IBM Finance Forum 2011
Anticipate and shape business outcomes

Mastering forecasting

Practice and principles

IBM

Steve Morlidge

- Unilever 1978 - 2006 roles include:
  - Controller Unilever Foods UK−$1 billion turnover
  - 2002 - 2006 Leader Dynamic Performance Management Change Project−part of Unilever's Finance Academy
- Outside Unilever
  - Chairman of BBRT 2001 – 2006
  - BBRT Associate 2007
  - 2006 – Founder & Director Satori Partners Ltd
  - 2005 – PhD. Hull University−Management Cybernetics
  - 2007 – Visiting Fellow−Cranfield University
  - 2009 Nov. - Publish book "Future Ready: How to Master Business Forecasting"
  - 2010 Editorial Board of Foresight Magazine

Why forecast?

Should we have a barbecue?

Lagging indicator

Leading indicator

Forecast

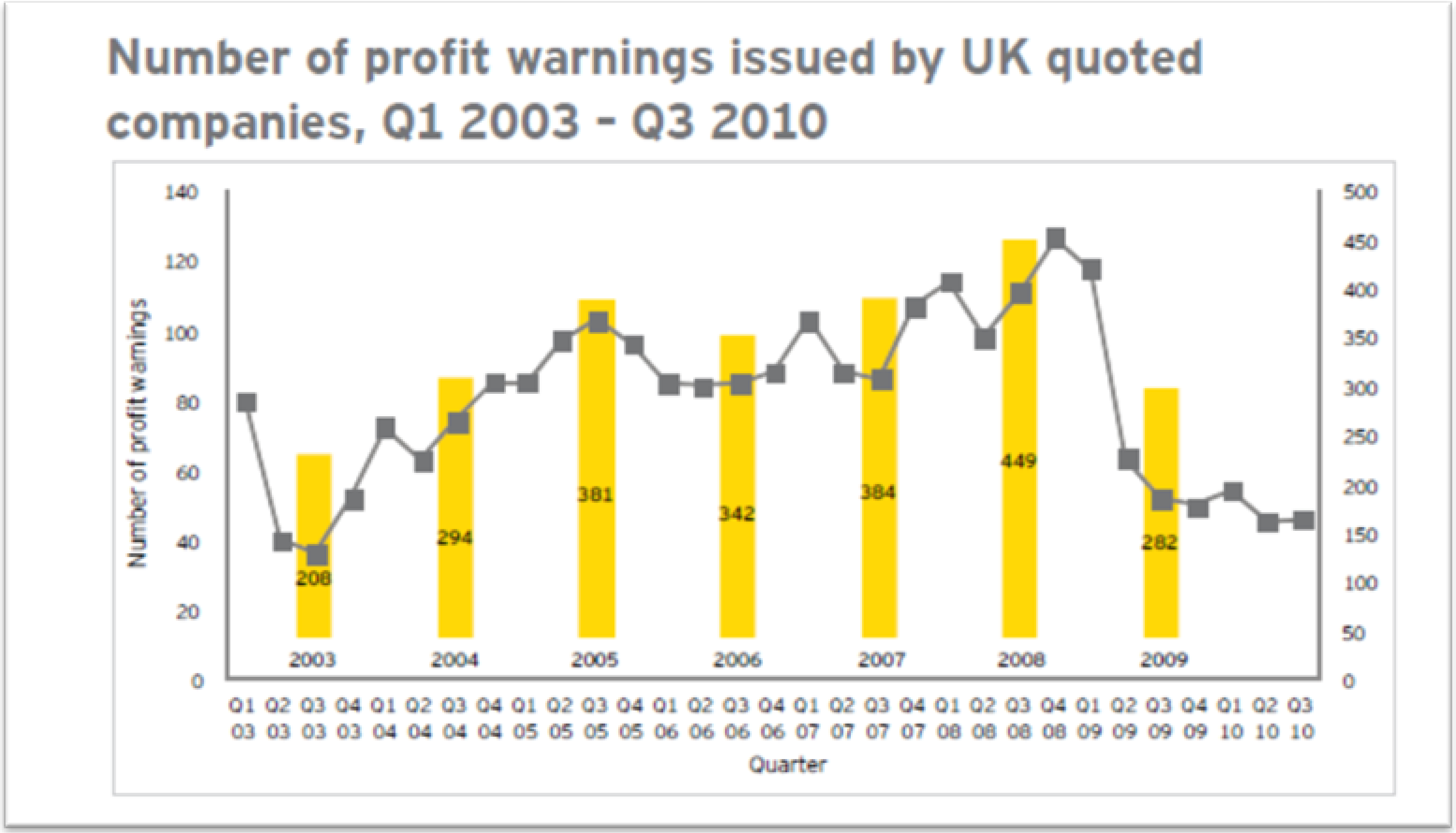
"It's awful. Why did no one see it coming?"

