

[dstl]

26 October 2013

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Ministry
of Defence

VISUALISATION

Communicating results to Decision-Makers

EBDM Seminar

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March 2013

What will be covered today

- Introduction: Why good visualisation matters
- Gricean Maxims
- What we can learn from Management Consultants
- Common pitfalls and errors

We are not the experts

We encourage debate in
this seminar

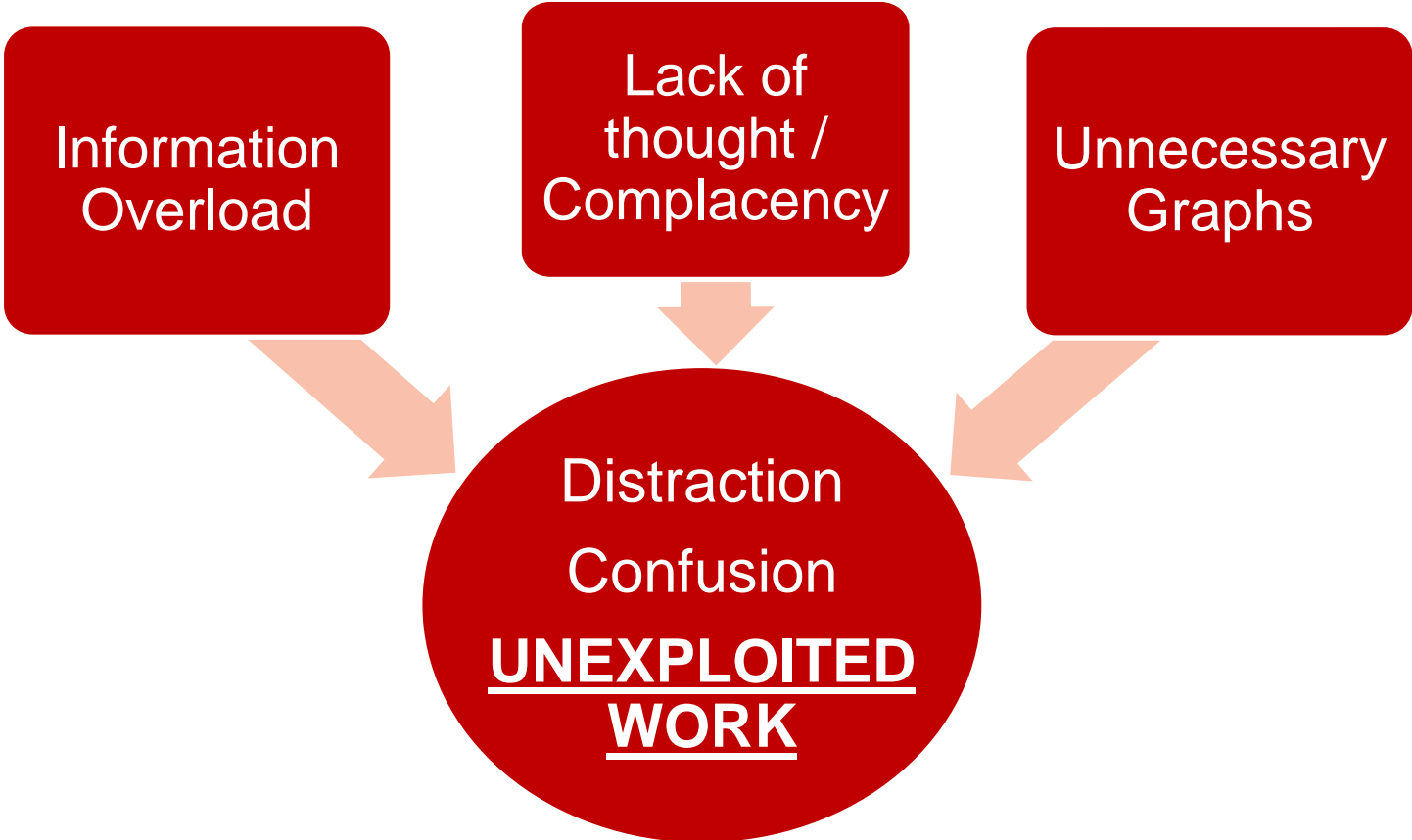
We have all experienced poor visualisation of outputs.

Hands up if you have...



- seen a slide of words too small to read?
- seen a graph you don't understand?
- experienced an illustration that only the creator understands?
- had so much information that you know it is going to over-run?

Why does the way we communicate our results matter?



