Mastering risk or…
…how to live with always being wrong

Dr. Steve Morlidge

Operational roles 1978–2002, including:

- Controller, Unilever Foods UK (US$1 billion turnover)

Performance management leadership

- 2001–2006: Chairman, Beyond Budgeting Roundtable (BBRT)
- 2002–2006: Leader, Global Performance Management Change Project
- 2007: BBRT Associate
- 2006: Founding Director, Satori Partners, Ltd.
- 2007: Visiting Fellow, Cranfield University
- 2010: Published book, *Future Ready: How to Master Business Forecasting*
- 2010: Founding Director, Catchbull, Ltd.
- 2011: Editorial Board, *Foresight* magazine
- 2011: Ph.D., Hull University Business School (Management Cybernetics)

" It's awful. Why did no one see it coming? "

Mastering risk

or

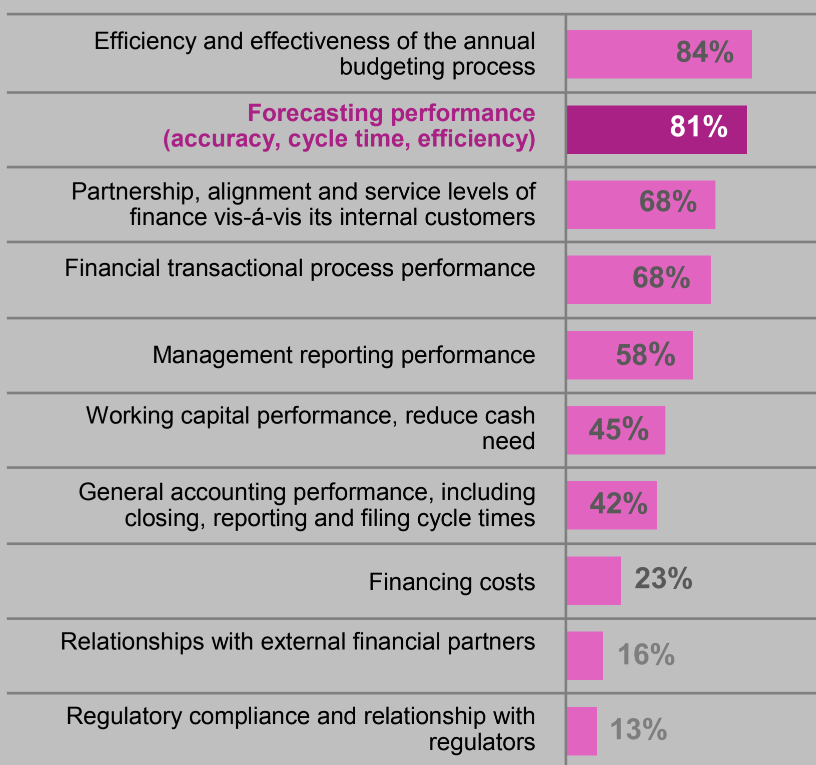
Why is it always obvious after the event?

and

What can we do to avoid it in the first place?

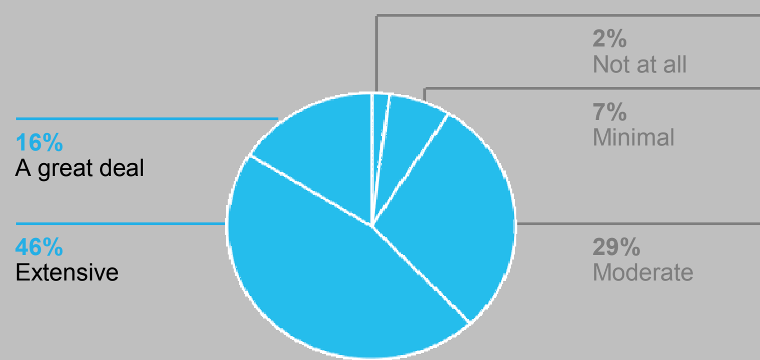
The priorities for chief financial officers (CFOs)

More effective budgeting and forecasting abilities are top-of-mind

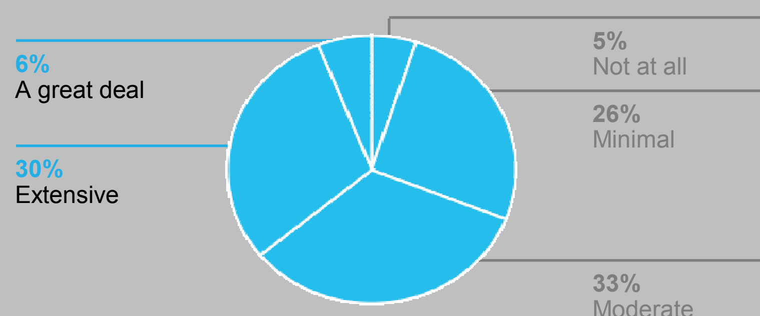


Source: The Hackett Group, *The CFO Agenda: Finance's Top Issues in 2011*, 2011.

Increase in volume and complexity of risks over the past five years



Operational surprises faced in the last five years



Source: AICPA Research Study, 2009 | n=701

So what's new?


RISK
CONTROL
PROCESS
risk
MANAGEMENT
PROJECT
AUDIT
CONTROLS
FLEXIBLE
FRAMEWORK
ANALYTICS
SEARCH
RISK
UNCERTAINTY
Management
ANALYSIS
FACTOR
Black
DESIGN
STATISTICAL
Basle
FRAUD
EVENT
appetite
SPREADSHEET
RECOVERY/CLEANSING
MATRIX
LIBRARY
DESIGNED
Probability
Revenue
ANOMALY
COMPUTER
CARLO
TOOL
RULES
simulation
TIGHTENING
REGISTERS
AGREEMENTS
SUPPORTED
BUSINESS
ACCELERATED
DISCREPANCY
DOCUMENTATION
REVIEWS
END-TO-END
based
CAUSAL
Swan
Tornado
MODELS
Uncertainty
SYSTEM
FILE
Frequency
GRAPHICAL
Expected
Operational
SUPERVISION
AUTHORIZATIONS
EVOLUTIONARY
EXPLANATION
Sarbanes
Scenario
events
EDIT
distribution
GENERIC
STORY
CHECKS
QUESTIONS
FEEDBACK
FORECASTING
AUDITS
HEALTHY
PRE
Carlo
Scholes
chart
ERGONOMICS
EXTRAPOLATION
LOOPS

… a common sense approach

Risk

is the word we use to describe the probability that things will turn out different to the way we expect