Queen Elizabeth II

London School of Economics

Bonfire Night 2008

UK profit warnings



Average market cap

FTSE 100	£10.0B
All quoted (1400)	£1.2B

Source: Ernst & Young 2010

Impact of warning: **10% to 20%**

TOP EXTERNAL CONCERNS

RANK (previous quarter)

EUROPE

	Rank (previous quarter)	Concern
—	1 (1)	Consumer demand
▲	2 (3)	Financial/ banking system
▼	3 (2)	Credit market/ interest rates
—	4 (4)	Currency volatility
▲	5 (7)	Housing market fallout
✱	6 (NR)	Government policy
▼	7 (6)	Foreign competition
✱	8 (NR)	Stability of local and central government
—	9 (9)	Financial regulation
—	10 (10)	Trade policies and agreements

UNITED STATES

	Rank (previous quarter)	Concern
—	1 (1)	Consumer demand
—	2 (2)	Credit markets/ interest rates
▲	3 (4)	New administration and Congress
▼	4 (3)	Housing market fallout
—	5 (5)	Financial regulation
—	6 (6)	Currency volatility
—	7 (7)	Cost of non-fuel commodities
—	8 (8)	Cost of fuel
✱	9 (NR)	Trade policies and agreements
▼	10 (9)	Foreign competition

ASIA*

	Rank (previous quarter)	Concern
—	1 (1)	Consumer demand
▲	2 (3)	Credit markets/ interest rates
▼	3 (2)	Currency volatility
▲	4 (7)	Foreign competition
✱	5 (NR)	Rise of protectionism in the West
—	6 (6)	Cost of fuel
▼	7 (5)	Cost of non-fuel commodities
✱	8 (NR)	Housing market fallout
▼	9 (8)	Financial regulation
▼	10 (9)	Trade policies and agreements

TOP INTERNAL CONCERNS

RANK (previous quarter)

EUROPE

	Rank (previous quarter)	Concern
—	1 (2)	Ability to forecast results
—	2 (2)	Working-capital management
—	3 (3)	Maintaining morale during downturn
▲	4 (6)	Counterparty risk
—	5 (5)	Balance sheet weakness
▲	6 (7)	Supply chain risk
▼	7 (4)	Attracting/retaining qualified employees
—	8 (8)	Managing IT systems
▼	9 (10)	Intellectual property protection
✱	10 (NR)	Data security

UNITED STATES

	Rank (previous quarter)	Concern
—	1 (1)	Ability to forecast results
✱	2 (NR)	Working capital management
▼	3 (2)	Maintaining morale during downturn
▼	4 (3)	Balance sheet weakness
▼	5 (4)	Cost of health care
▼	6 (5)	Attracting/retaining qualified employees
▼	7 (6)	Supply chain risk
▼	8 (7)	Managing IT systems
▼	9 (8)	Pension obligations
▼	10 (9)	Intellectual property protection

ASIA*

	Rank (previous quarter)	Concern
—	1 (1)	Ability to forecast results
✱	2 (NR)	Working capital management
—	3 (3)	Maintaining morale during downturn
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▼	8 (7)	Managing IT systems
—	9 (9)	Intellectual property protection
▼	10 (8)	Data security

▲ Increased ▼ Decreased — Same ✱ New to top ten NR=not ranked

* Excluding China

SOURCE: BUSINESS OUTLOOK SURVEY BY CFO EUROPE, TILBURG UNIVERSITY AND DUKE UNIVERSITY

What are CFOs worried about?

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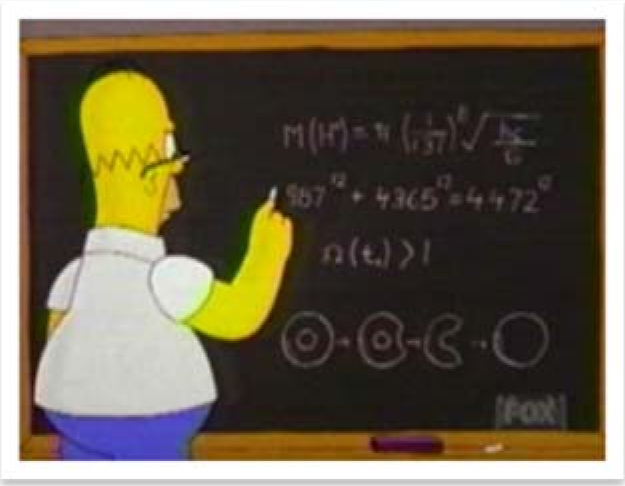
Another misconception:

"It's just common sense."

"It's highly specialized."