Communicated results should provide clarity, not detail

- Reports are **not** read in entirety
- 1 page Executive Summary - **key results** as the 'so what'
- **Sound-bites** ensure enduring utilisation
- 'Techno babble' does not interest Customers
- Good visualisations aid **understanding and recall**



Gricean Maxims are present in effective communication

QUALITY

QUANTITY

RELEVANCE

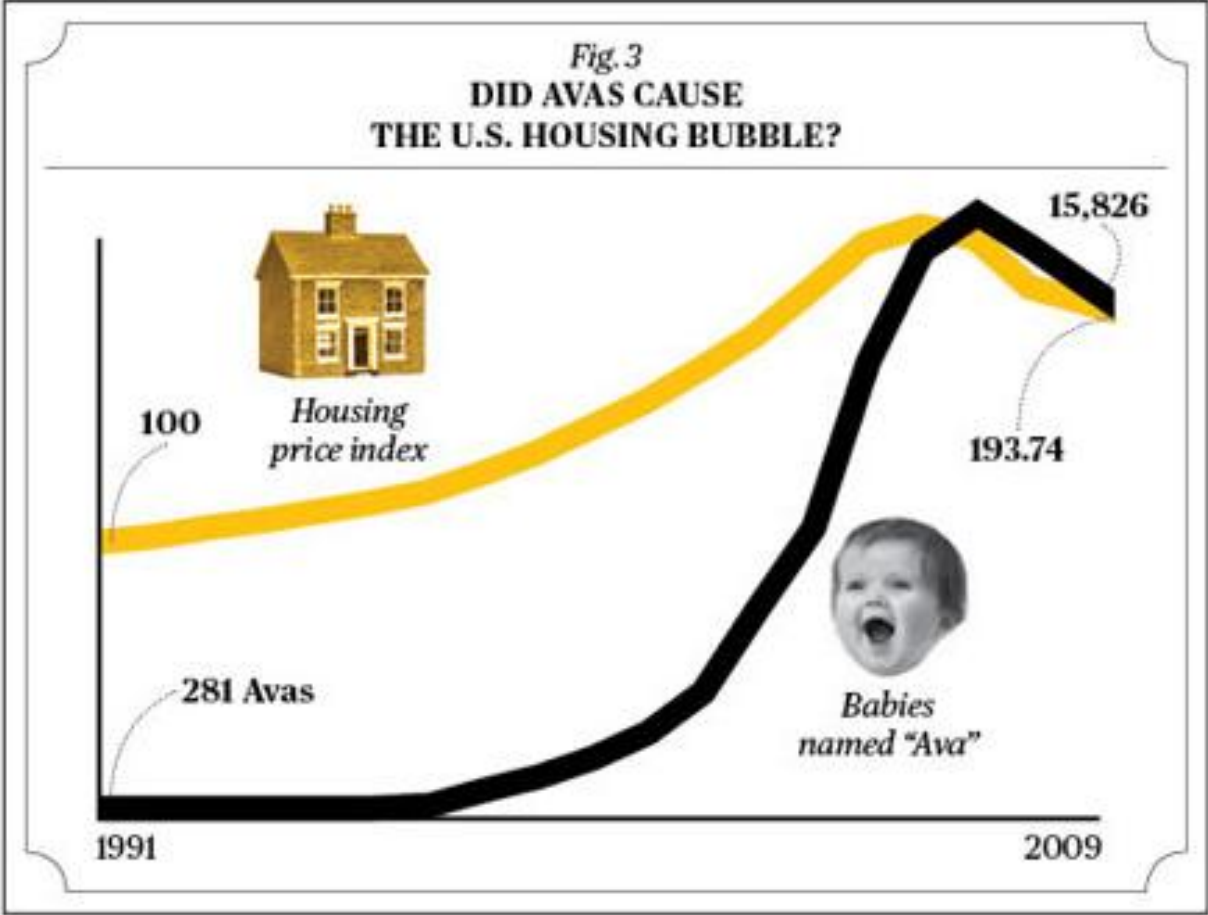
MANNER

Gricean Maxims are present in effective communication

