Risk Management:

World's Shortest Tutorial

Neumann Computer Society of Budapest: June 8, 2004

RISK MANAGEMENT . . .

nothing but the beef:

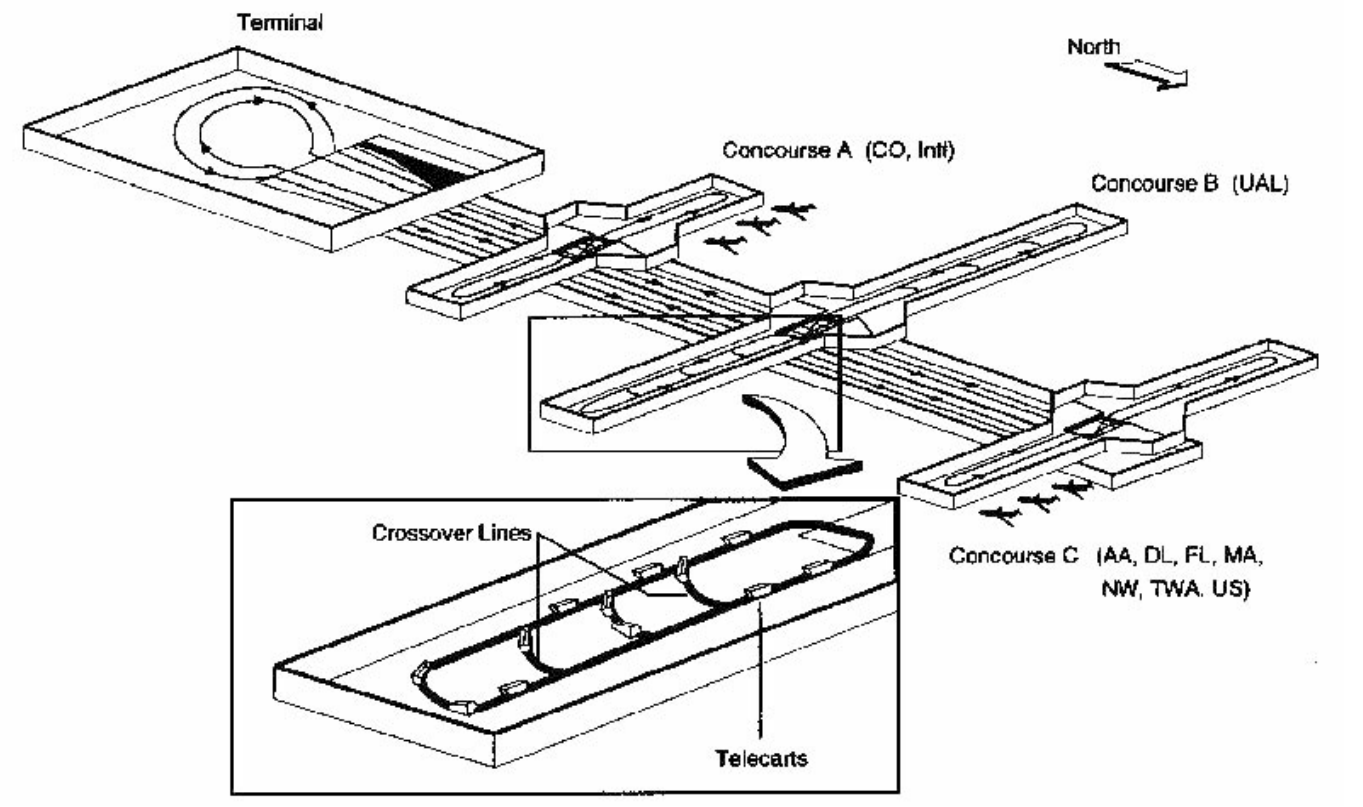
- three reasons why you bother
- one key tool
- use of monte-carlo simulation
- one metric to track (late) risk manifestation
- a useful pattern from the past
- a scary but wonderful observation
- the did-we-really-do-it? test

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:



D.I.A. PROJECT: CRITICAL PATH

1993 1994 1995

Baggage Handling Software

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Integration testing

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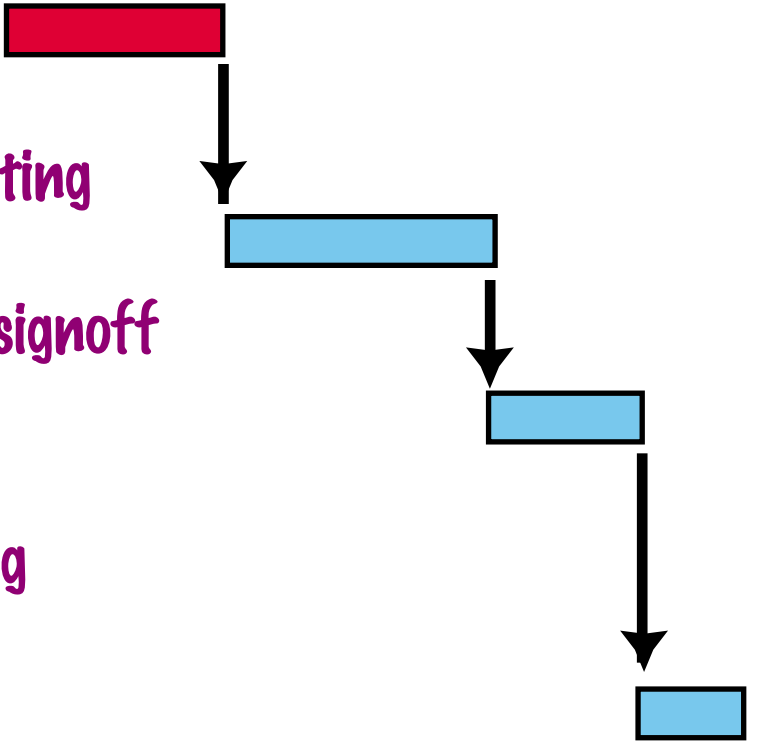
Acceptance & signoff

Airport opening



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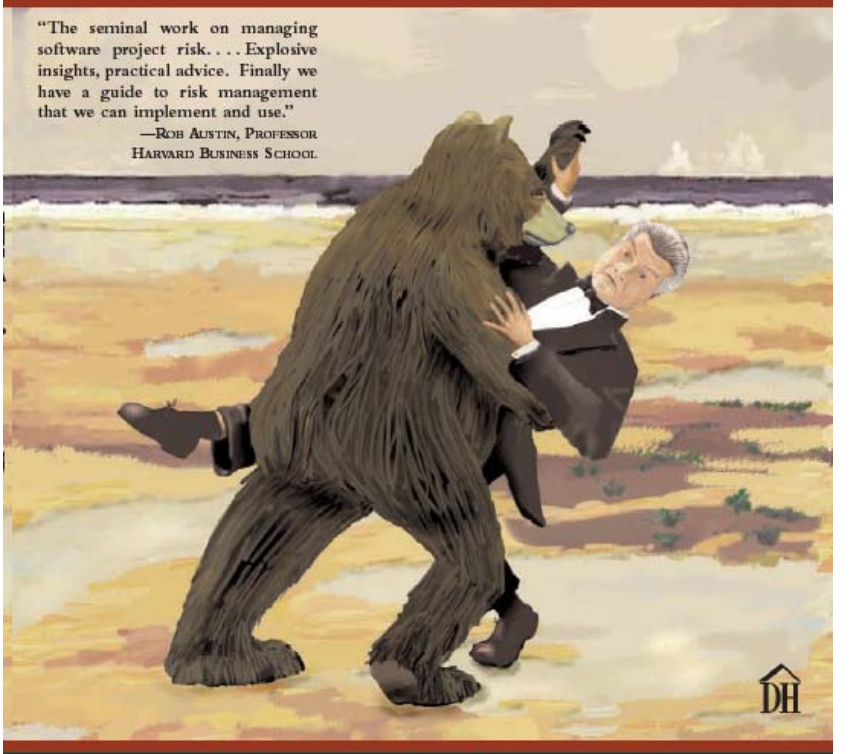
from the best-selling authors of PEOPLEWARE