Mastering forecasting

1. Mastering purpose
2. Mastering time
3. Mastering models
4. Mastering measurement
5. Mastering risk
6. Mastering process

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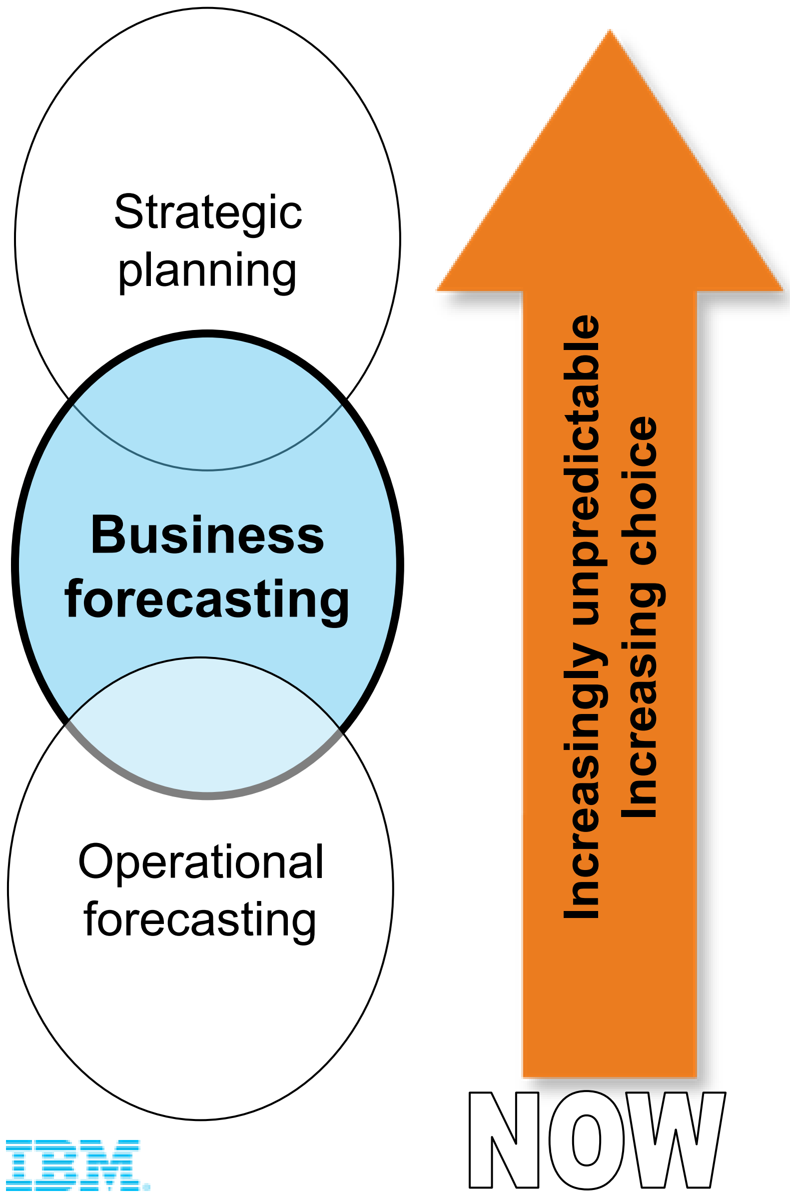
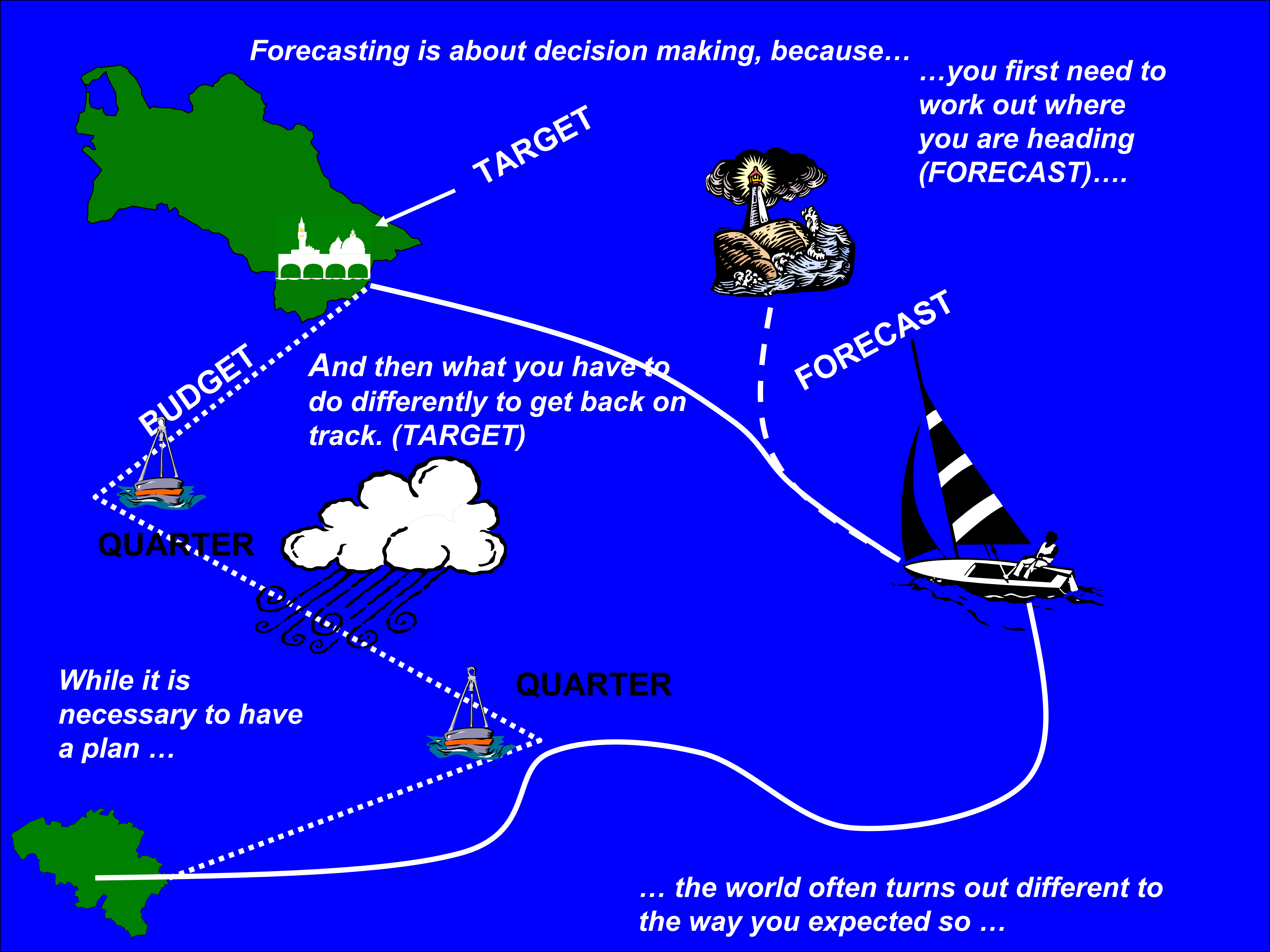