It can be …

– Negative

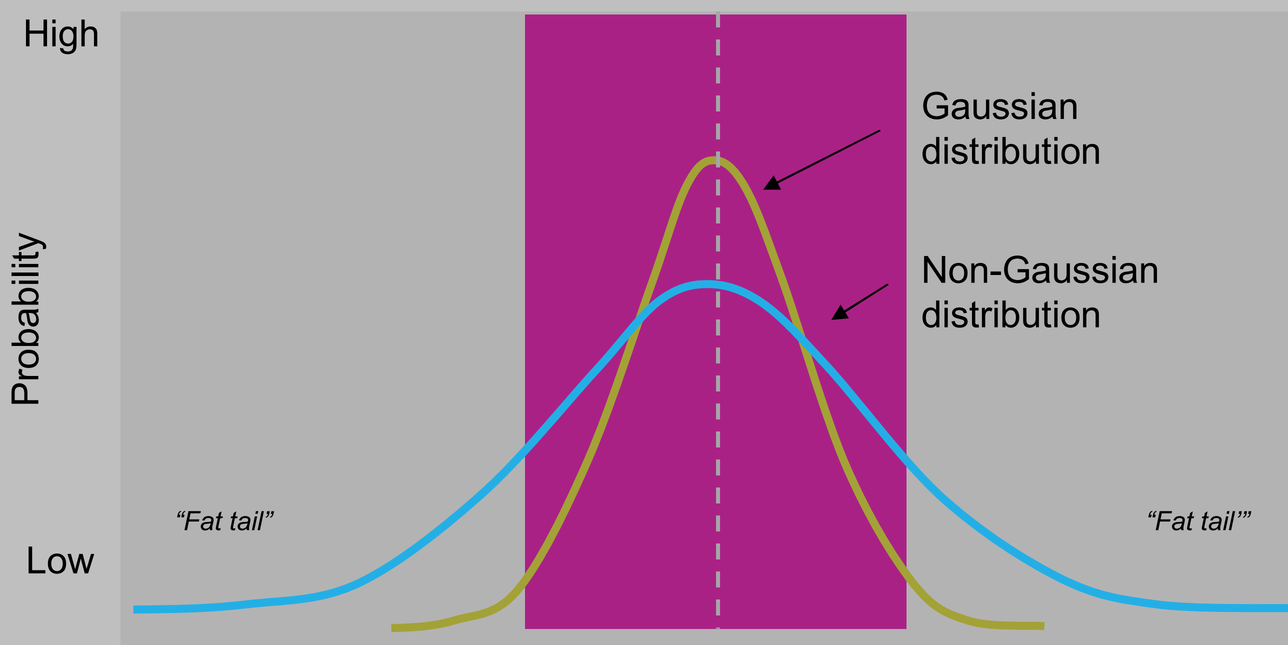
+ Positive

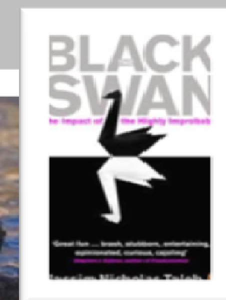
KNOWN UNKNOWNS
Predictable in aggregate = "true risk"

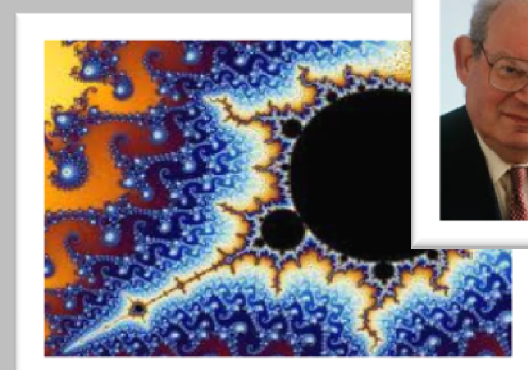
VARIATION

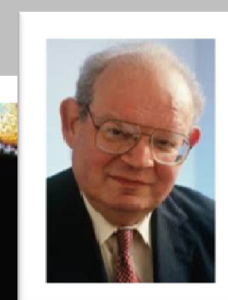
UNKNOWN UNKNOWNS
Whether, when and how much is not predictable = "uncertainty"
DISCONTINUITY

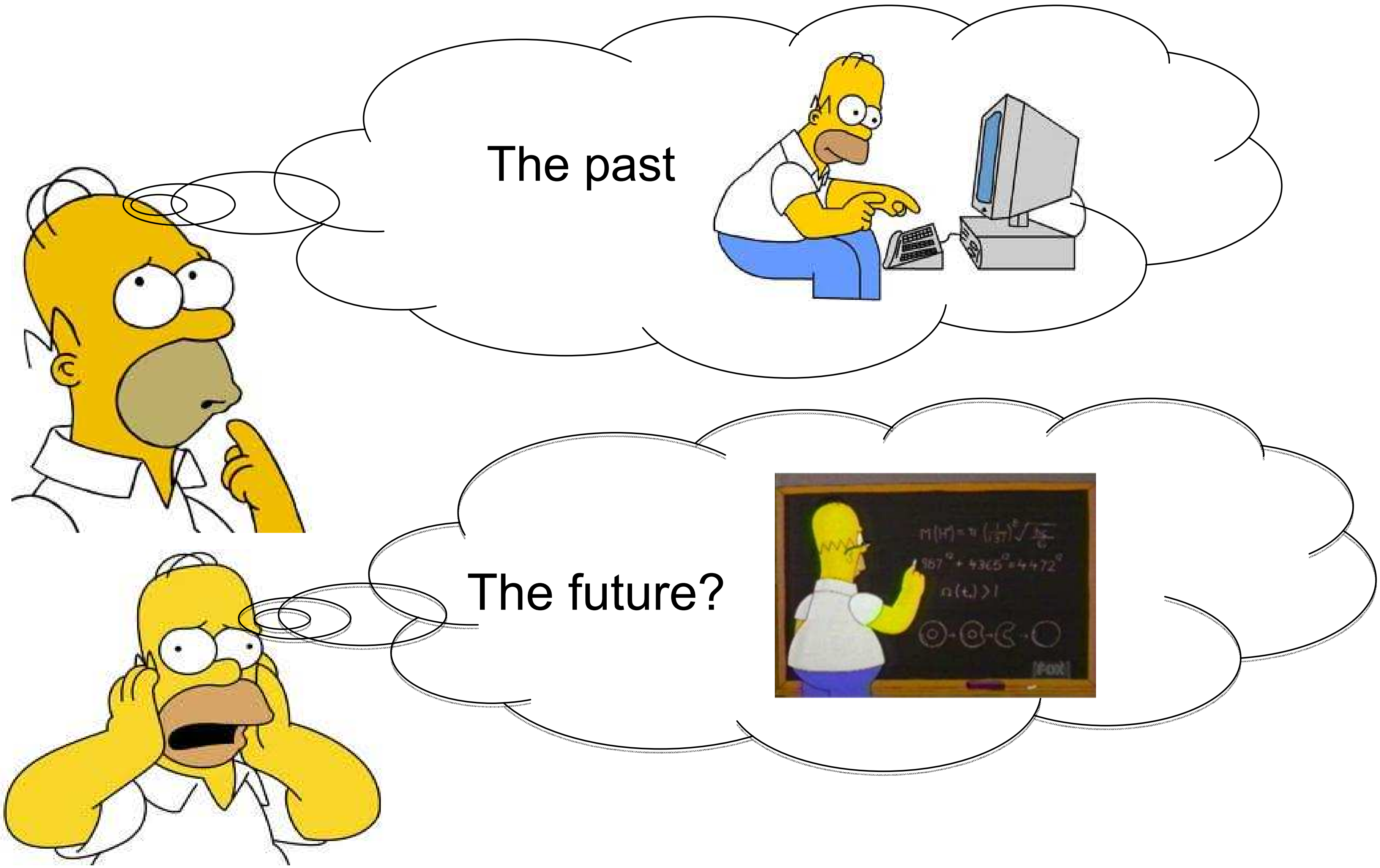
Problem number one: focusing on the wrong things










The past
The future?

Problem number two: trying to solve the problem mathematically

"We were seeing things that were 25-standard deviation moves, several days in a row."

—David Viniar, CFO, Goldman Sachs, 2007

"

3-sigma event:	every 741 days (1 day in 3 years)
4-sigma event:	every 31,560 days (1 day in 126 years)
5-sigma event:	every 3,483,046 days (1 day in 13,932 years)
6-sigma event:	every 1,009,976,678 days (1 day in 4,039,906 years)
7-sigma event:	every 7.76 +11 zeros days (1 day in 3,105,395,365 years)

"

If the Gaussian curve was correct and 1 in 63 people was a dollar millionaire, then …
…1 in 886 trillion people would have wealth of US$4M or more

Don’t be scared

Is it safe to cross the road?