Waltzing *with* Bears

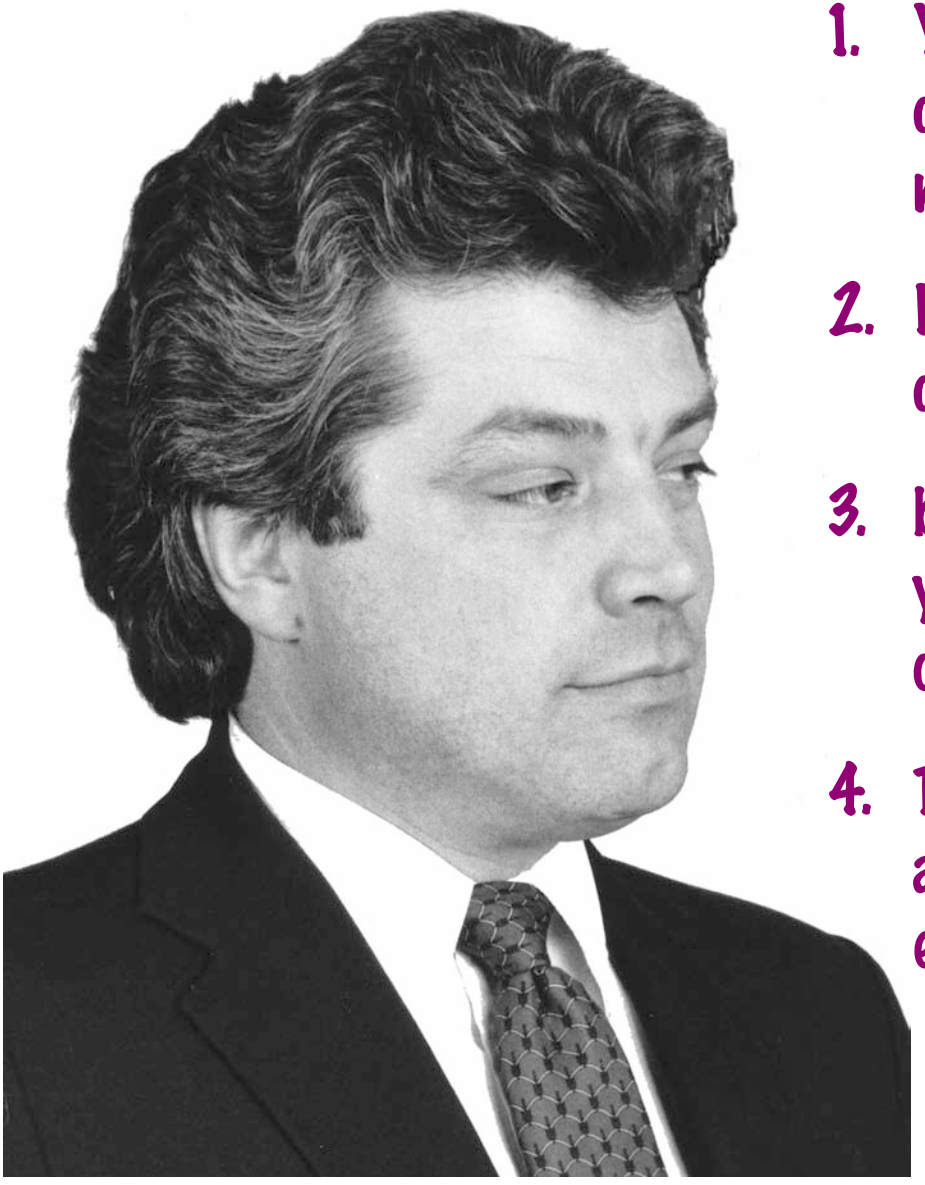
MANAGING RISK ON SOFTWARE PROJECTS

"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."