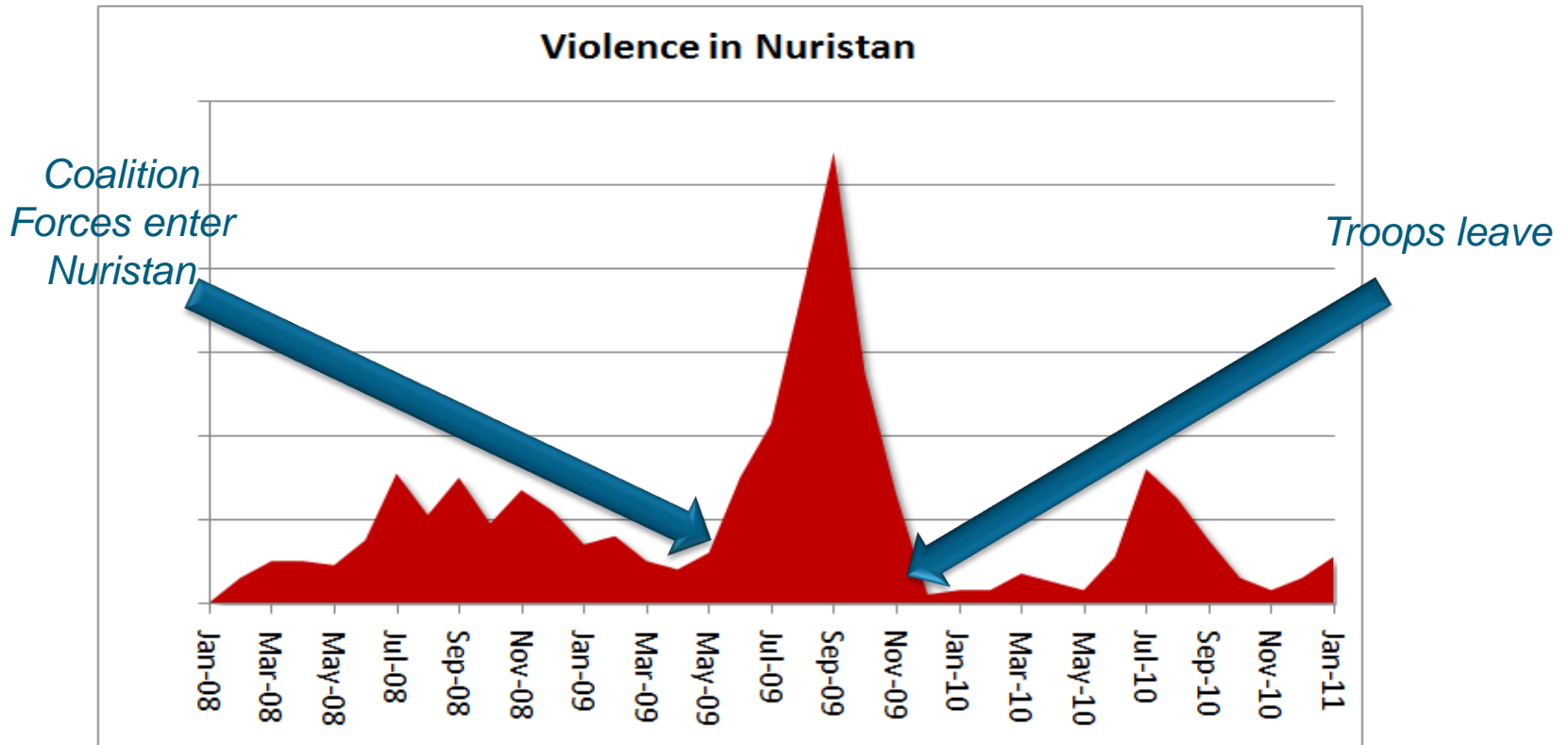


QUALITY

Visualisations are only as good as the underlying data



Visualisations are only as good as the underlying data



Gricean Maxims are present in effective communication



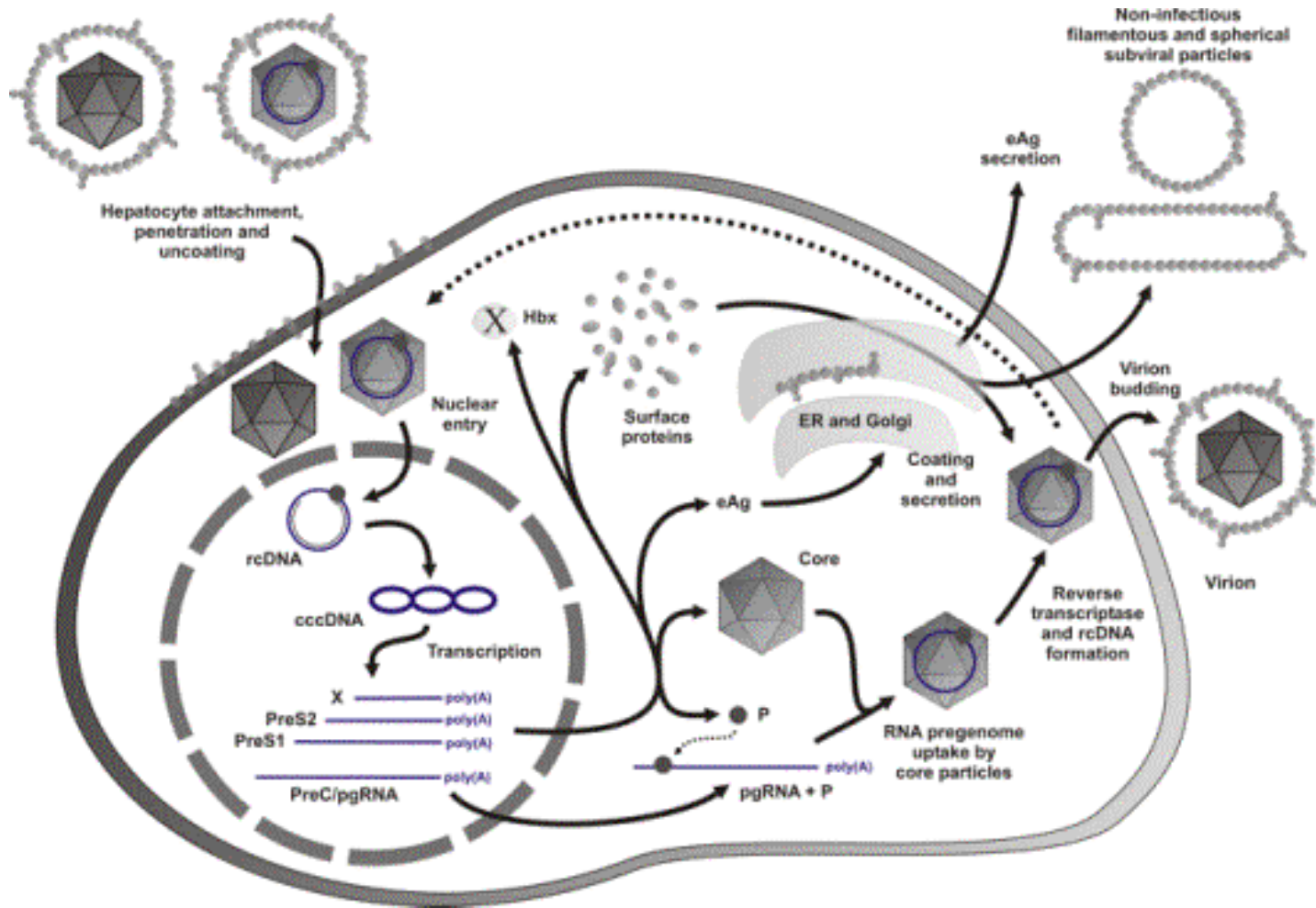
QUANTITY

HBV Genome Repair and Transcription

- The HBV DNA is brought into the nucleus where it is repaired to the covalently closed-circular form. The ligation of the 5' terminal nucleotides to the 3' terminal nucleotides is a multi-step process to occur.
