WHAT’S IT ALL ABOUT, ALFIE?

“The purpose of risk management is to make decisions, not to sit around and admire the risks.”

– Rockwell Collins Risk Management Guide
“BUT WE CAN’T POSSIBLY MAKE THESE DECISIONS . . .”

“The winning general is the one who can best act on imperfect information and half formed theories.”

– Napoleon Bonaparte
4. **RISK MANAGEMENT: WORLD'S SHORTEST TUTORIAL**

- Avoiding the obvious
- Explicitly declared uncertainty
- Tools of risk management
- Risk and value
- A test: Did we really do risk management?
RISK MANAGEMENT ATROCITIES

- You’re blind-sided by a risk that’s happened a thousand times before.
- You have no infrastructure in place to deal with a risk when it materializes.
- You don’t have a useful (early) transition indicator.
DENVER INTERNATIONAL AIRPORT

The automated baggage handling system:

- Terminal
- Concourse A (CO, Intl)
- Concourse B (UAL)
- Concourse C (AA, DL, FL, MA, NW, TWA, US)
- Crossover Lines
- Telecarts
D.I.A. PROJECT: CRITICAL PATH

1993  1994  1995

Baggage Handling Software
Integration testing
Acceptance & signoff
Airport opening
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You don’t have a useful (early) transition indicator.
Waltzing with Bears

MANAGING RISK ON SOFTWARE PROJECTS

"The seminal work on managing software project risk... Explosive insights, practical advice. Finally we have a guide to risk management that we can implement and use."
—Rob Austin, Professor, Harvard Business School

Tom DeMarco & Timothy Lister
NOW AVAILABLE FROM HANSER:

www.hanser.de/computer/neu.htm
1. You have zero chance of delivering before January of next year.

2. My best guess is you’ll be done around April 1st . . .

3. but to be at least 50% sure, you’d better advertise a date of May 1 or later.

4. To be 100% safe, you’d have to allow for delivery as late as end of next year.
A risk diagram shows explicitly how uncertain we are about delivery date (or anything else).
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RISK DIAGRAMS IN USE:

Size Inflation → Risk Modeling Process → Delivery Date

Productivity Variation

Sources of Uncertainty

Flaw in size estimate etc.
RISK DIAGRAMS IN USE:

- Risk Modeling Process
  - Sources of Uncertainty
    - Productivity Variation
    - Flaw in size estimate
  - Resultant Uncertainty
    - Delivery Date
  - Risk Modeling Process

- Size Inflation
RISK DIAGRAMS IN USE:

- Size Inflation
- Productivity Variation
- Sources of Uncertainty
- Flaw in size estimate

Risk Modeling Process

Resultant Uncertainty

Delivery Date
SENSIBLE PROJECT MANAGEMENT:

Effort

Size in (for example) Function Points
SENSIBLE PROJECT MANAGEMENT:

Effort

Size in (for example) Function Points

20,000 FP
SENSIBLE PROJECT MANAGEMENT:

Effort

Size in (for example) Function Points

52 person months

20,000 FP
SENSIBLE PROJECT MANAGEMENT:

"The project will require 52 person-months of effort."

52 person months

20,000 FP

Size in (for example) Function Points
SENSIBLE PROJECT MANAGEMENT:

Effort

Size in (for example) Function Points

52 person months

20,000 FP
SENSIBLE RISK MANAGEMENT:

Effort

52 person months

Size in (for example) Function Points

20,000 FP
SENSIBLE RISK MANAGEMENT:

“The project will take this much effort.”

![Diagram showing project effort and delivery dates](image-url)
SENSIBLE RISK MANAGEMENT:

“The project will take this much time.”
How much risk is too much risk?
Insights:

- surprise about where the major risks lie
- surprise about the value of low risk projects
- surprise about risk quantification
- surprise about precision
- surprise about aggressively scheduled projects
WHERE IS THE BIGGEST RISK?
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THE FIRST SURPRISE:

The biggest risk an organization faces is lost opportunity, the failure to choose the right projects.
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So . . .