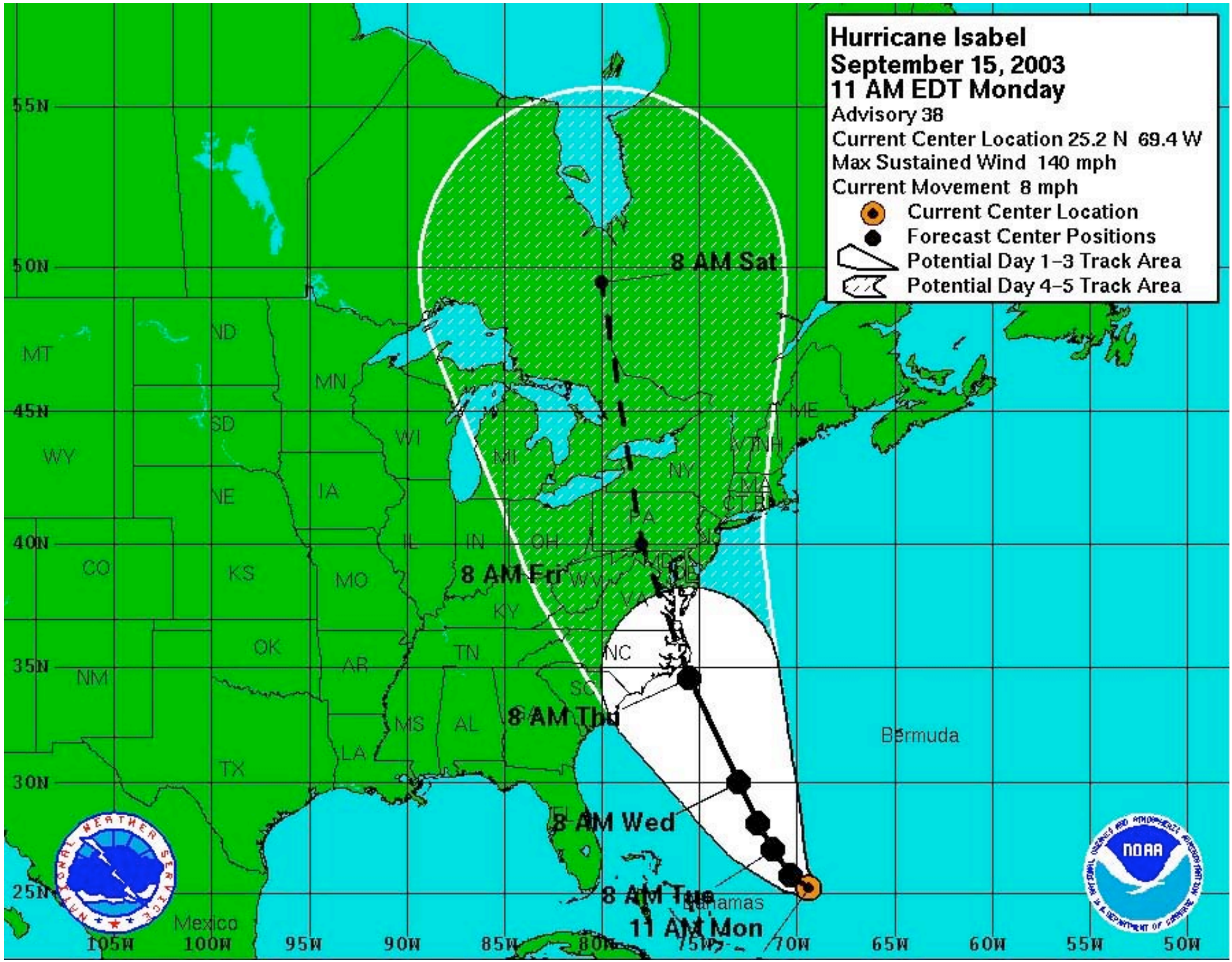
—ROB AUSTIN, PROFESSOR
HARVARD BUSINESS SCHOOL



TOM DEMARCO & TIMOTHY LISTER



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.


Hurricane Isabel
September 15, 2003
11 AM EDT Monday
Advisory 38
Current Center Location 25.2 N 69.4 W
Max Sustained Wind 140 mph
Current Movement 8 mph
Current Center Location
Forecast Center Positions
Potential Day 1-3 Track Area
Potential Day 4-5 Track Area
8 AM Sat
8 AM Fri
8 AM Thu
8 AM Wed
8 AM Tue
11 AM Mon
Bermuda
Bahamas
Mexico
55N
50N
45N
40N
35N
30N
25N
105W
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
MT
ND
MN
SD
WY
WI
MI
NE
IA
NY
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NH
MA
CT
RI
PA
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WV
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AL
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TX
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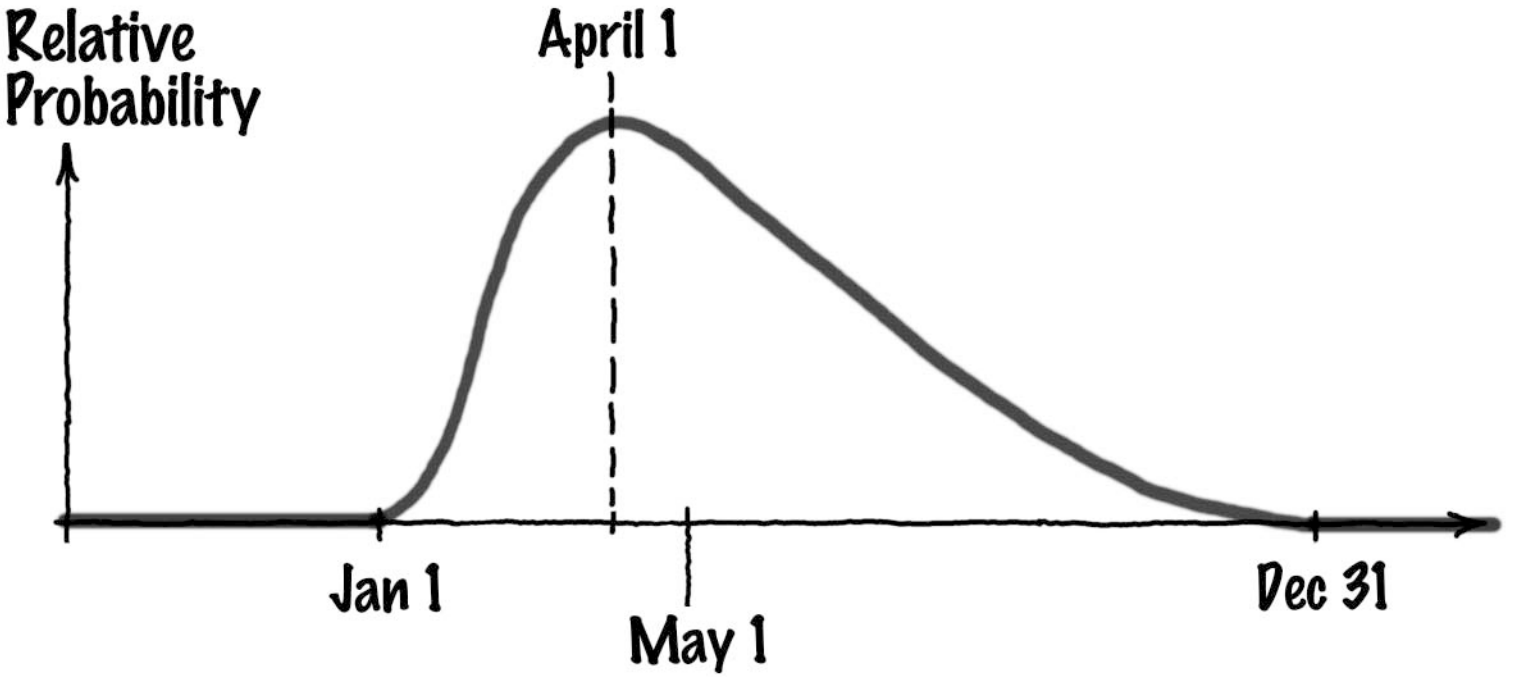
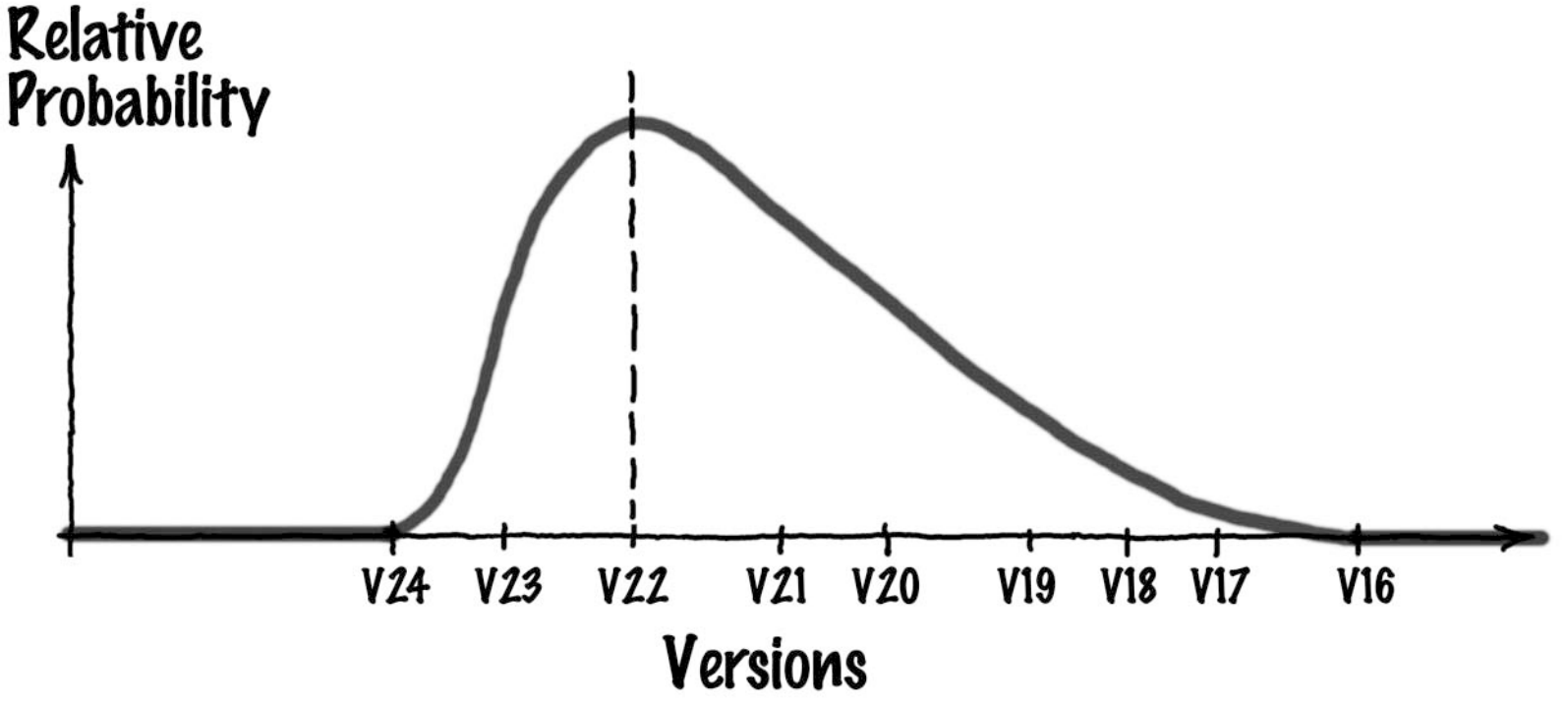
NOAA