- Once transcription is complete, the HBV genome is packaged into nucleocapsids.
- The surface proteins are synthesized and secreted from the cell.
- A part of the genome is packaged into pgRNA.
- It is hypothesized that the ATG allow the long messages to be encapsidated.

Visualisations aid
understanding and
recall

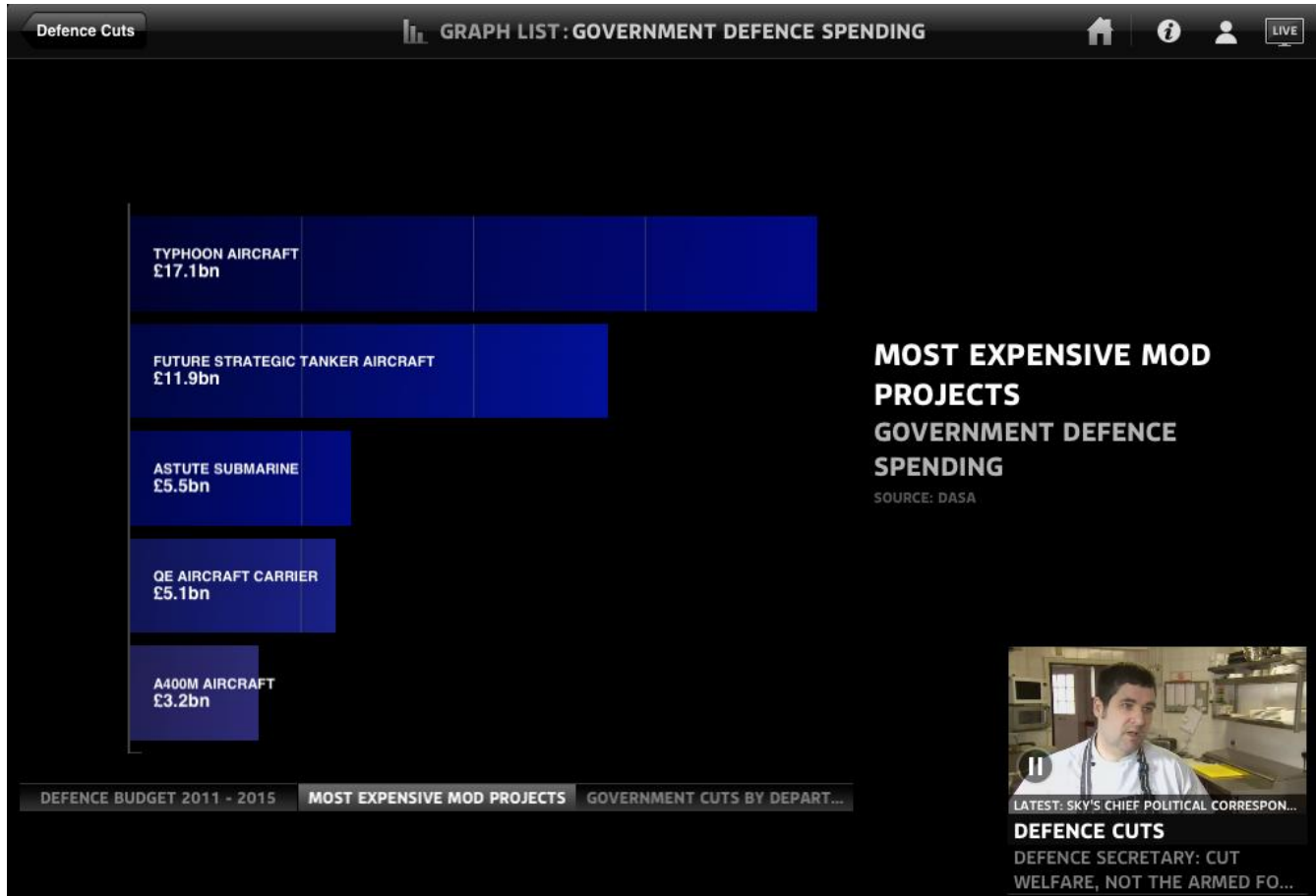
An alternative to the preceding slide....