PURPOSE	PROCESS
ADAPTATION *How do we structure the business to compete most effectively?* Creating options	**ADAPTATION** *Freedom of action* *Alternative scenarios of the future environment* *Broad-brush estimates*
NAVIGATION *How do we deploy our resources to best effect?* **Decision making**	**NAVIGATION** *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*

CREATE THE FUTURE

SHAPE THE FUTURE

PREDICT THE FUTURE


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:

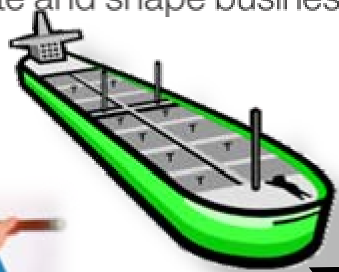
A **target** is what we would ***like*** to happen,
which we achieve by producing.
A **forecast** is what we think ***will*** happen
based on:
A set of **plans**: what we ***intend*** to do,
which we change to achieve our target.

Specification for a forecast:

T = timely
A = actionable
R = reliable
A = aligned
C = cost-effective

TARAC → **CARAT**

T imely



100 metres ahead
CHANGE DIRECTION

3 miles ahead - STOP

2 miles ahead - CHANGE DIRECTION

1 mile ahead - NOTHING

Our need to be able to forecast, to see into the future, is driven by how quickly we can react to what lies ahead.

Forecast horizon

Q1	Q2	Q3	Q4	Q5	Q6

(Minimum) decision-making lead time

Adjust existing plans

New actions

Major new initiatives

T imely

The frequency at which we forecast is driven by the rate of change in key variables.

VARIABILITY

CRITICALITY	VARIABILITY: LOW	VARIABILITY: HIGH
HIGH	LESS FREQUENT ROUTINE UPDATE ***OR BY EXCEPTION***	FREQUENT ROUTINE UPDATE
LOW	INFREQUENT UPDATE ***ONLY IF NECESSARY***	LESS FREQUENT ROUTINE UPDATE

T imely

The frequency at which we forecast is driven by the rate of change in key variables.

CRITICALITY \ VARIABILITY	LOW	HIGH
HIGH	LESS FREQUENT ROUTINE UPDATE **OR BY EXCEPTION**	FREQUENT ROUTINE UPDATE
LOW	INFREQUENT UPDATE **ONLY IF NECESSARY**	LESS FREQUENT ROUTINE UPDATE

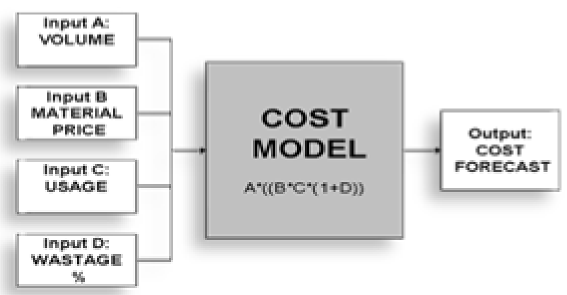
	Economic relevance	Variability	Speed of response	Update frequency	Forecast horizon
Revenues	High	High	High	Daily	Quarter
Labor costs	High	Low	Medium	Twice monthly	Six months
Fuel costs	High	High	Medium	Weekly	Quarter
Maintenance spending	Medium	Medium	Medium	Twice monthly	Six months
Advertising spending	Medium	Medium	High	Monthly	Six months
Aircraft ownership costs	Medium	Low	Low	Quarterly	Year
Airport rates and charges	Medium	Medium	Low	Weekly	Six months
Other operating	Medium	Medium	Medium	Twice monthly	Quarter