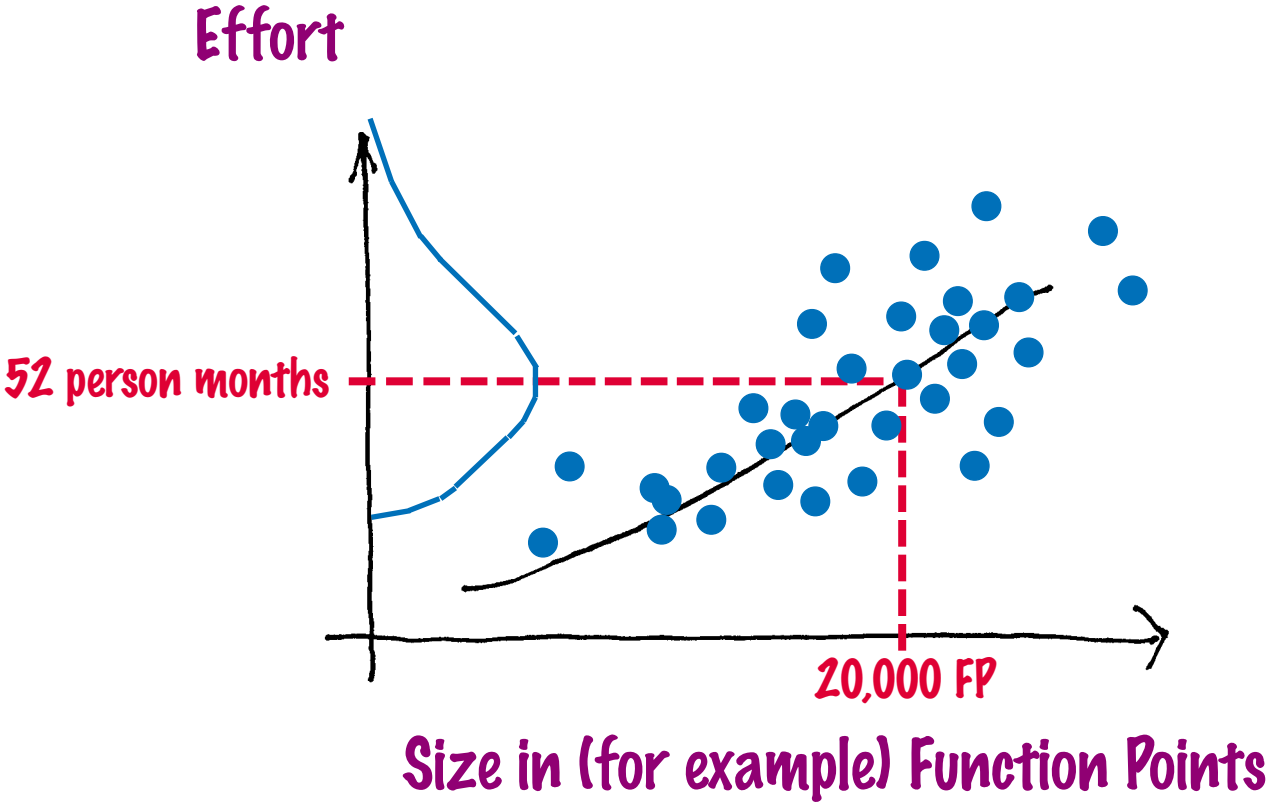
RISK DIAGRAM:



A risk diagram shows explicitly how uncertain we are about delivery date (or anything else).