FACTS

Speed of cars

Change in speed

PLUS ASSUMPTIONS:

Stopping distances

Intentions of driver

Eyesight of driver

The margin of error

..all continuously validated

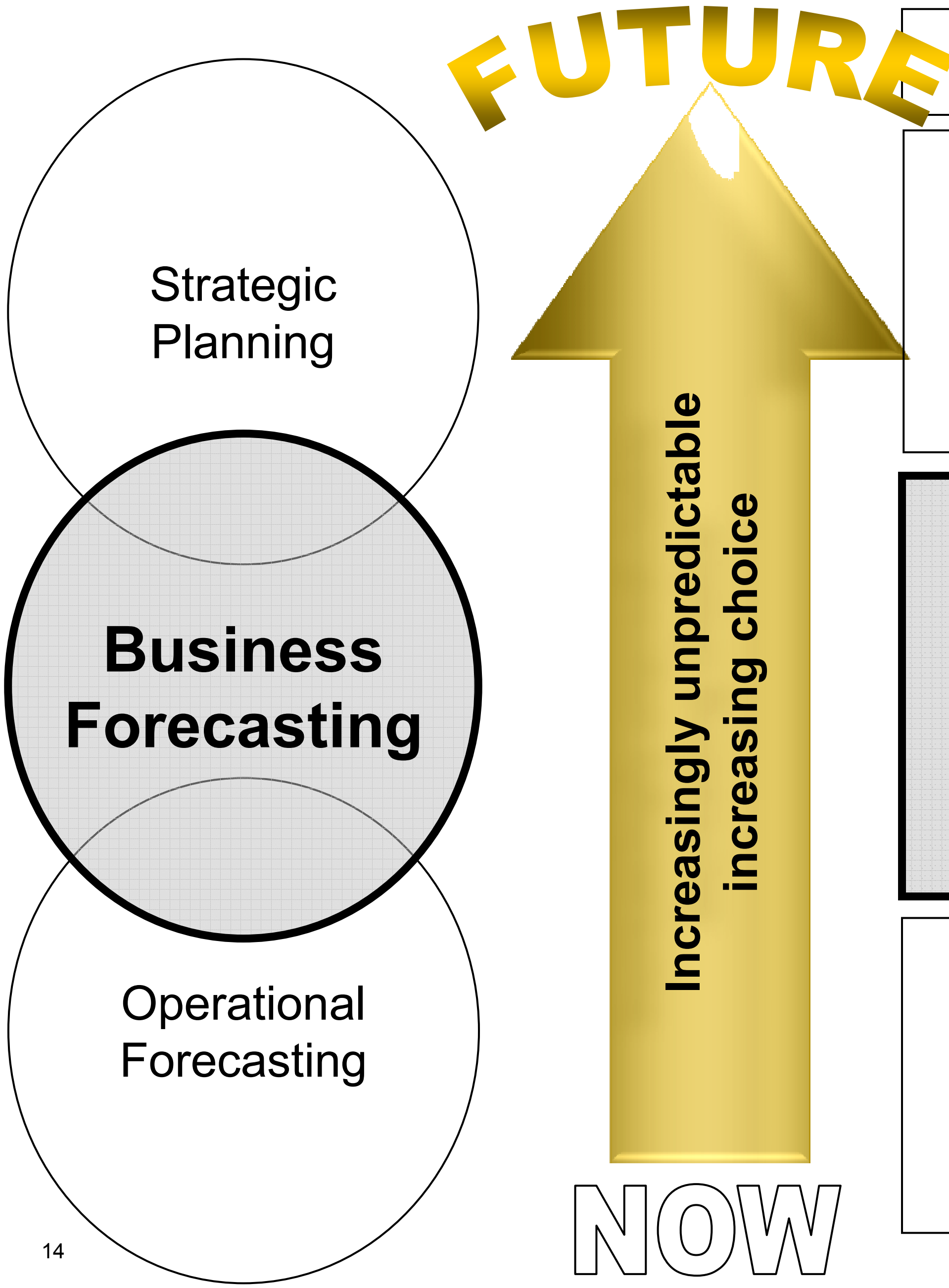
INFORM DECISIONS

..to cross/speed up/slow down

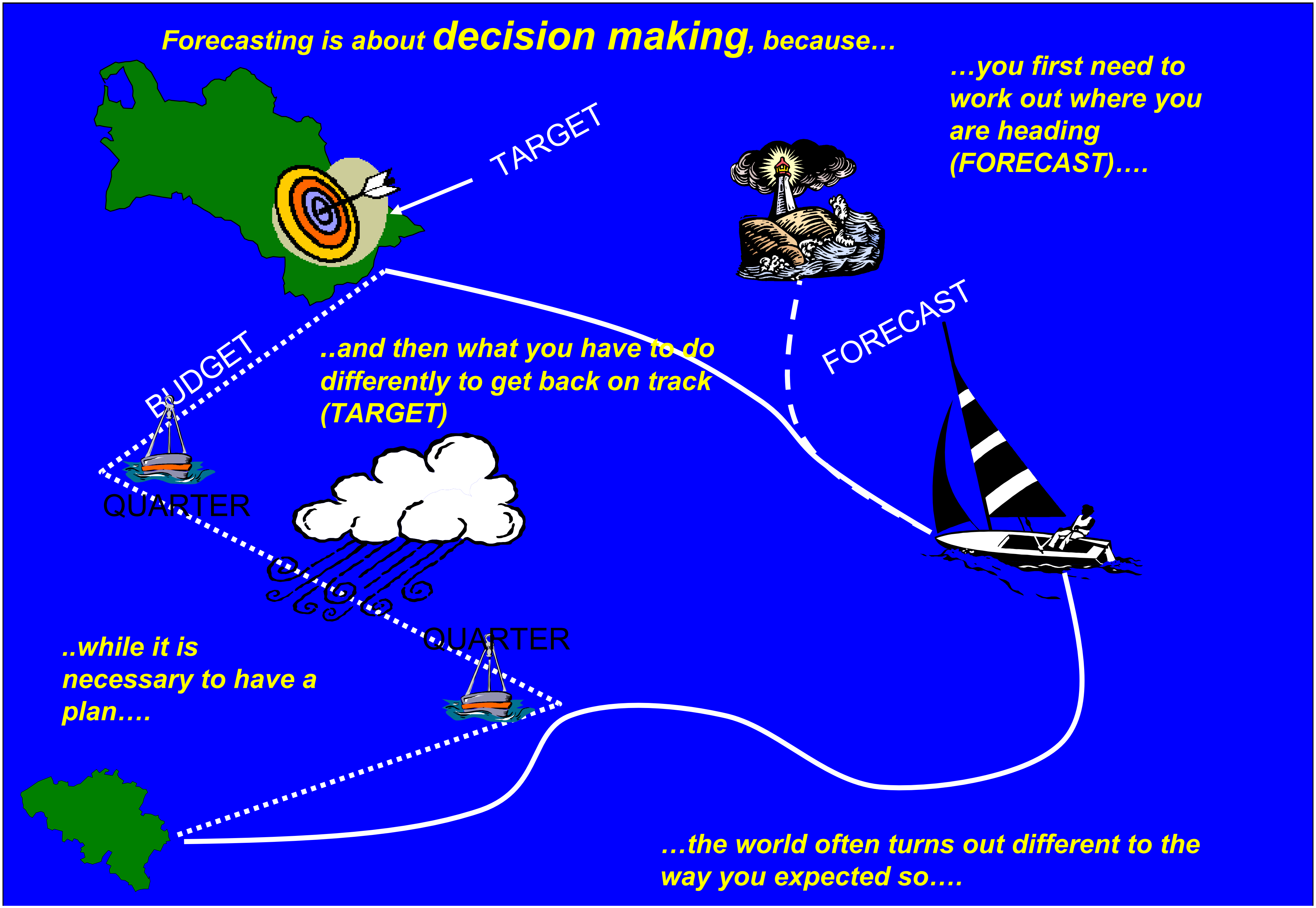
Background: Mastering forecasting

Mastering Forecasting

1. Mastering Purpose
2. Mastering Time
3. Mastering Models
4. Mastering Measurement
5. Mastering Risk
6. Mastering Process



PURPOSE	PROCESS
ADAPTATION *How do we structure the business to compete most effectively?* Creating Options	**ADAPTATION** *Freedom of action* *Alternative scenarios of the future environment* *Broad brush estimates*
NAVIGATION *How do we deploy our resources to best effect?* **Decision Making**	**NAVIGATION** *Choice of response limited* *Best estimate of what will happen (based on current assumptions)* *Detailed enough (with ranges)*
RESPONSE *How do we service demand efficiently?* Execution	**RESPONSE** *Highly constrained* *Prediction of what will happen* *Detailed forecasts*


Forecasting is about decision making, because…
…you first need to work out where you are heading (FORECAST)….
TARGET
FORECAST
BUDGET
..and then what you have to do differently to get back on track (TARGET)
QUARTER
QUARTER
..while it is necessary to have a plan….
…the world often turns out different to the way you expected so….