We can learn from the media about keeping the quantity of information low



We can learn from the media about keeping the quantity of information low



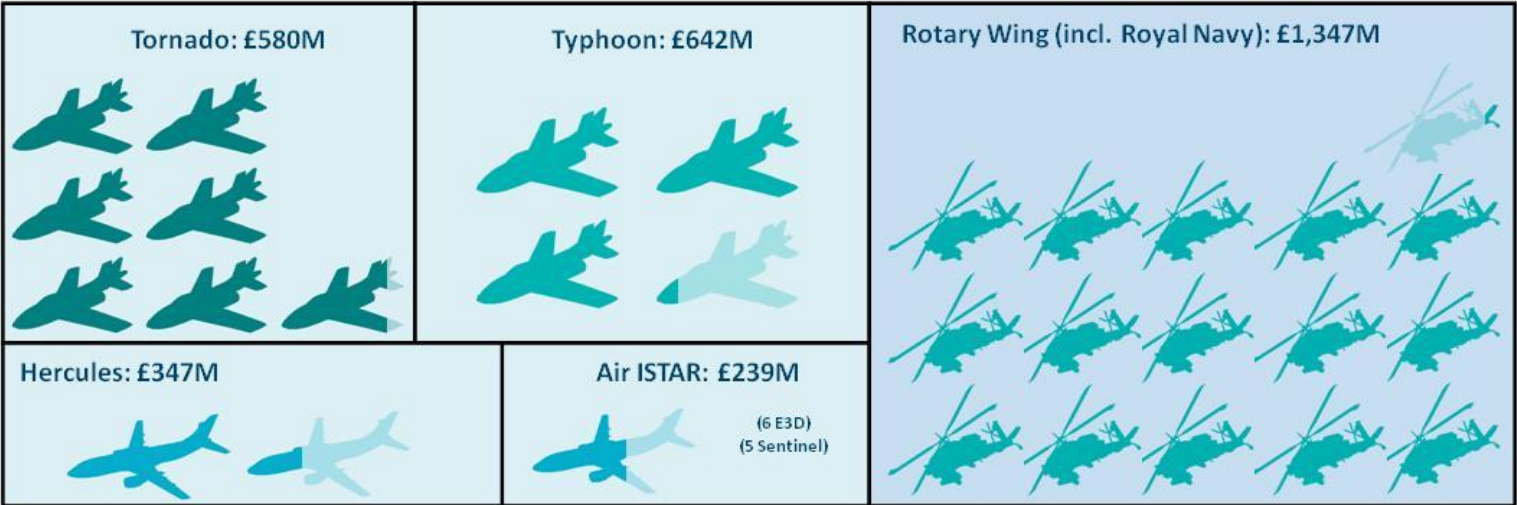
Gricean Maxims are present in effective communication