A ctionable

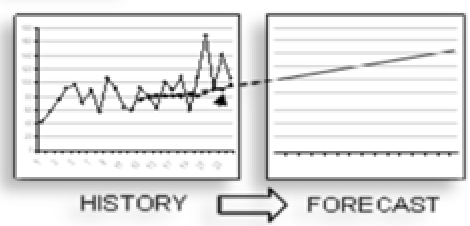
Every forecast is based on a model, and different approaches have different strengths and weaknesses.

Three types of model

Mathematical



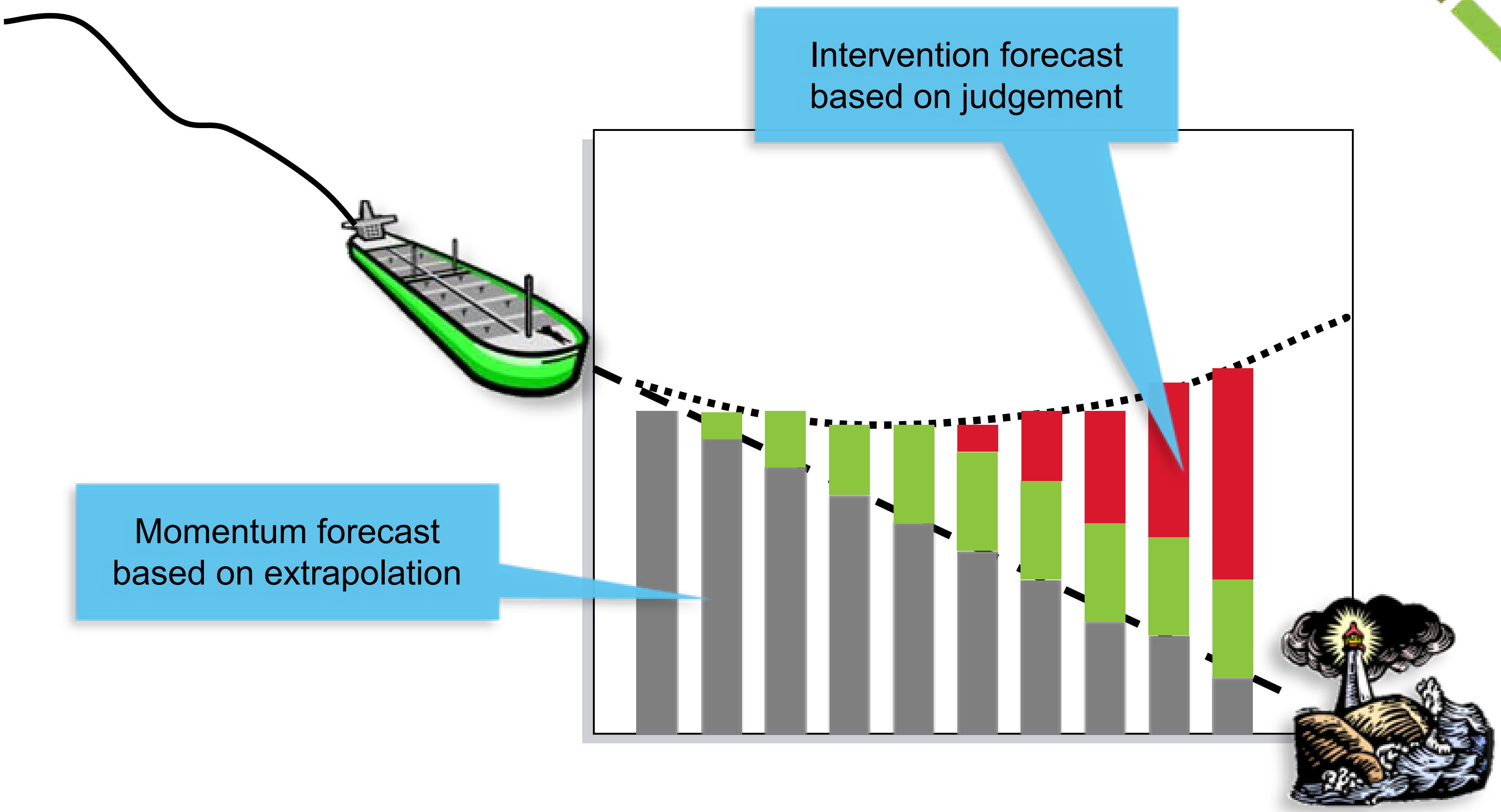
Statistical



Judgmental