Key concepts

A **target** - what we would ***like*** to happen
which we achieve by producing
A **forecast-** what we think ***will*** happen
based on:
A set of **plans**: what we ***intend*** to do,
which we change to achieve our target

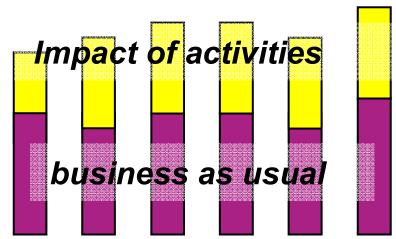
Specification for a forecast
T = timely
A = actionable
R = reliable
A = aligned
C = cost effective

TIMELY

…in good time to take action

ACTIONABLE

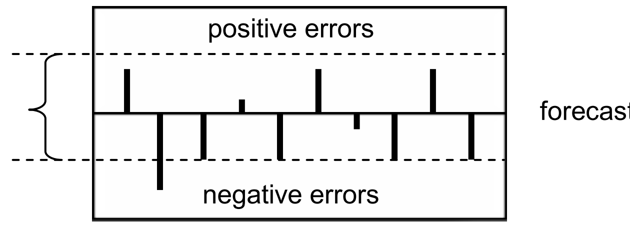
…good forecasts have information about things we can change…



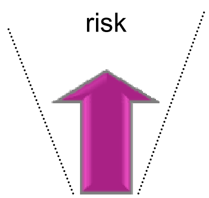
RELIABLE

…unbiased (+ errors = - errors)..

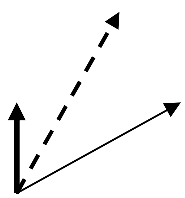
..with an acceptable (known) level of variation…



ALIGNED

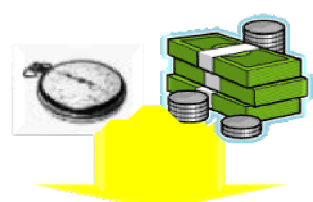


not



…pointing in the same direction…

COST EFFECTIVE



…right first time - no rework or waste

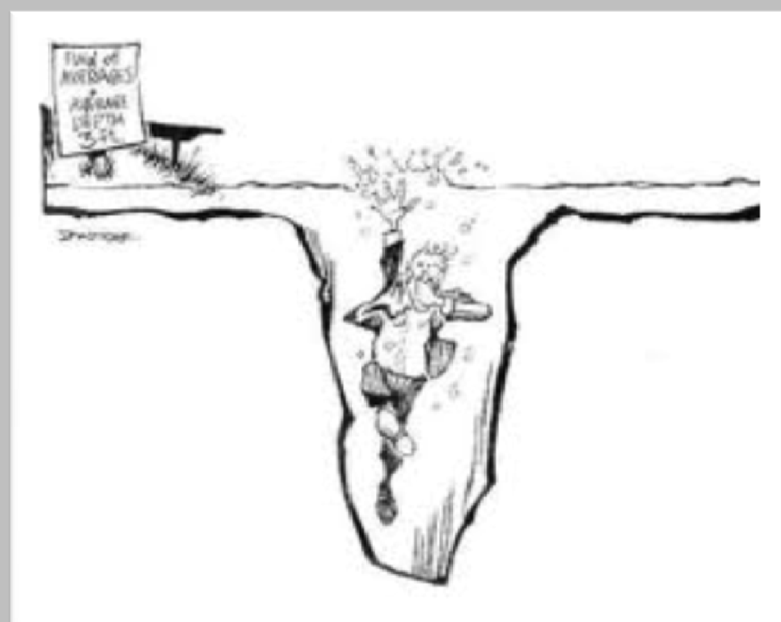
How do I assess and deal with uncertainty?

Mastering risk: The theory

A forecast about your forecasts

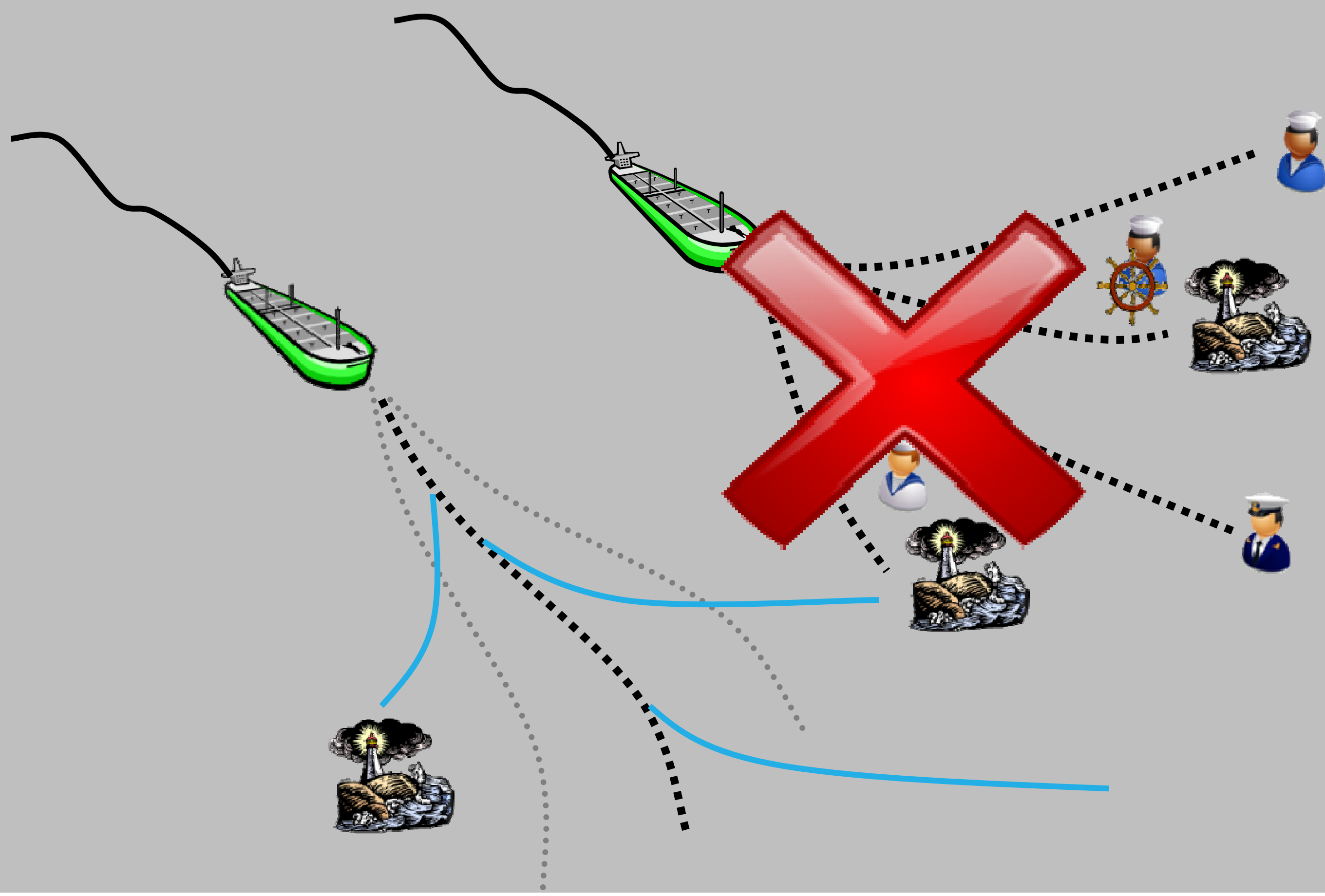
They will be wrong!