RELEVANCE

MANNER

Visualisations must be accurate, interesting and convey a message

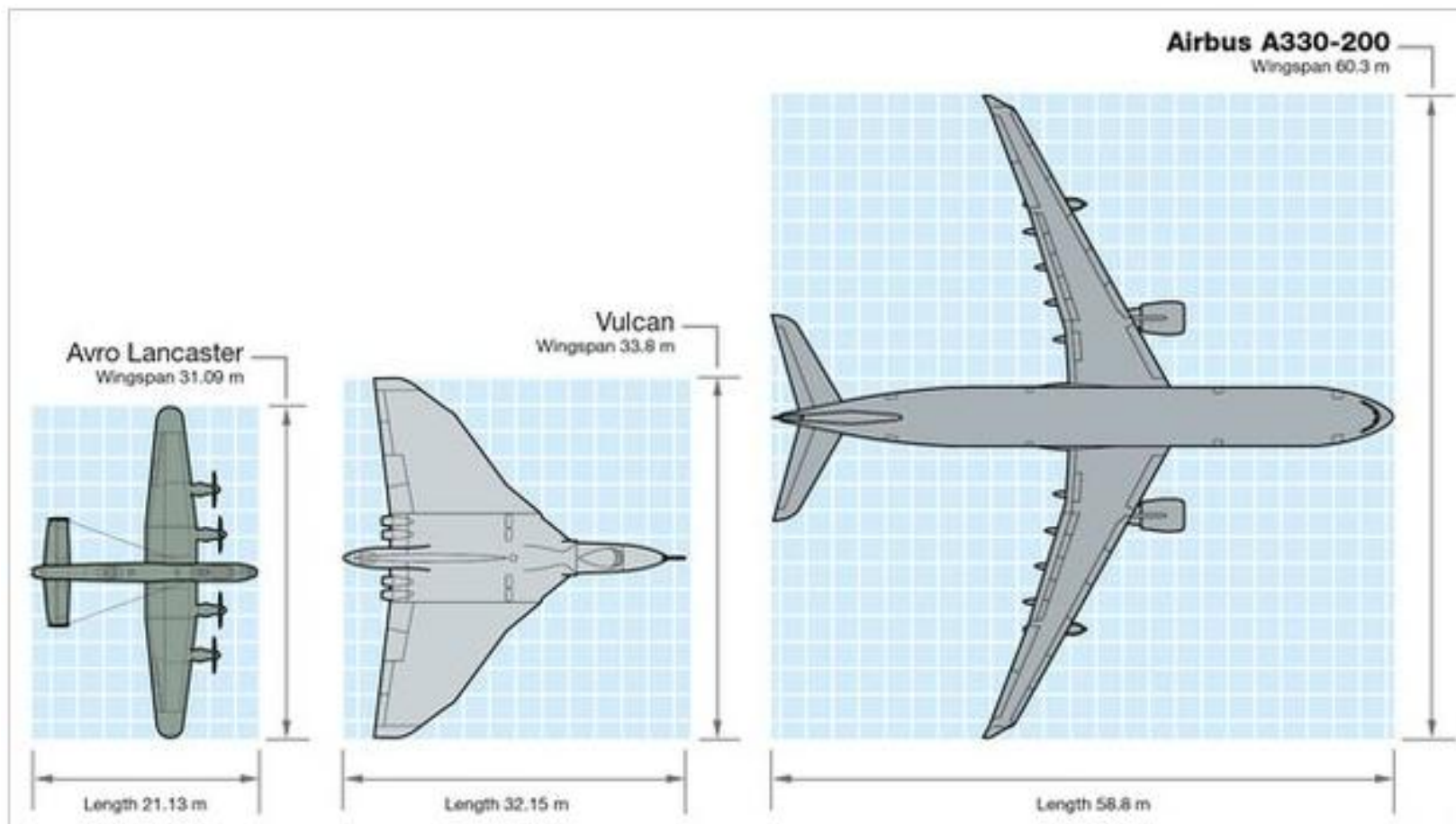
Current Air Domain Force Elements: How Many And At What Cost