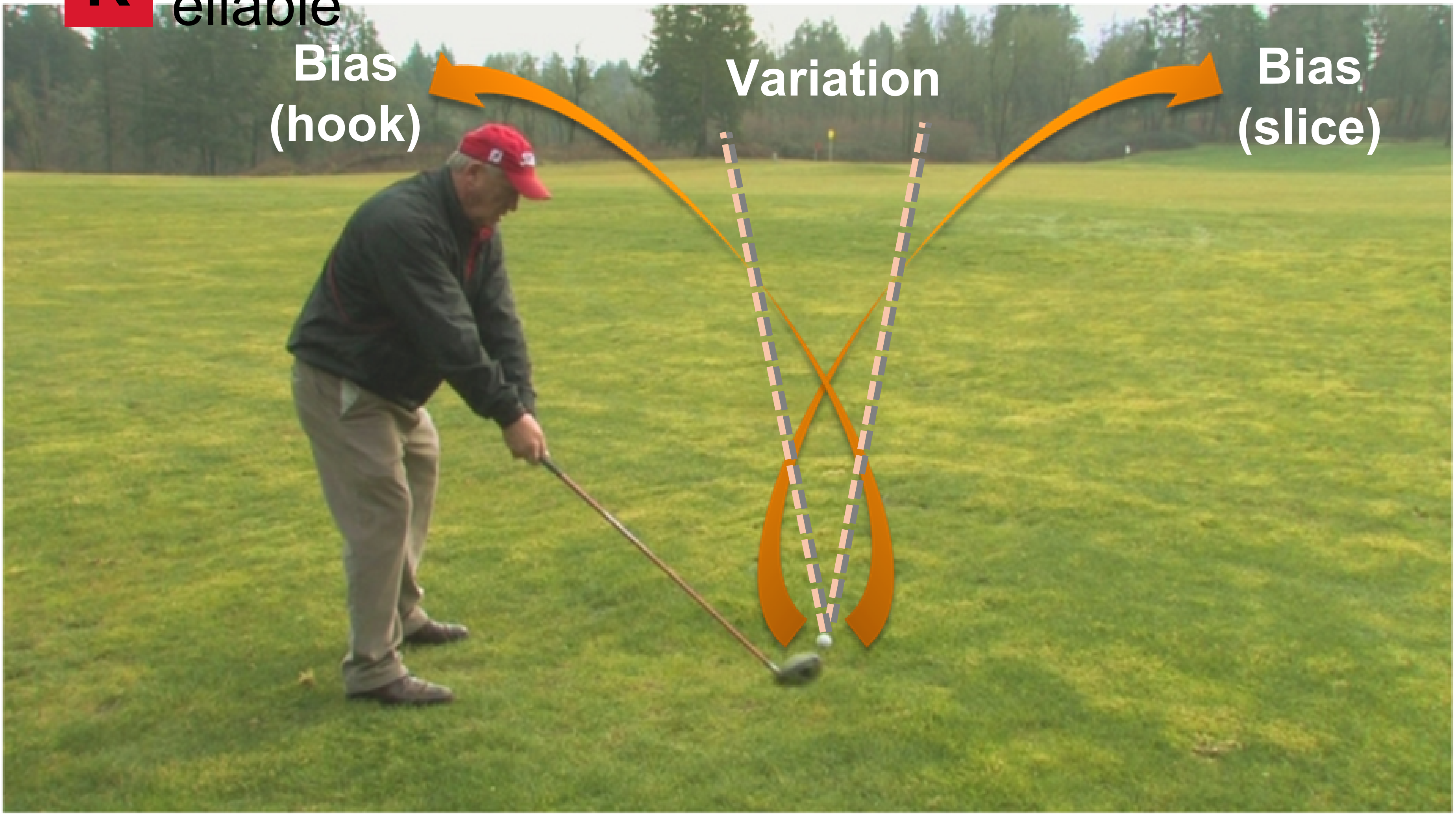
A ctionable

Every forecast is based on a model, and different approaches have different strengths and weaknesses.



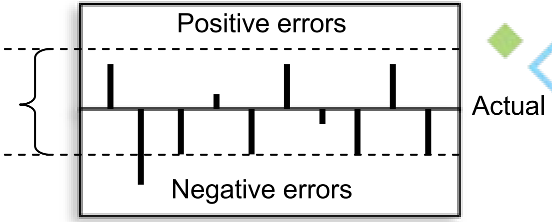
Forecasts are reliable if they are **unbiased** and have an acceptable level of **variation.**