the *Flaw of Averages*



Aligned

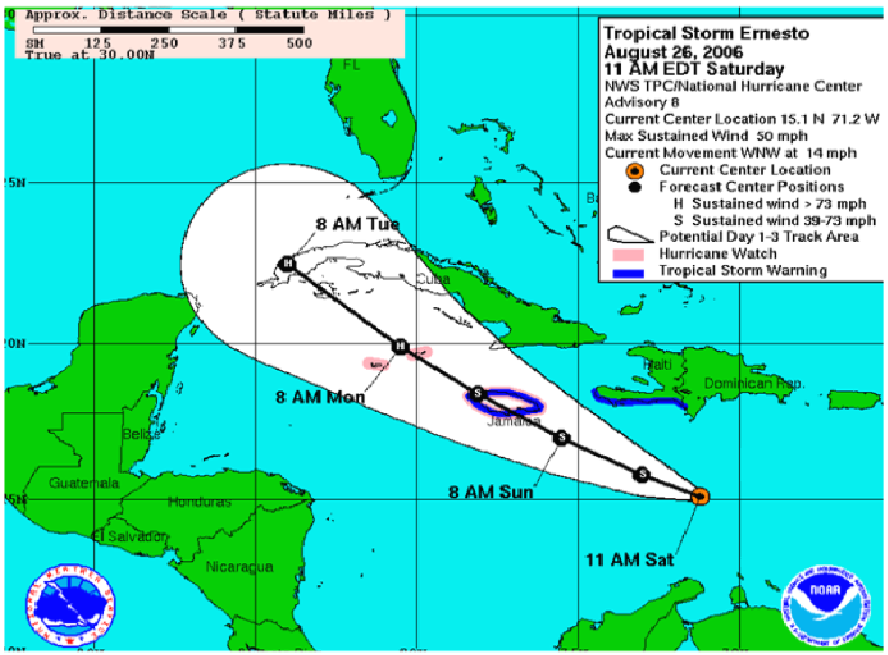
There should be only one set of forecast numbers
… but the unpredictable nature of the world needs to be taken into account

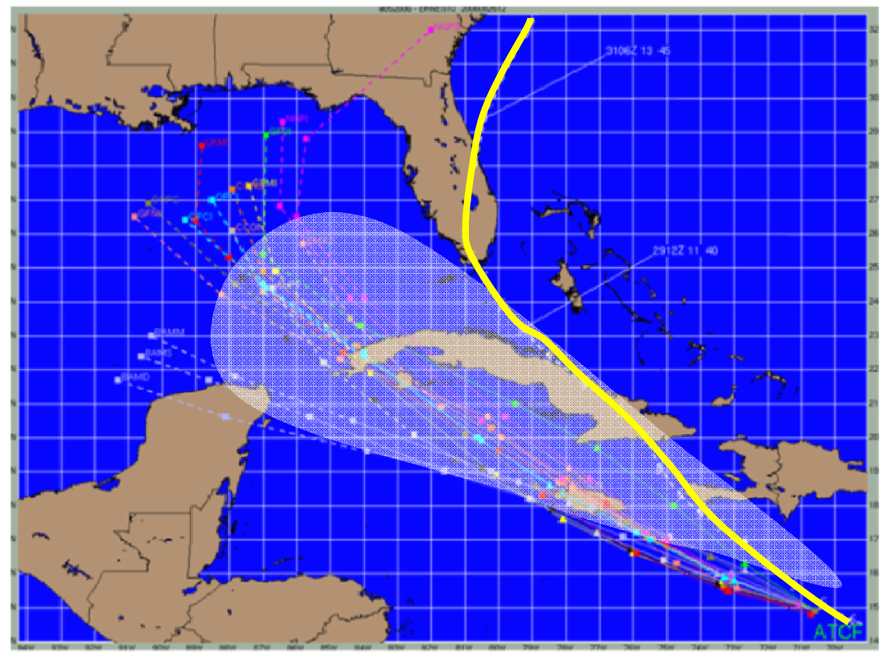


Unless you are creating them, it is difficult to forecast discontinuities

So why bother?

Hurricane Ernesto



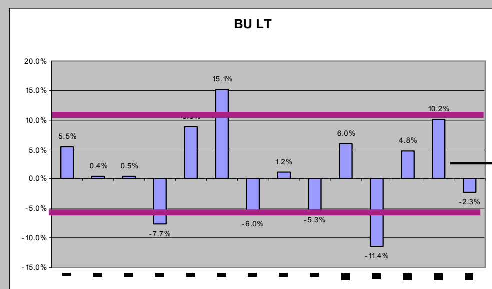


How do I assess and deal with uncertainty?

Mastering risk: The practice

Estimating risk

Analyze past performance



Average variation 10%

+/- 10% x 1.25 = 67% confidence

+/- 10% x 2.0 = 90% confidence

+/- 10% x 2.5 = 95% confidence

Mathematical modeling

Input A: Volume

Input B: Price

Input A: Usage

Input B: Wastage

Cost model A*((B*C*(1+D))

