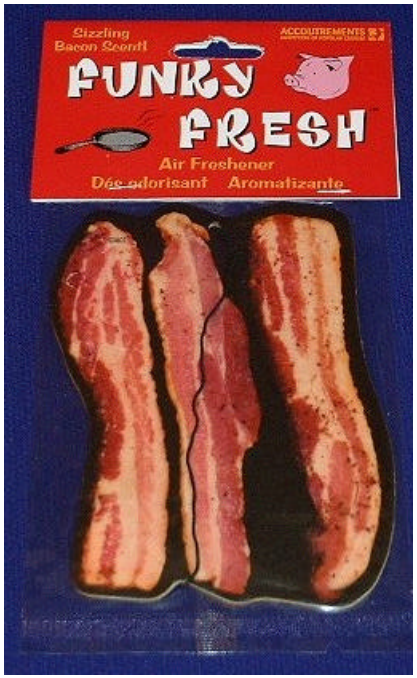
"Intelligent people, when assembled into an organization, will tend to gravitate toward collective stupidity."

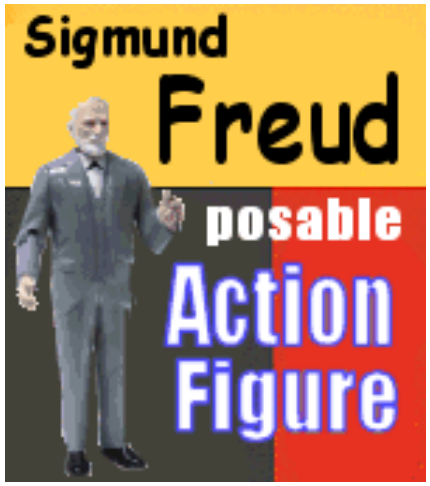
Albrechts's Law

Dopeler Effect –

The tendency of stupid ideas to sound intelligent when they come at you rapidly.

Some Dumb Decisions?





Closer to Home?

- “Let’s just put that app up on the web.”
- “Yeah, we can do that in a few days.”
- “I’m going to send this work over to India – it will be cheaper.”
- “We’ve decided to buy that new reporting package to meet the Sarbanes-Oxley requirements”.
- “Should we go with Linux or Windows?”
- “Let’s let Bill own the operating system – we’ll just license it.”

Context

“You must choose … but choose wisely.”

The Grail Knight, Indiana Jones and the Last Crusade (1989)

Decision Analysis and Resolution?

Definition:

Book Answer - The purpose of Decision Analysis and Resolution is to analyze possible decisions using a formal evaluation process that evaluates identified alternatives against established criteria

In other words – a process to make key decisions in your organization more objectively and wisely.

When Should I use DAR?

(Examples)

Business Decisions:

1. Personnel – hires, promotions, transfers, layoffs
2. Budget Prioritizations
3. Evaluate risks on acquisitions, divestitures, investments, IP
4. Outsource or not? Co-source? In-source? Multi-source?

Technical Decisions:

1. Architectures
2. Products, features (cost-benefit, build/buy)
3. Designs, platforms
4. Process tailoring (including life cycle selection)
5. Technical Solutions
6. Testing approaches

DAR Execution Criteria

Before you execute the process … you will need to have some rules on when to invoke DAR within your projects or the organization.

Criteria might include:

- Business or technology decisions involving greater than a specific dollar amount
- Technical and process life cycle options for any non-trivial new development project
- Selection from among risk handling options for high impact, high probability risks
- Any capital purchase

Basic Decision Making Approaches

Approaches	Primary Dangers	Best Application
Directive: Team leader decides alone and pronounces the decision	Discourages involvement Fosters dependence	Emergency situation Confidential information involved
Consultative: Leader gets ideas from members individually or in a meeting, then decides	Stifles initiative Discourages critical thinking	Time deadline Stalemate Serious conflict
Democratic: Team members vote and majority rules	Win-lose situation Apathy or sabotage	Routine issues Very large team Individual commitment not needed
Consensus: all members participate in a decision that all will support	Takes time Requires skills	Individual commitment needed Synergy Coordination required Interdependence

Adapted from D.H. Stamatis, Six Sigma and Beyond: Foundations of Excellent Performance

A Basic DAR Process

(1) Draft the Decision Statement

On what situation do we need to take an action?

(Examples)

Should we move into this new market area?

Should we expand our current internal network or go wireless?

What server solution should we use?

What goal are we trying to achieve?

(Examples)

Maintain market share or grow market share?

Reduce cost now or over several years?

Minimize technology risk or avoid this risk?

More features, better ease-of-use or lower cost?

Determining the Selection Criteria

"It is more important to know the right questions than the right answers".

James Thurber

(A smart decision is highly dependent on understanding the alternatives and having smart selection criteria.)

(2) Establish Decision Objectives

Results – what, where, when, how much?

(example)

We want to decide between hardware platforms for a new banking application in the Asia/Pacific region and we need this decision in two weeks, and we have a cost limit of $US 75K.

What resources are available?

(example)

Our cost limit is $75K

The hardware must be installed by 30 April 2004

We have 2 FTEs for the install and initial support

We need to maximize availability, maintainability and service support

We need to minimize costs including maintenance, service

(3) Classify the Objectives

Required – what is absolutely critical to the success of the decision <u>and</u> can be measured?