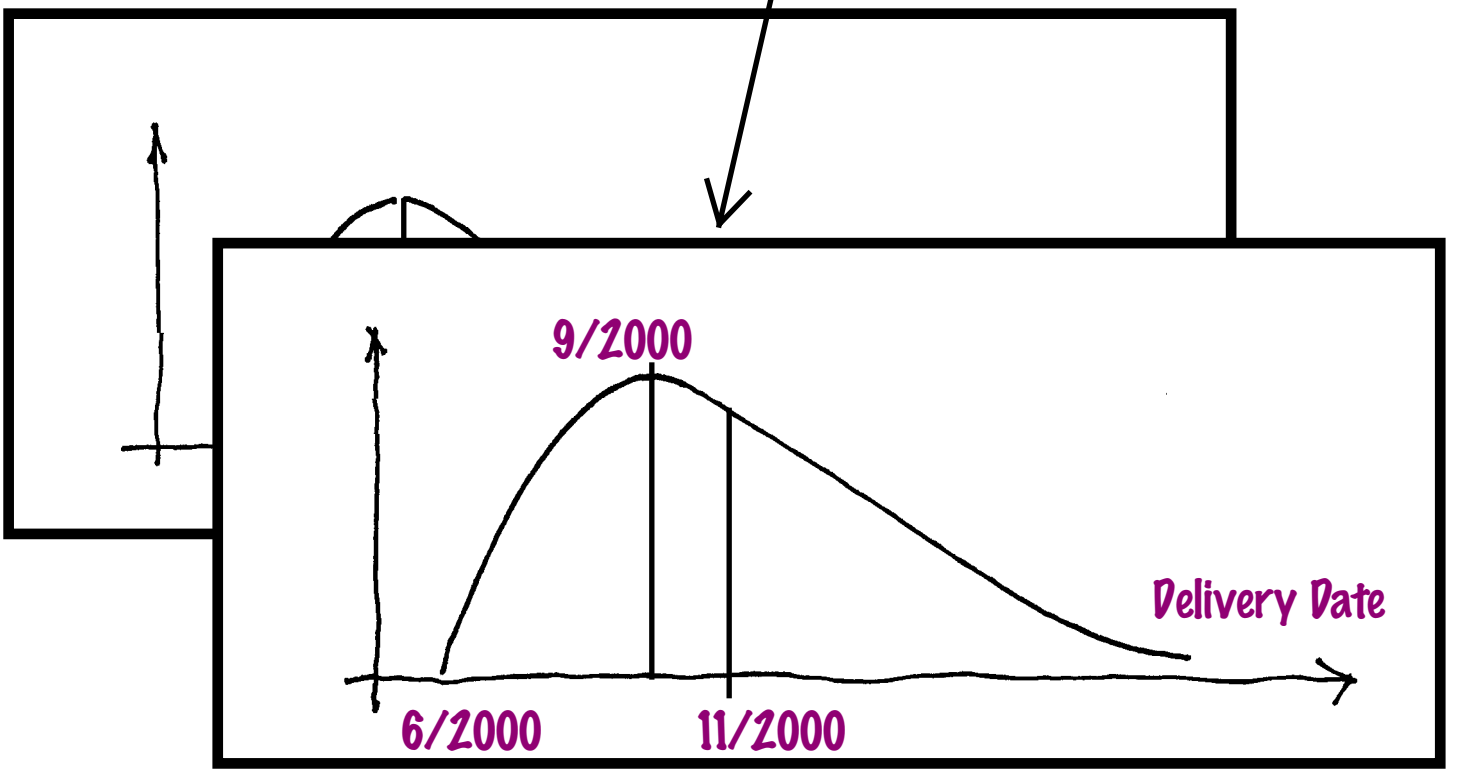

Relative
Probability
V24
V23
V22
V21
V20
V19
V18
V17
V16
Versions

SENSIBLE RISK MANAGEMENT:

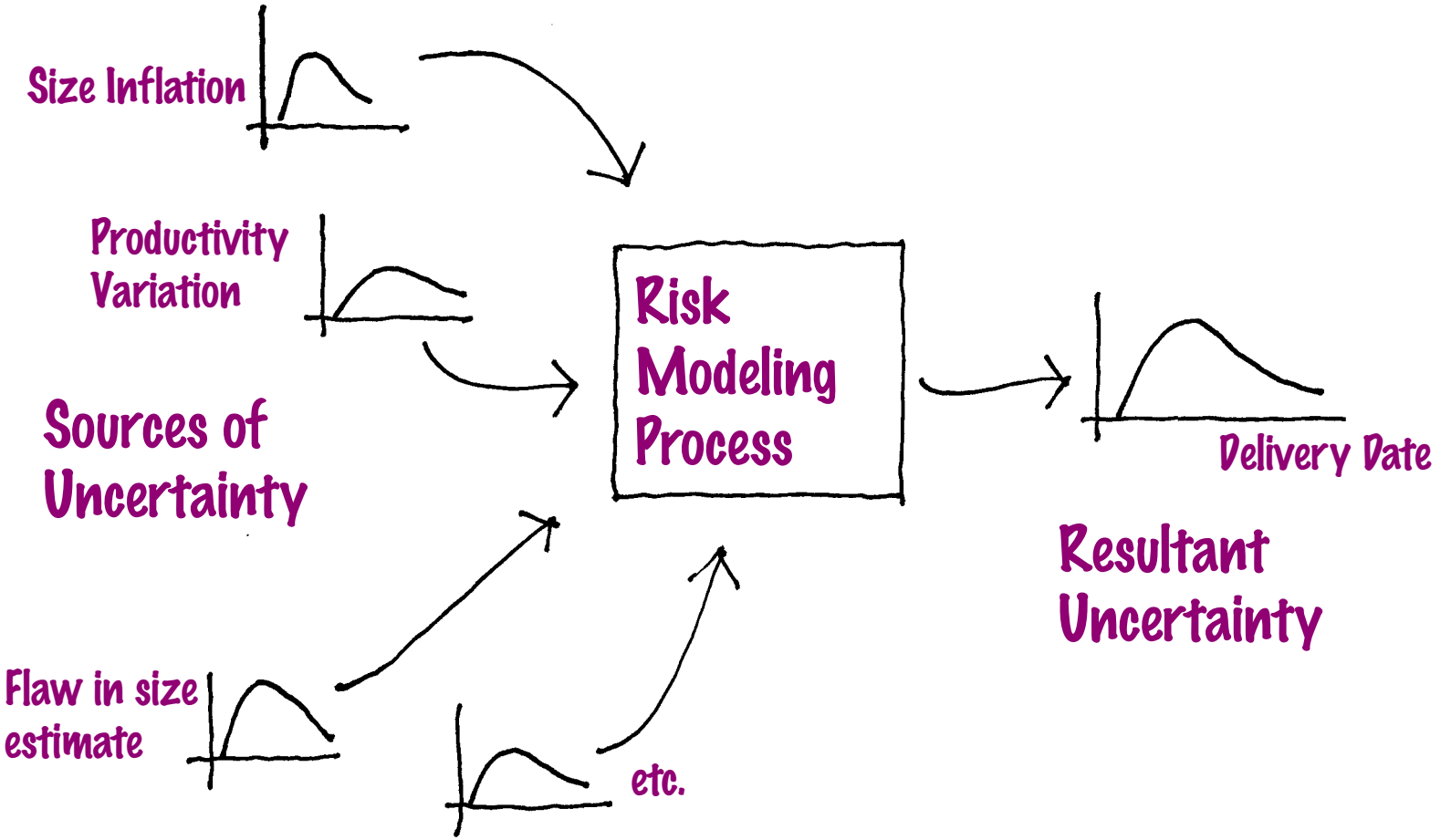


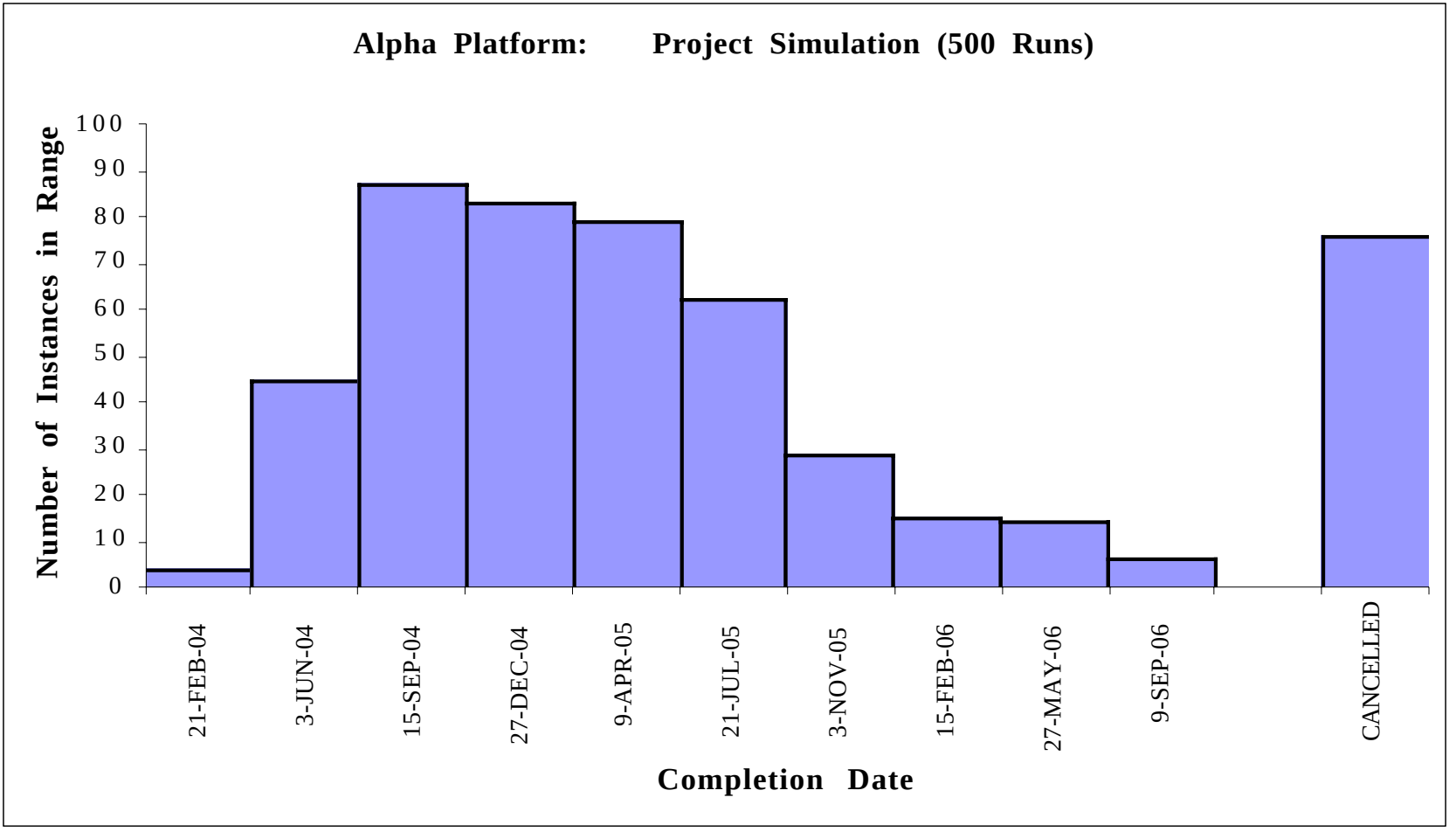
SENSIBLE RISK MANAGEMENT:

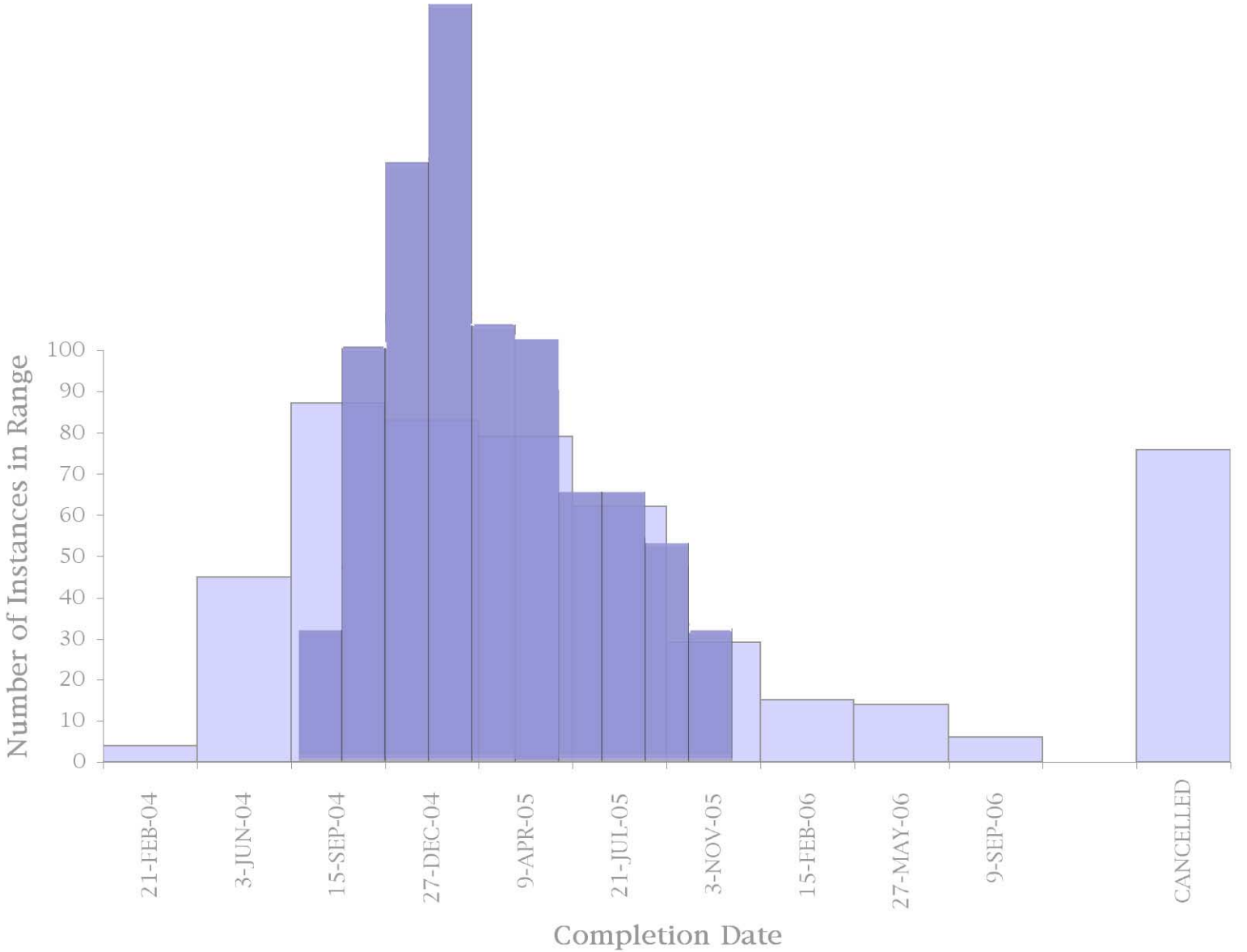
"The project will take this much time."



RISK DIAGRAMS IN USE:




Alpha Platform: Project Simulation (500 Runs)
Number of Instances in Range
100
90
80
70
60
50
40
30
20
10
0
21-FEB-04
3-JUN-04
15-SEP-04
27-DEC-04
9-APR-05
21-JUL-05
3-NOV-05
15-FEB-06
27-MAY-06
9-SEP-06
CANCELLED
Completion Date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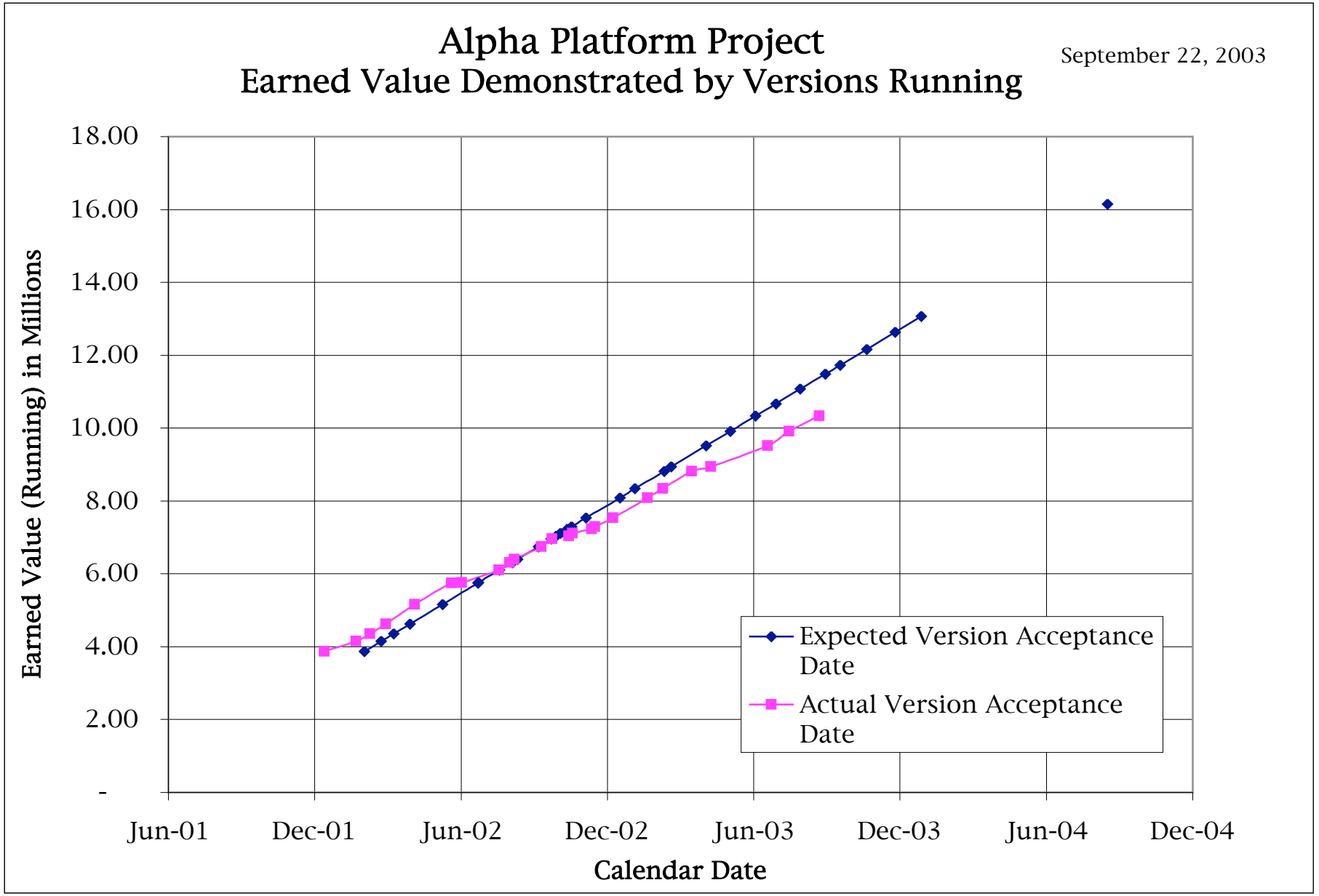
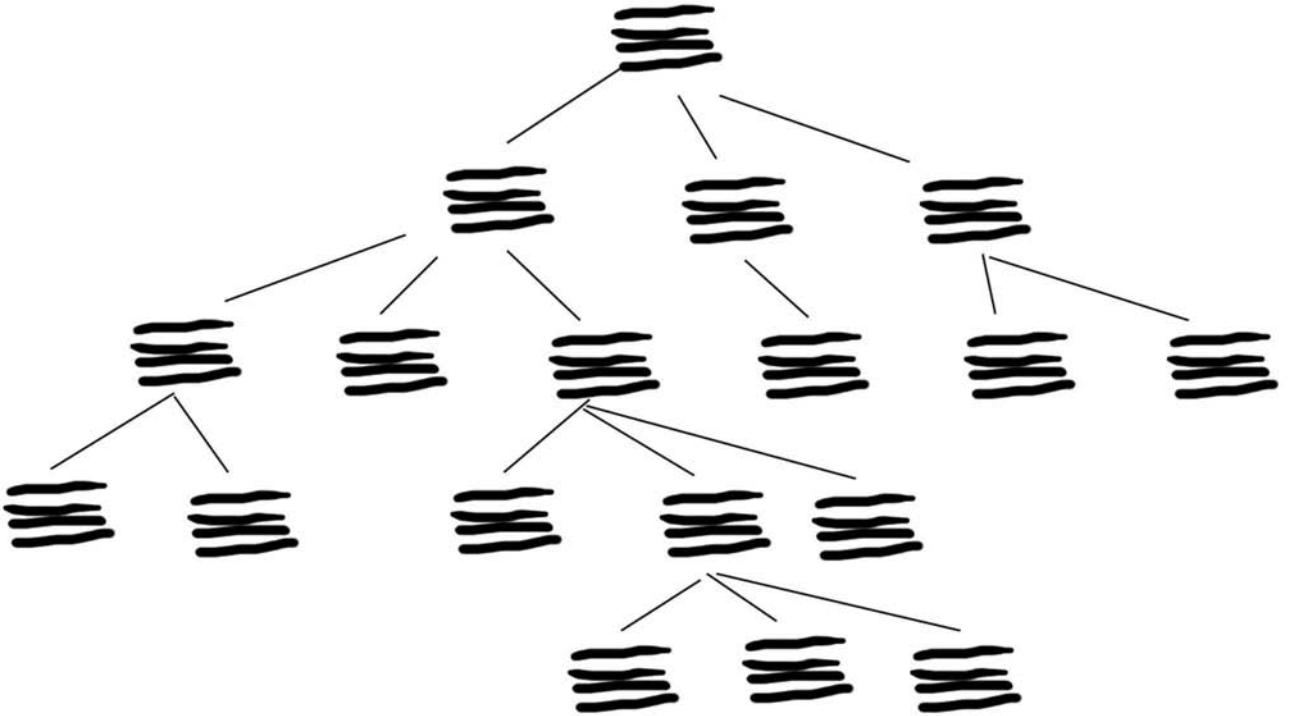
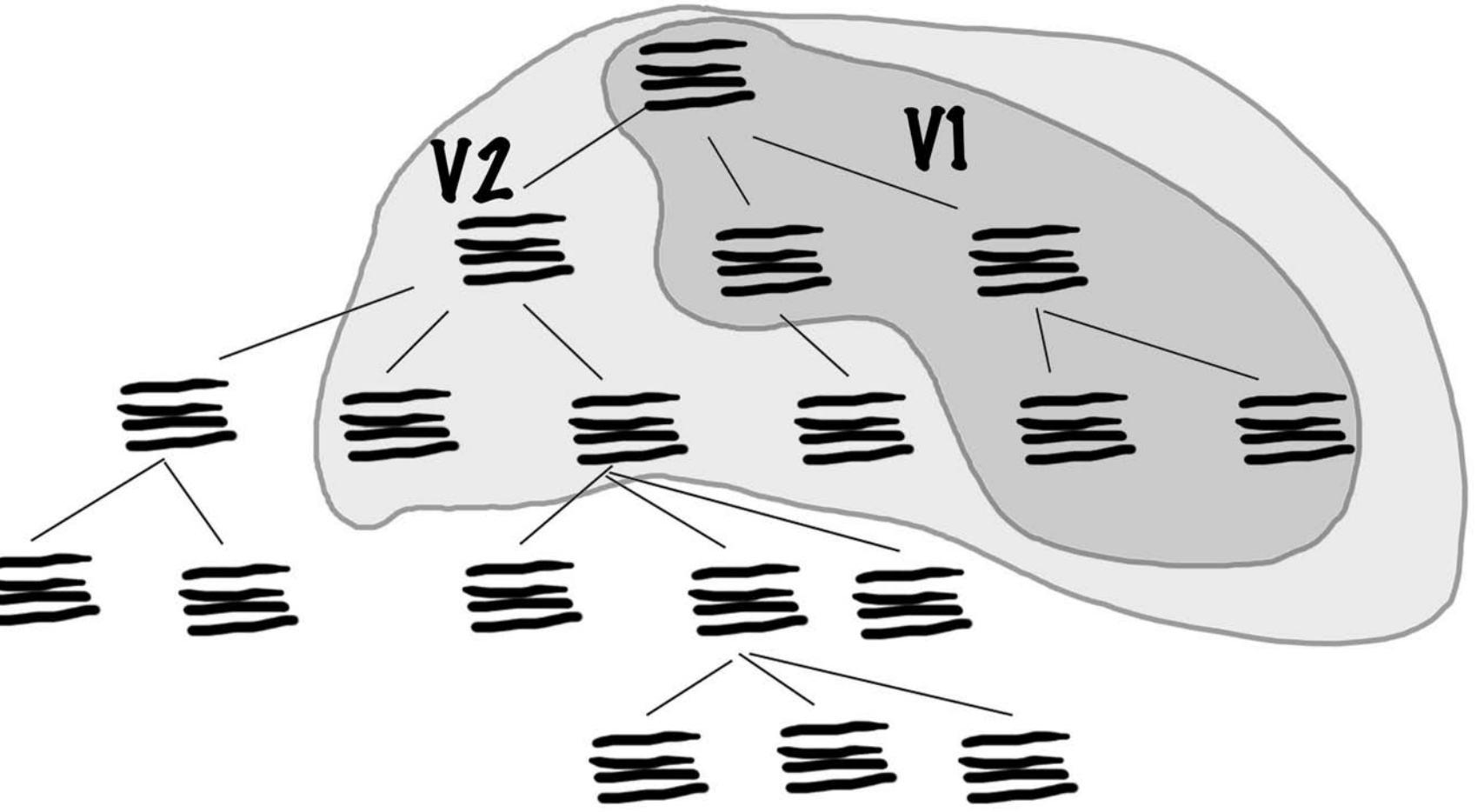
CANCELLED
Completion Date