Output: cost forecast

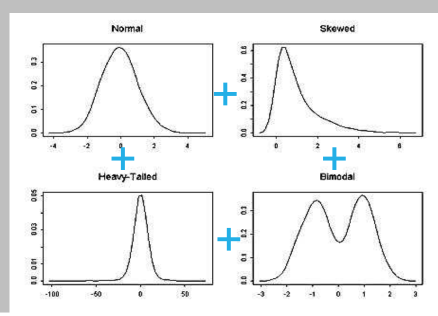
Central forecast

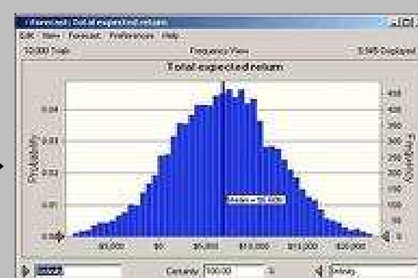
Scenario A

Scenario B

Scenario C

Statistical modeling





Adding probabilities

10%

Adding probabilities

10% x 10% = 1%

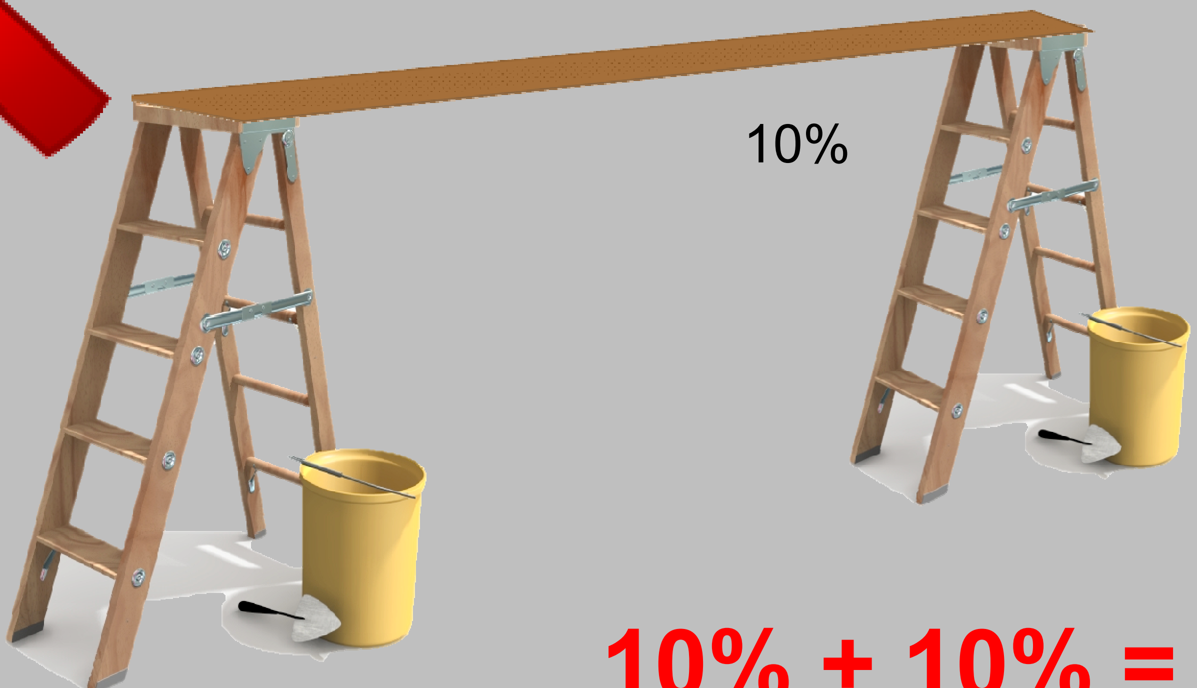
10%

10%

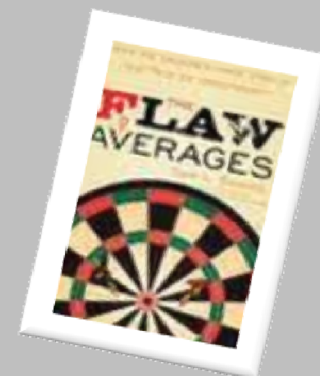
Adding probabilities

~~10% x 1 1%~~

10%