(example)

Cost = $US 75K or less

Delivery = 30 April or sooner

Desired (not all objectives are required)

(example)

2 FTEs or less needed for the install and initial support

High availability system with fault tolerance/redundancy

Compatible with existing HW

Hot swappable components

24 X 6, one hour service support

Annual maintenance less than $15K

Expert Opinion

"In the beginner's mind there are many possibilities, but in the expert's mind there are few."

Shunryu Suzuki

(Use experts to help you determine evaluation criteria).

(4) Value Desired Objectives

Assign a value of 1-10 to each desired objective (10=most important)

(example)

- 2 FTEs or less needed for the install and initial support - (3)
- High availability system with fault tolerance/redundancy - (6)
- Compatible with existing HW - (5)
- Hot swappable components - (9)
- 24 X 6, one hour service support - (8)
- Annual maintenance less than $15K - (6)

(5) Develop the Alternatives

Identify the possible alternatives---

(example)

Vendor A

- Series A-1 servers
- Series A-2 servers

Vendor B

- Series B-1 servers
- Series B-2 servers

Vendor C

- Series C-1 servers
- Series C-2 servers

(6) Test Alternatives against Required Objectives

(Example)

	Cost = $US 75K or less	Delivery = 30 April or sooner
Series A-1 servers	Yes	Yes
Series A-2 servers	Yes	Yes
Series B-1 servers	No	Yes
Series B-2 servers	Yes	Yes
Series C-1 servers	Yes	Yes
Series C-2 servers	Yes	No

(7) Score Alternatives against Desired Objectives

(Example)

	Series A-1	Series A-2	Series B-2	Series C-1
2 FTEs or less needed for the install and initial support - (3)	6	9	8	7
High availability system w/ FT redundancy - (6)	10	7	8	9
Compatible with existing HW - (5)	6	9	10	10
24 X 6, one hour service support - (8)	8	9	9	8
Annual maintenance less than $15K - (6)	9	6	7	8
Hot swappable components - (9)	9	7	7	9

(8) Calculate Value Score

(Example)

	Series A-1	Series A-2	Series B-2	Series C-1
2 FTEs or less needed for the install and initial support - (3)	6 X 3 = 18	9 X 3 = 27	8 X 3 = 24	7 X 3 = 21
High availability system w/ FT redundancy - (6)	10 X 6 = 60	7 X 6 = 42	8 X 6 = 48	9 X 6 = 54
Compatible with existing HW and SW - (5)	6 X 5 = 30	9 X 5 = 45	10 X 5 = 50	10 X 5 = 50
24 X 6, one hour service support - (8)	8 X 8 = 64	9 X 8 = 72	9 X 8 = 72	8 X 8 = 64
Annual maintenance less than $15K - (6)	9 X 6 = 54	6 X 6 = 36	7 X 6 = 42	8 X 6 = 48
Hot swappable components - (9)	9 X 9 = 81	7 X 9 = 63	9 X 9 = 81	9 X 9 = 81

(9) Total the Value Score

(Example)

Series A-1	Series A-2	Series B-2	Series C-1
18	27	24	21
60	42	48	54
30	45	50	50
64	72	72	64
54	36	42	48
81	63	81	81
307	285	317	318

(10) Determine Risks

Consider risks of selected alternative

If alternative C-1 is our choice, what could go wrong?

1. What is the probability?
2. What is the impact?

(Example)

Risk 1: Vendor C currently has low profit and credit ratings; they recently announced 10% employee layoffs. This might impact delivery, service and availability of upgrades/releases.

- Impact = high
- Probability = moderate

(Vendor B has no such risks)

Making the Decision

"When you come to a fork in the road, take it."

- Yogi Berra

(11) Select Best Alternative

Which alternative provides the best benefit at an acceptable risk?

(Example)

Since products B-2 and C-1 have close scores, but C-1 has much higher risk, the best alternative is likely B-2.

B-2

Decision Making Tools and Techniques

Other decision making tools

- Decision Trees
- Six Thinking Hats
- Grid Analysis
- Pareto Analysis
- Cost/Benefit Analysis
- Matched Pairs
- Brainstorming
- Weighted Tables
- Delphi Technique
- Force Field Analysis
- Nominal Group Ranking Technique
- One Half Plus One
- Weighted Multivoting

Lessons Learned from the Field

1. People are generally impatient in decision making
2. Using a formal decision making process is not a natural act
3. Make sure you have criteria in place for *when* to invoke DAR
4. Just getting started is half the battle
5. Implementing is easy – but institutionalizing <u>takes time</u>

(Just DAR It!!!)

Go.... DAR to be Different!

“There's a difference between knowing the path, and walking the path.”

Morpheus, The Matrix (1999)

“I am only doing what I can’t do, so that I may learn to do it”.

Picasso

“Never be afraid to try something new. Remember that a lone amateur built the Ark. A large group of professionals built the Titanic.”

Dave Barry

For More Information

See handout of decision making tools (brainstorming, weighted lists, decision trees, Delphi, cost-benefit analysis, etc.) and their descriptions.

"There are two types of knowledge. One is knowing a thing, the other is knowing where to find it."

Samuel Johnson

References

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Hastie, Reid, and Dawes, Robyn, Rational Choice in an Uncertain World: The Psychology of Judgment and Decision Making, Sage Publications, 2001

Stamatis, D.H., Six Sigma and Beyond: Foundations of Excellent Performance, St. Lucie Press, 2002

MindTools™ website (www.mindtools.com) has an excellent selection of tools on decision making (Decision Trees, Six Thinking Hats, Grid Analysis, Pareto Analysis, Cost/Benefit Analysis)

Questions

Thank you!

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