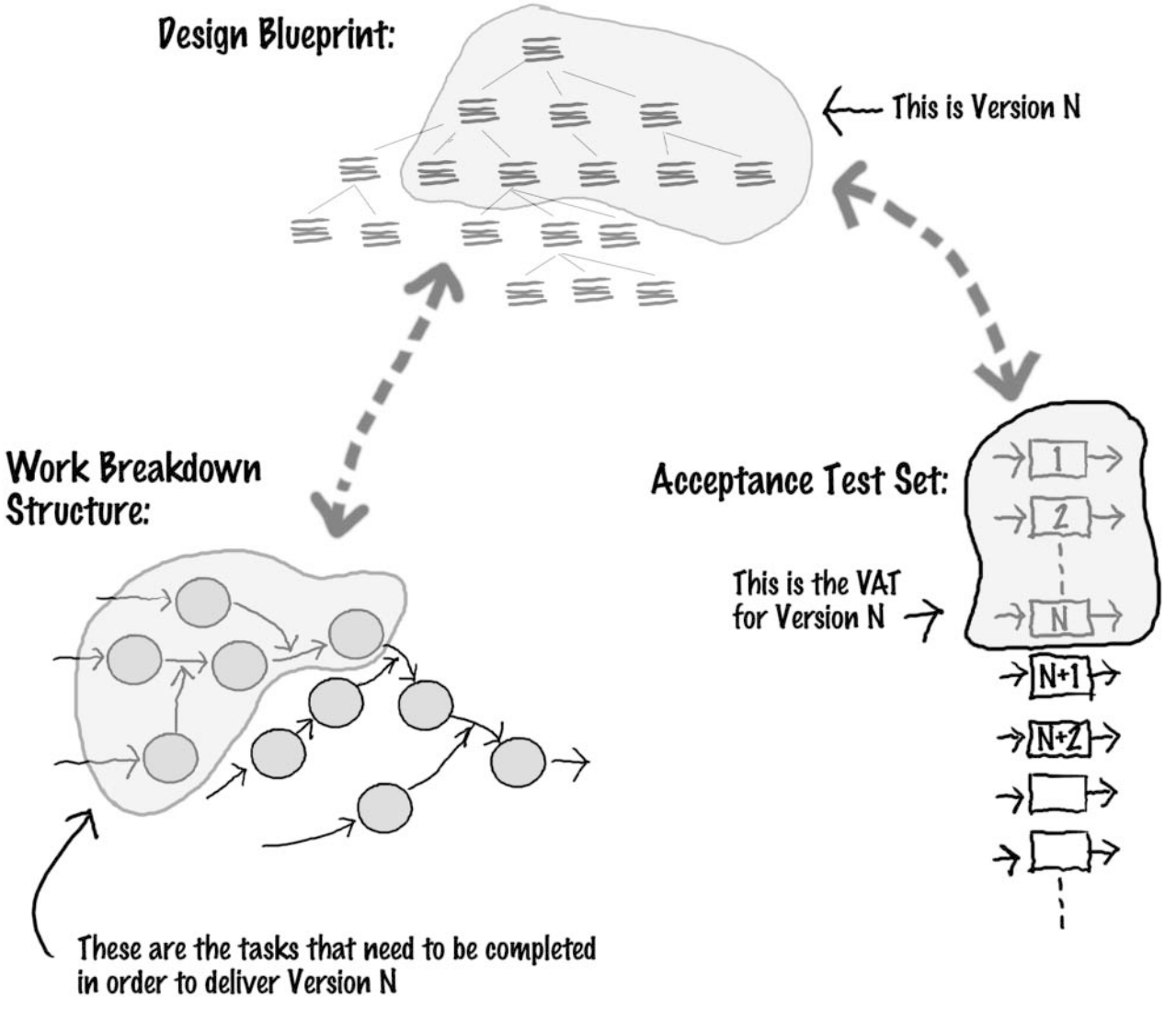
Alpha Platform Project
Earned Value Demonstrated by Versions Running

September 22, 2003






V2
V1


Design Blueprint:
This is Version N
Work Breakdown Structure:
Acceptance Test Set:
This is the VAT for Version N
1
2
N
N+1
N+2
These are the tasks that need to be completed in order to deliver Version N

SCARY BUT WONDERFUL OBSERVATION:

The real reason we need to do risk management is not to avoid risks, but to enable aggressive risk-taking.

THE FIVE CORE RISKS

The following five risks are common to all high-tech projects:

- Size inflation
- Original estimate flaw
- Personnel turnover
- Failure to concur (breakdown among the interested parties)
- Productivity variation

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?

THE "ARE WE REALLY DOING RISK MANAGEMENT" TEST (CONTINUED)

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?