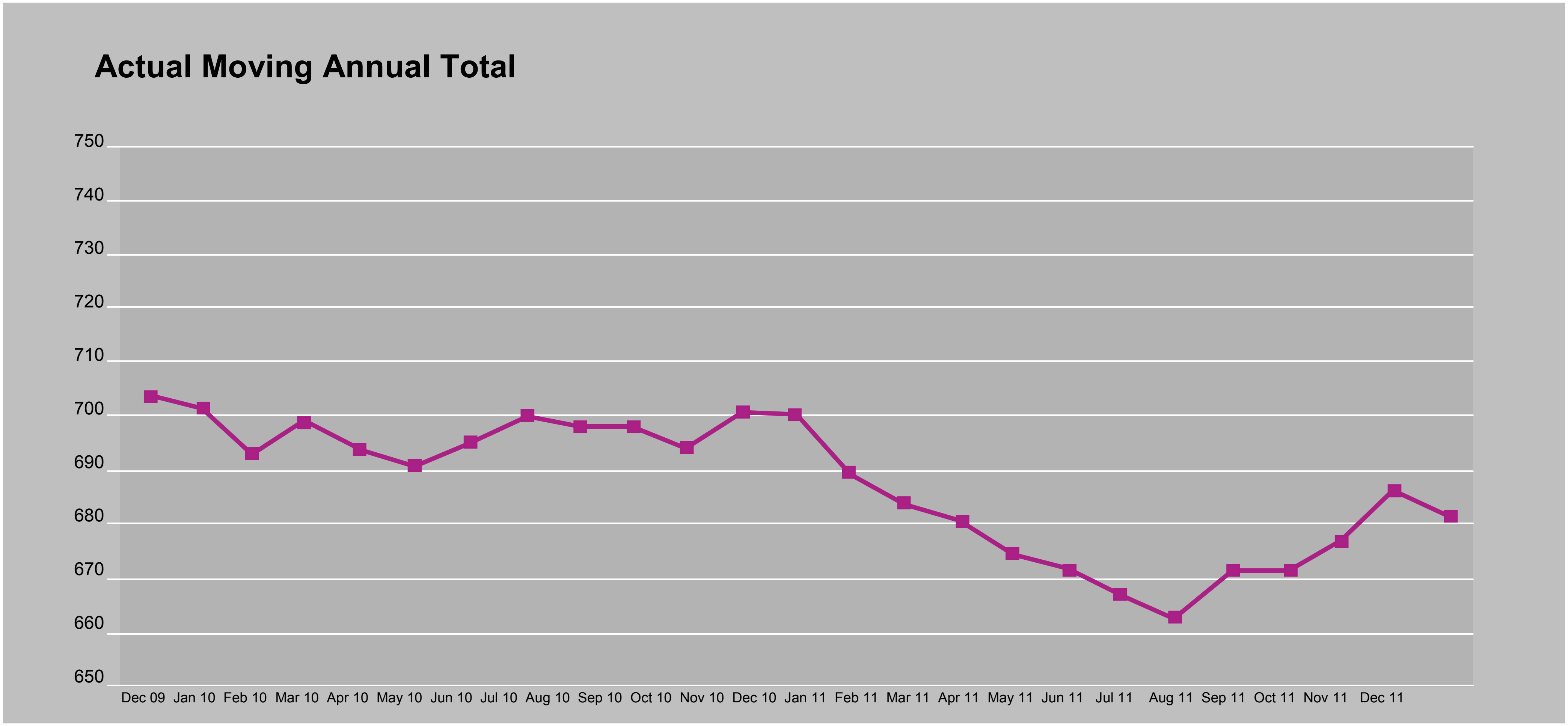


10%



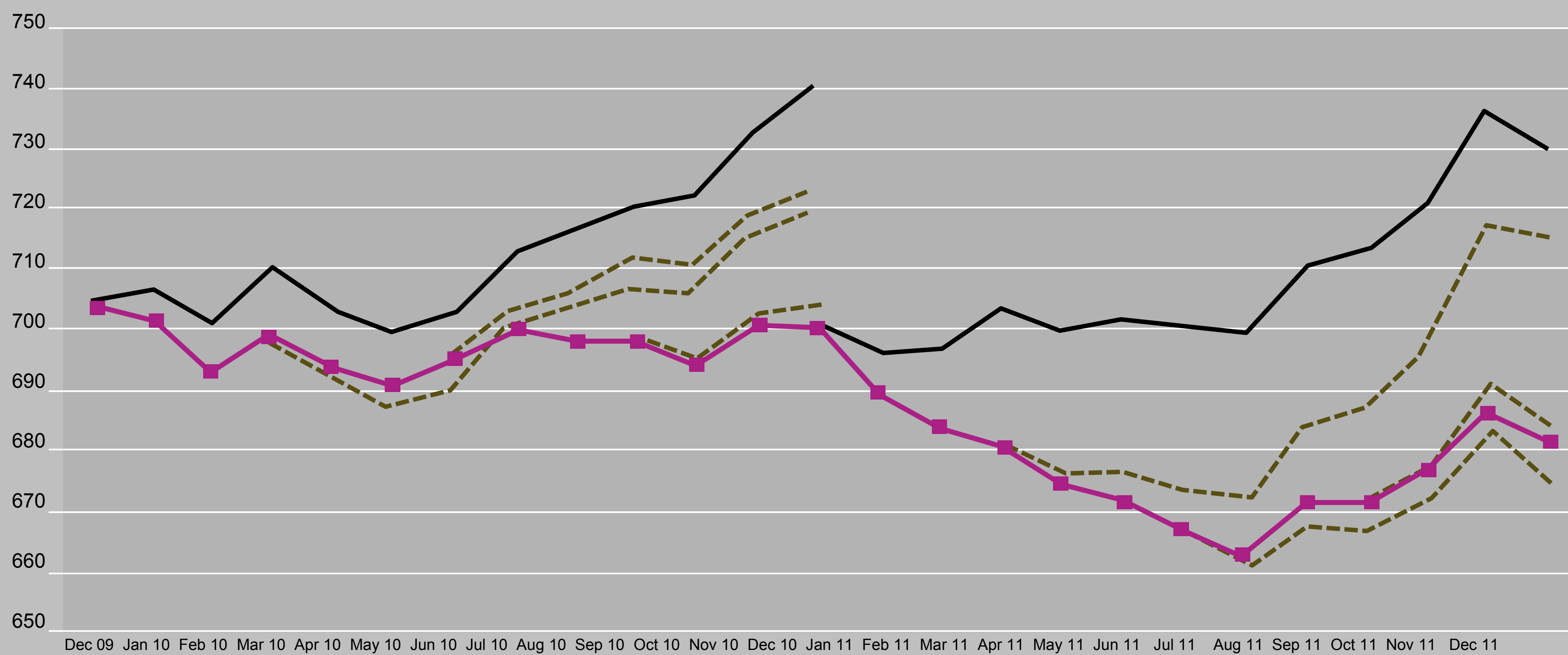
10% + 10% = 20%

1. Understand trends

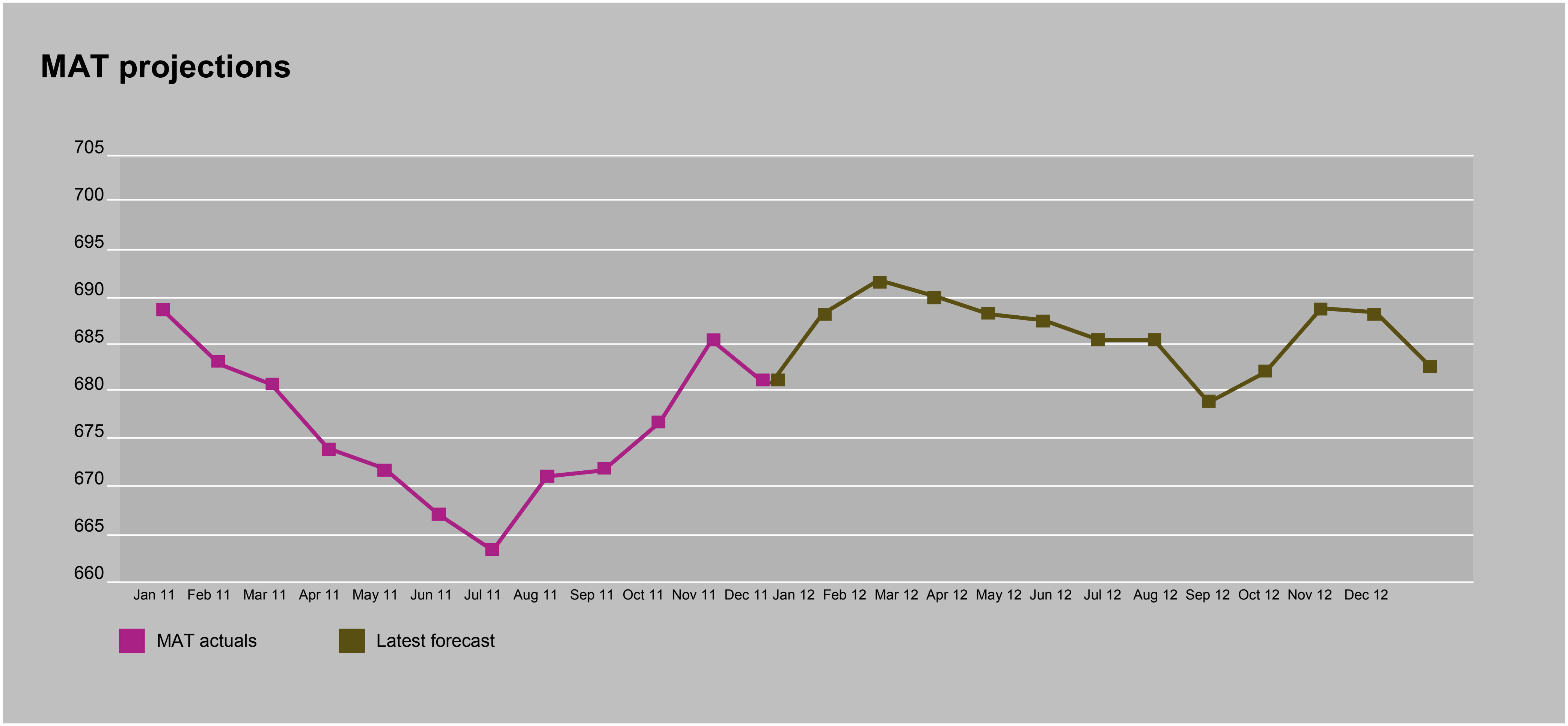


2. Get a feel for how wrong you can be

Actual and forecast Moving Annual Total

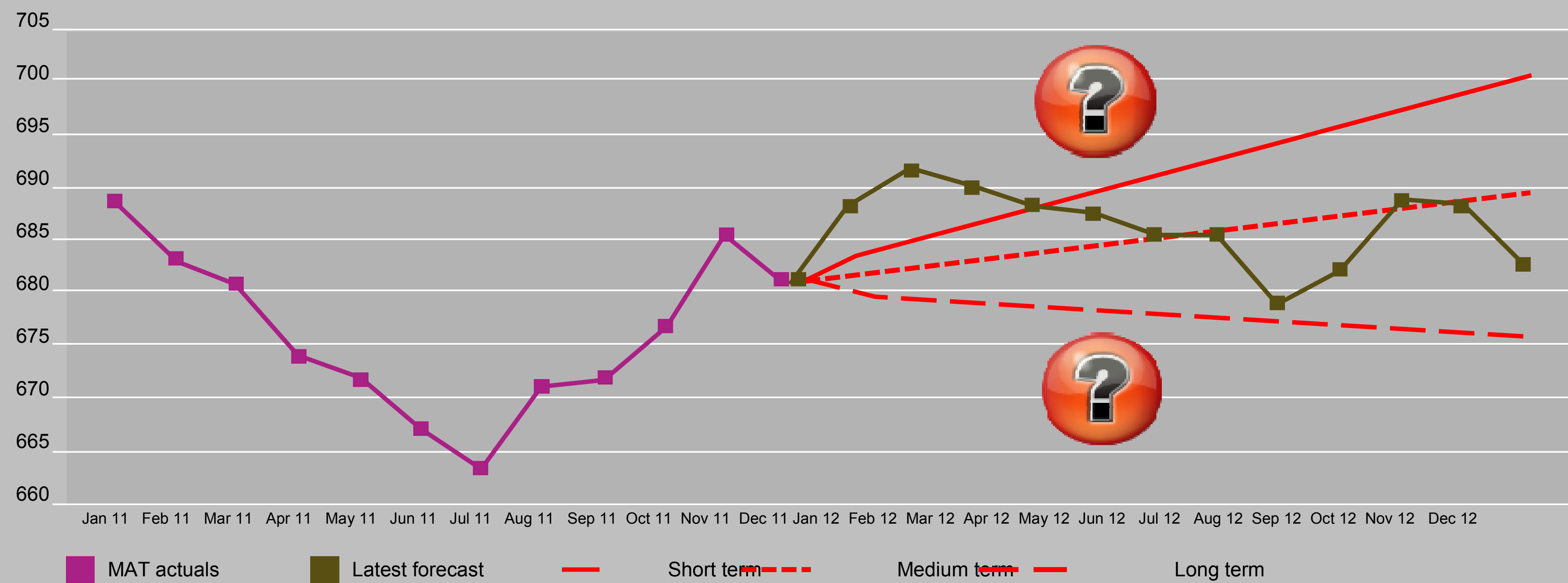


3. Plot your forecast



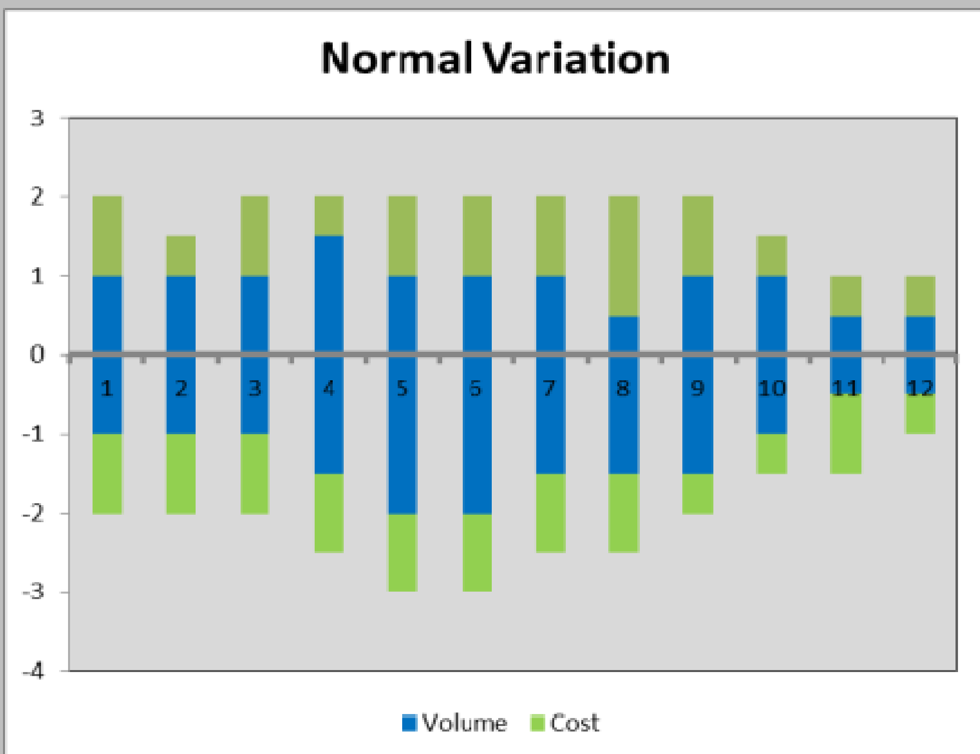
4. Create some “business as usual” scenarios