R eliable



R eliable

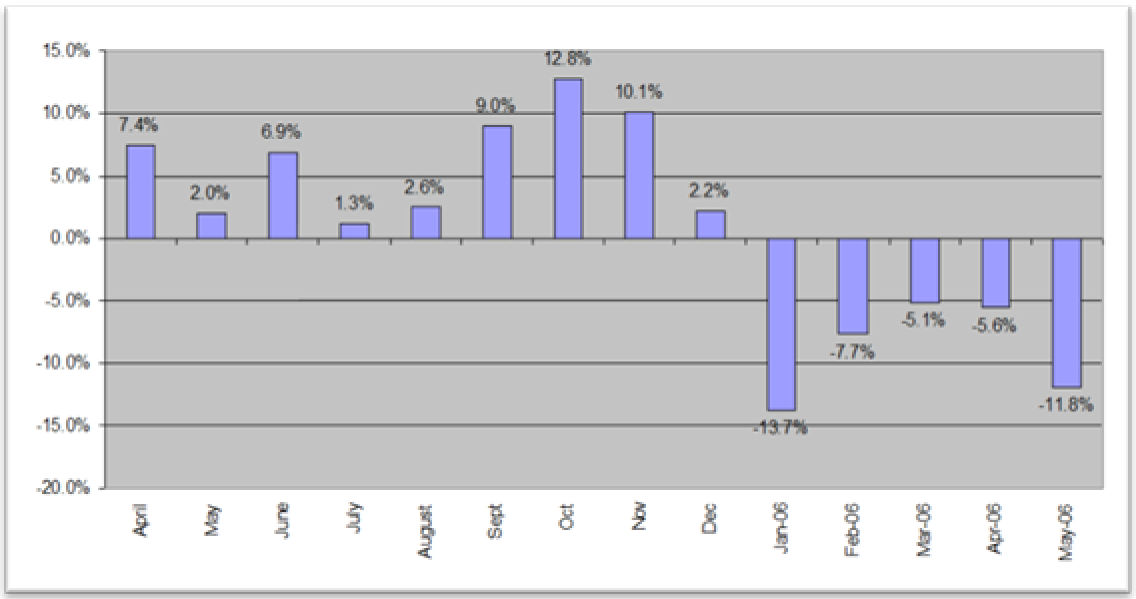
Forecasts are reliable if they are unbiased and have an acceptable level of variation.



	TARGET	ACTUAL
Average net error (bias)	<1%	0.8%
Average gross error (variation)	+/- 5%	<14%

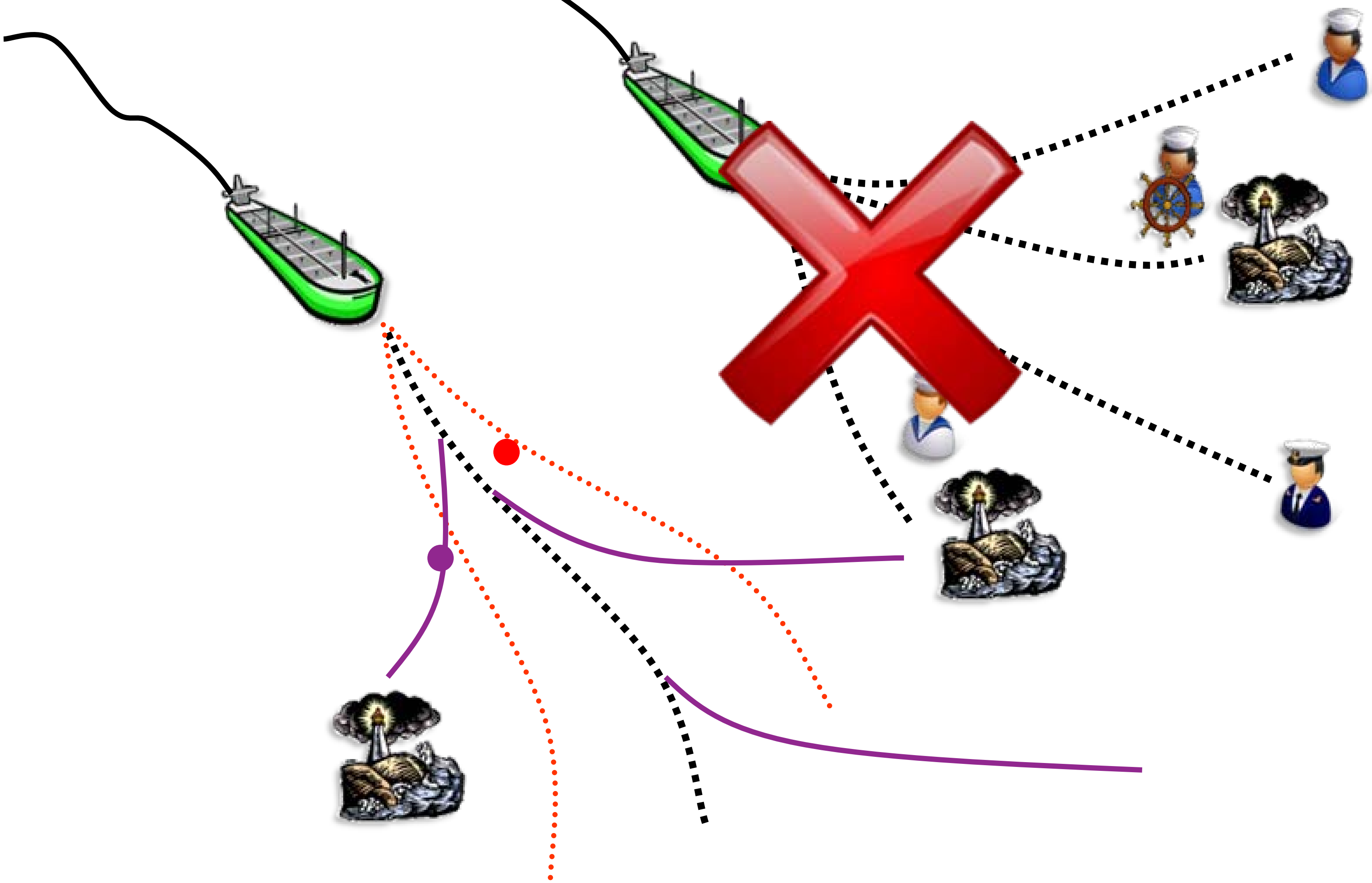
Is this forecast biased?