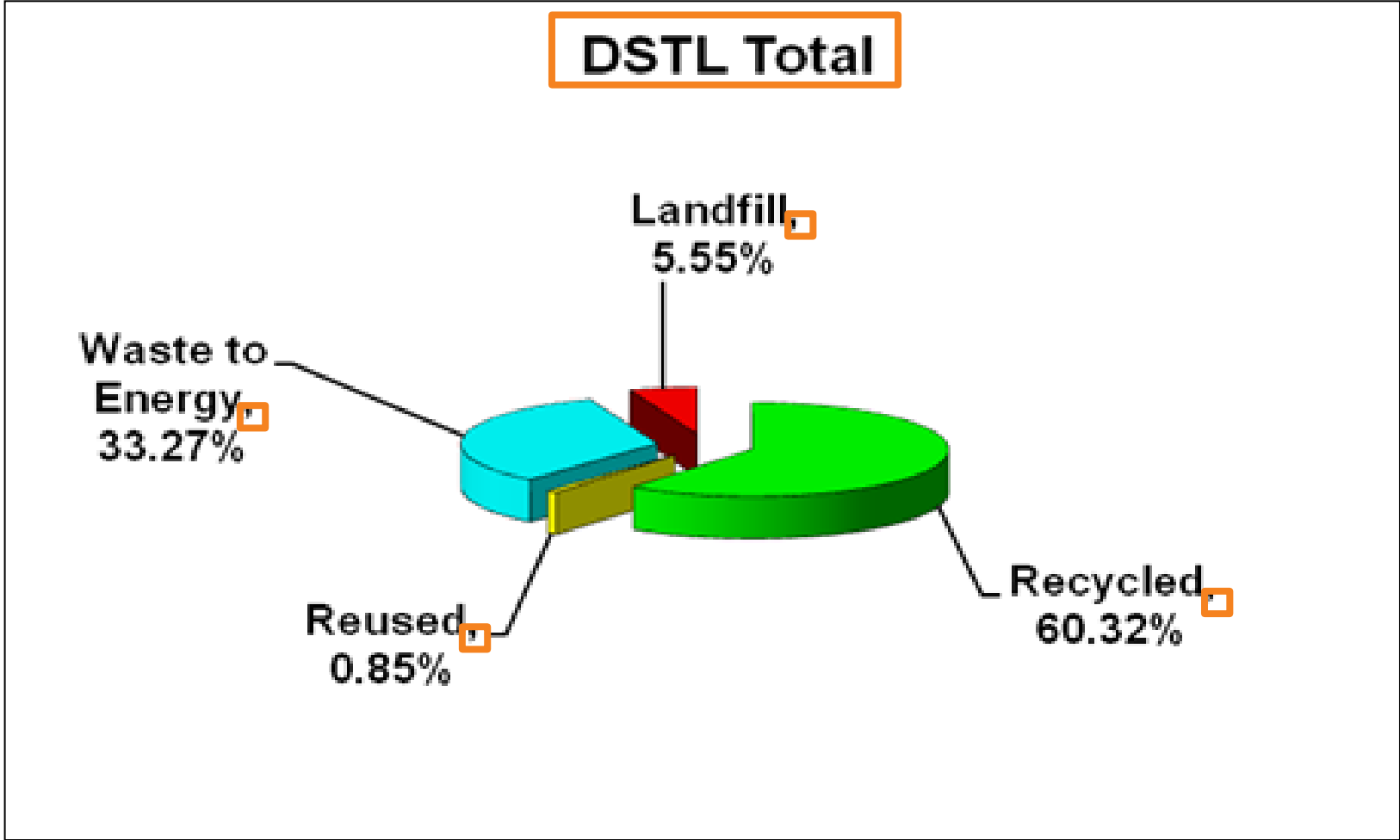
Key

- = 20 Aircraft
- = 20 Aircraft
- = 20 Aircraft

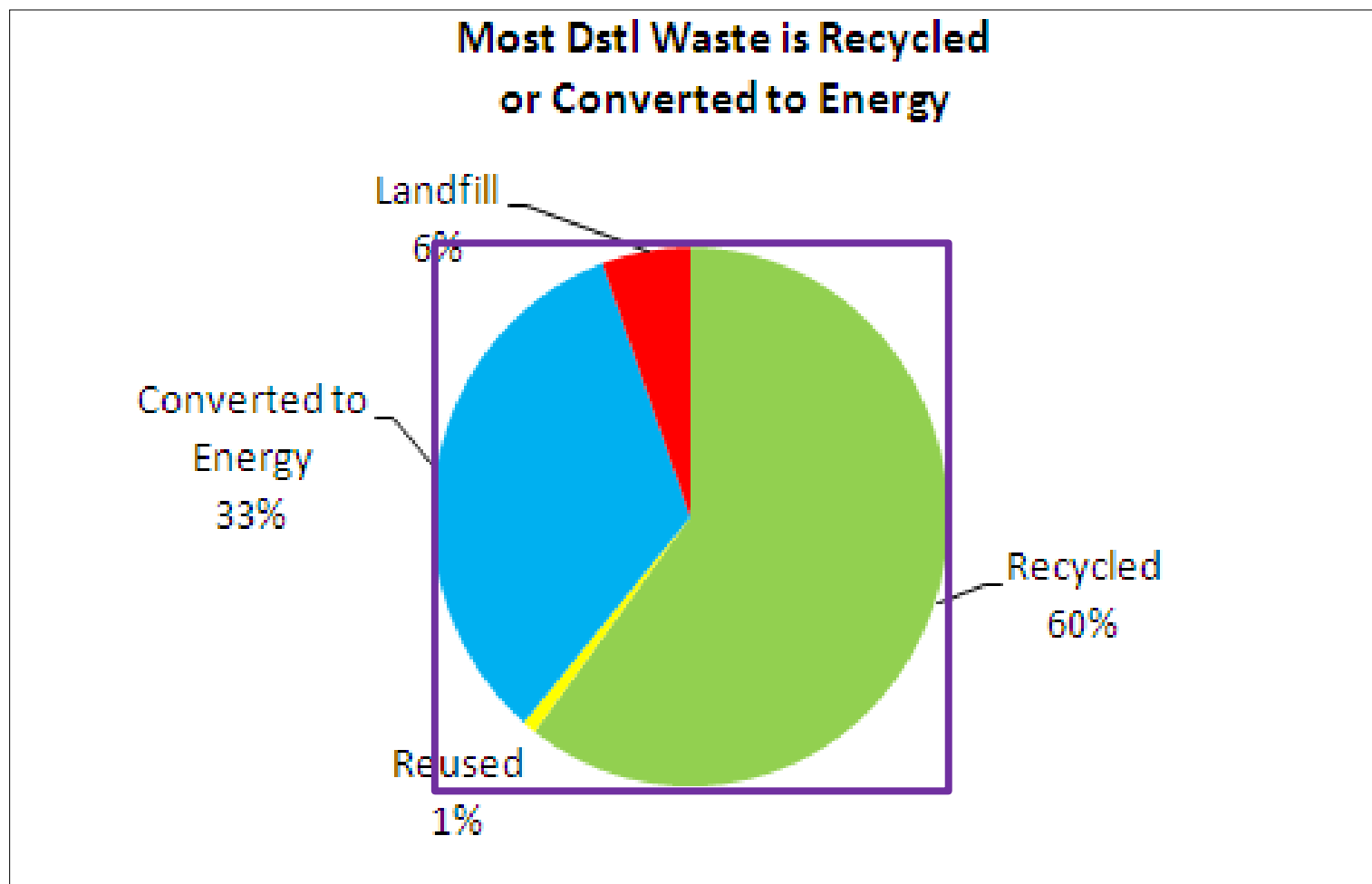
Visualisations must be accurate, interesting and convey a message.