◆ Value is every bit as important as cost (the plusses matter as much as the minuses).
THE FIRST SURPRISE:

The biggest risk an organization faces is lost opportunity, the failure to choose the right projects.

So . . .

◆ Value is every bit as important as cost (the plusses matter as much as the minuses).
◆ Your process for deciding which projects to do is more important than your process for how to do them.
THE KEY PROJECT NEGOTIATION:
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... so we think we can have this for you in seven months ...
THE KEY PROJECT NEGOTIATION:

If we really told him what we think (15-20 months), he’d never do the project.

... so we think we can have this for you in seven months ...
The real reason we need to do risk management is not so much to survive our risks, but to enable risk-taking.
THE SECOND SURPRISE:

The real reason we need to do risk management is not so much to survive our risks, but to enable risk-taking.

Conversely:

- A failure to manage risks ensures that no one will take any but the most minor risks.
The real reason we need to do risk management is not so much to survive our risks, but to enable risk-taking.

Conversely:

- A failure to manage risks ensures that no one will take any but the most minor risks.
- Without credible risk management, it is impossible to pursue meaningful value.
THE THIRD SURPRISE:

The only reason to quantify cost (schedule and budget) is to have something to compare to your quantification of benefit.
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A failure to quantify benefit assures that:

- there is perfect one-way accountability; the project team is accountable but the client is completely unaccountable.
The only reason to quantify cost (schedule and budget) is to have something to compare to your quantification of benefit.

A failure to quantify benefit assures that:

◆ there is perfect one-way accountability; the project team is accountable but the client is completely unaccountable.

◆ there is no way to assure that the high value projects get done (prioritization is a charade).
THE FOURTH SURPRISE:

There is no sense making cost quantification more precise than value quantification.
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So if all the user is willing to say about benefit is:

“We gotta have it!”
The Fourth Surprise:

There is no sense making cost quantification more precise than value quantification.

So if all the user is willing to say about benefit is:

“We gotta have it!”

then it’s perfectly reasonable to quantify budget and schedule only to this extent:

“It’s gonna cost a lot,”
and
“It will be done when it’s done.”
I’m sorry, Tom, but I simply cannot tolerate delivery any later than December 31, 2003.
I'm sorry, Tom, but I simply cannot tolerate delivery any later than December 31, 2003.

If I limit them to this year they can't possibly spend more than I'm willing to pay.
THE FIFTH SURPRISE:

An aggressive delivery date is often driven by a cost containment motive, not an urgent date motive.
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- The more aggressive the schedule, the more likely it is that the product is of low value.
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- The more aggressive the schedule, the more likely it is that the product is of low value.

An inescapable corollary:

Starting a project late is a worse sin than finishing it late.
INSIGHTS:

- surprise about where the major risks lie
- surprise about the value of low risk projects
- surprise about risk quantification
- surprise about precision
- surprise about aggressively scheduled projects
I think we’re doing risk management. Um . . . we are, aren’t we?
THE “ARE WE REALLY DOING RISK MANAGEMENT” TEST

(in six parts):
The “Are We Really Doing Risk Management” Test

(in six parts):

1. Is there a census of risks with at least 10-20 risks on it?
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(in six parts):

1. Is there a census of risks with at least 10-20 risks on it?
2. Is each risk quantified as to probability and cost and schedule impact?
The "Are We Really Doing Risk Management" Test

(in six parts):

1. Is there a census of risks with at least 10-20 risks on it?
2. Is each risk quantified as to probability and cost and schedule impact?
3. Is there at least one early transition indicator associated with each risk?
4. Does the census include the core risks indicated by past industry experience?
4. Does the census include the core risks indicated by past industry experience?

5. Are risk diagrams used widely to specify both the causal risks as well as the net result (schedule and cost) risks?
4. Does the census include the core risks indicated by past industry experience?

5. Are risk diagrams used widely to specify both the causal risks as well as the net result (schedule and cost) risks?

6. Is the scheduled delivery date significantly different from the best-case scenario?