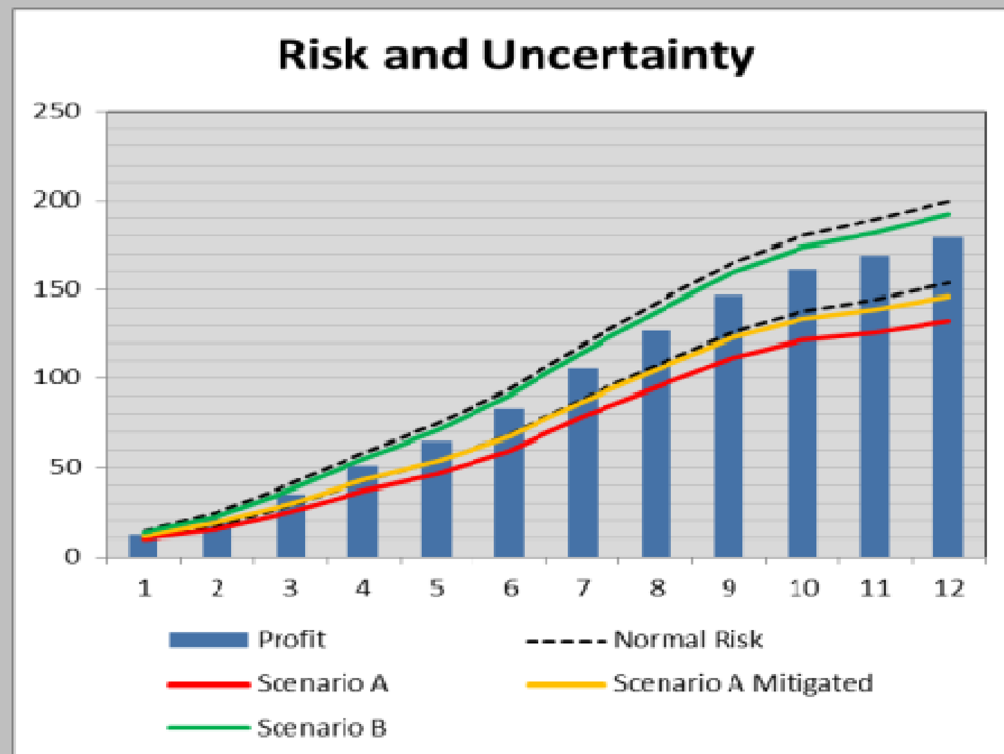
Moving Annual Total projections



Then stress test your forecast to identify “discontinuity scenarios”

The End Result





Managing risk

Passive

- Accept it!
- Insurance
- Hedge
- Buffer

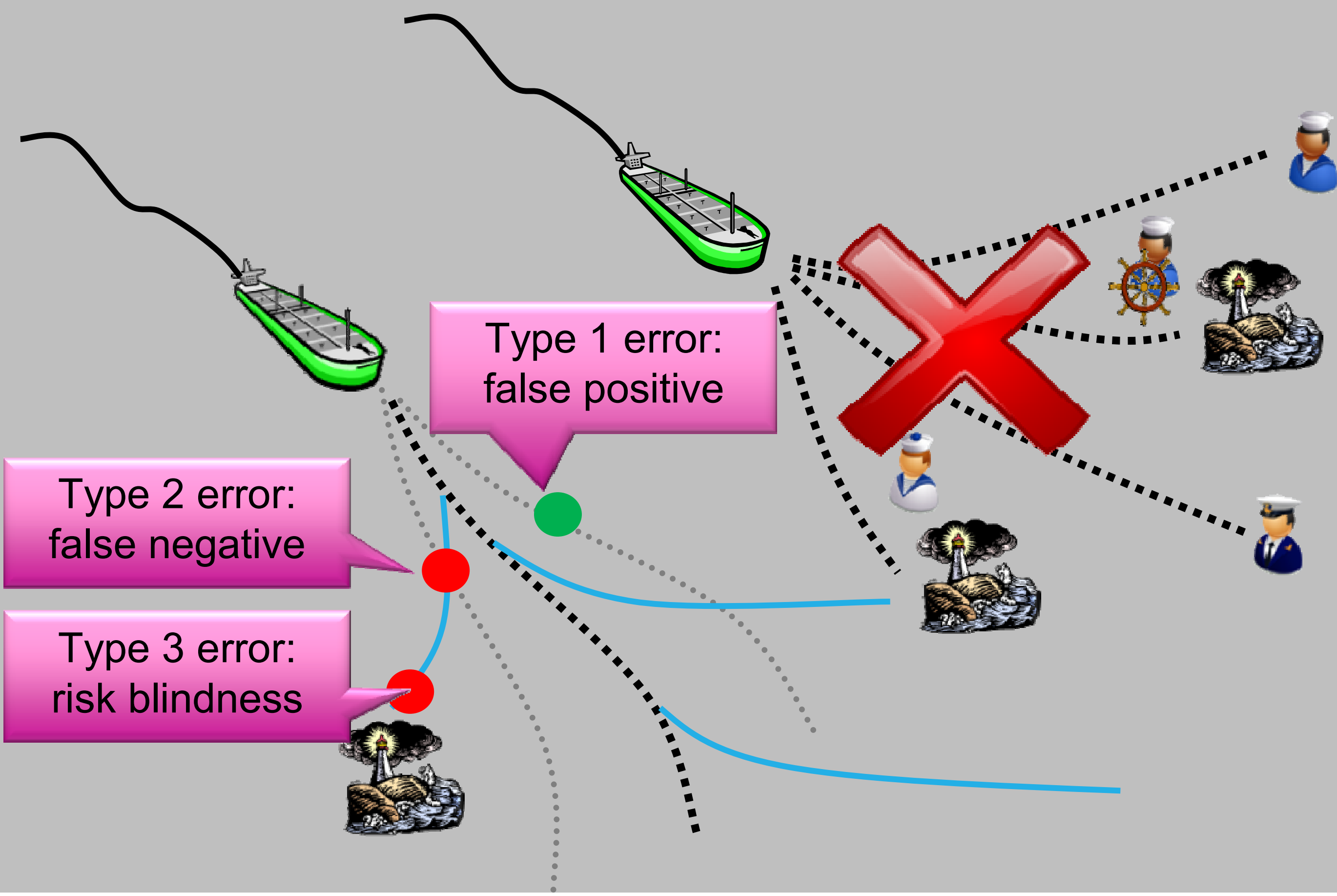
Active

- Create options
  - Defer commitments
  - Create alternatives
- Contingency Plans

Risk blindness

Aligned

There should be only one set of forecast numbers
… but the unpredictable nature of the world needs to be taken into account



High Reliance Organisations

MINDFULNESS

1. Preoccupation with failure
2. Reluctance to simplify
3. Sensitivity to operations
4. Commitment to resilience
5. Deference to expertise

Awareness test | video


Awareness Test

?

Face in a crowd

Face in a crowd

Face in a crowd

Future Ready:
How To Master Business Forecasting

A practical guide to help executives navigate through turbulent times

John Wiley and Sons 2010
www.tinyurl.com/futureready-uk
www.satoripartners.co.uk

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