Is there too much variation?



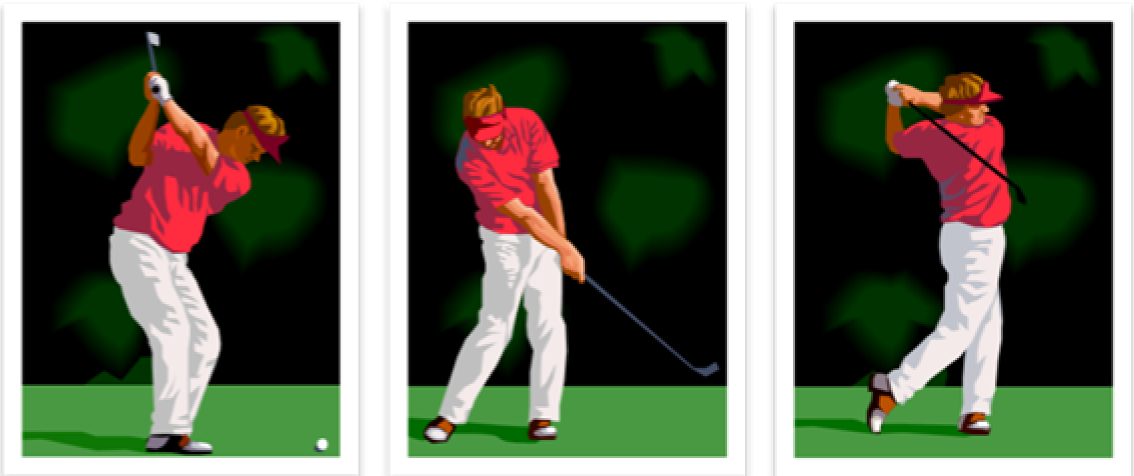
A ligned

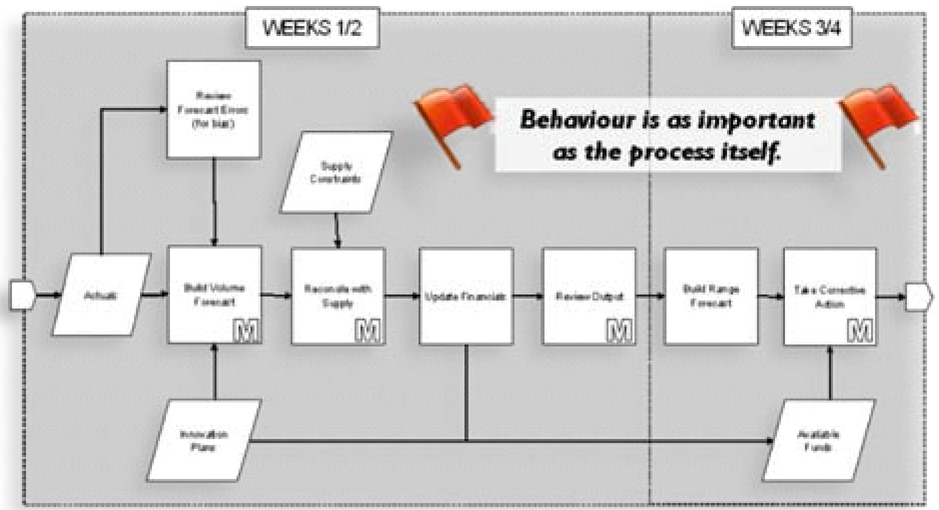
There should be only one set of forecast numbers. But the unpredictable nature of the world needs to be taken into account.



C ost-effective

An effective forecast process is also an efficient forecast process.





1. Do things in the right order, at the right speed.
2. Do it often, and in the same way.
3. Observe the results, separating bias (hook or slice) from variation.
4. Make adjustments, improve the process.

What is next?

- First steps
  - Engage all levels
  - Measure forecast quality
- Next steps
  - Design your new forecast process
  - Implement, automate, integrate
  - Educate
  - Measure
  - Learn and improve

Trademarks and notes