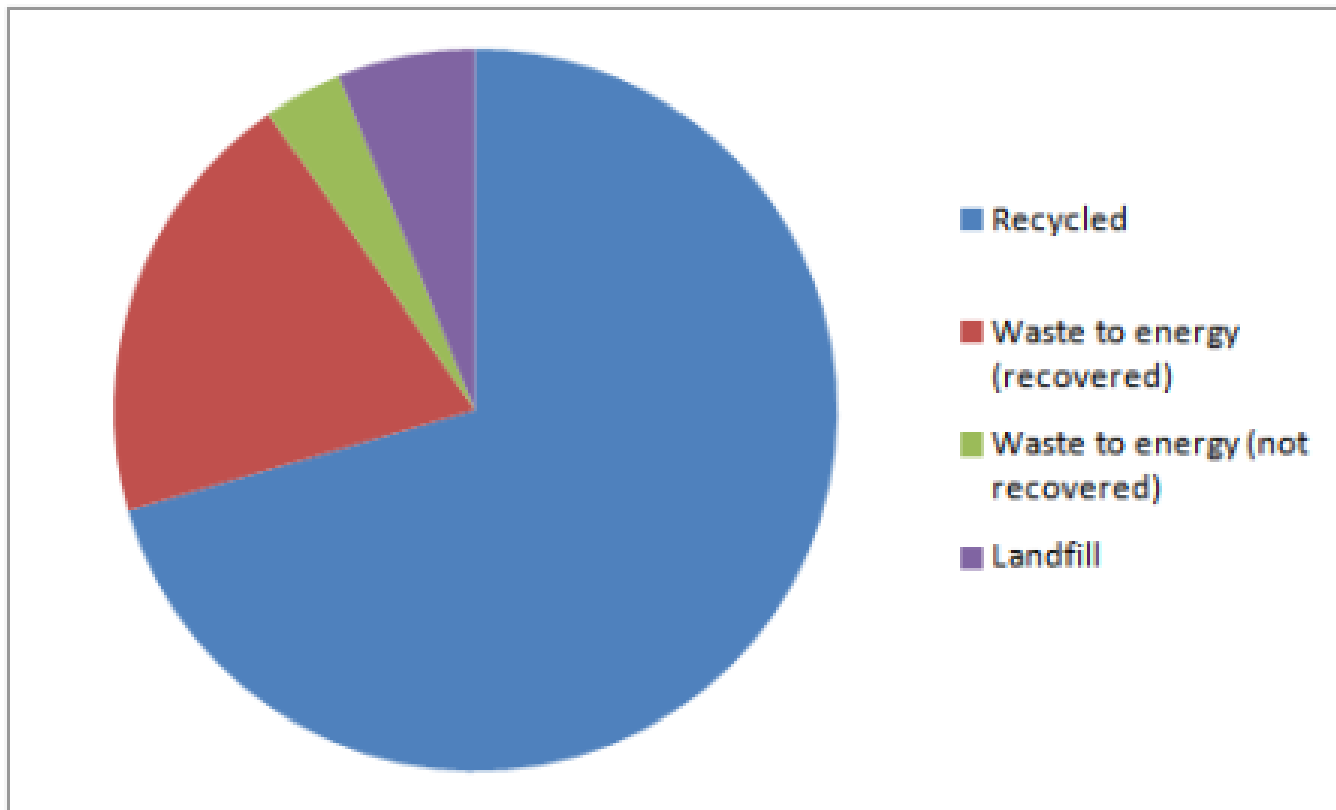
3-D charts are misleading



There are alternatives to 3-D



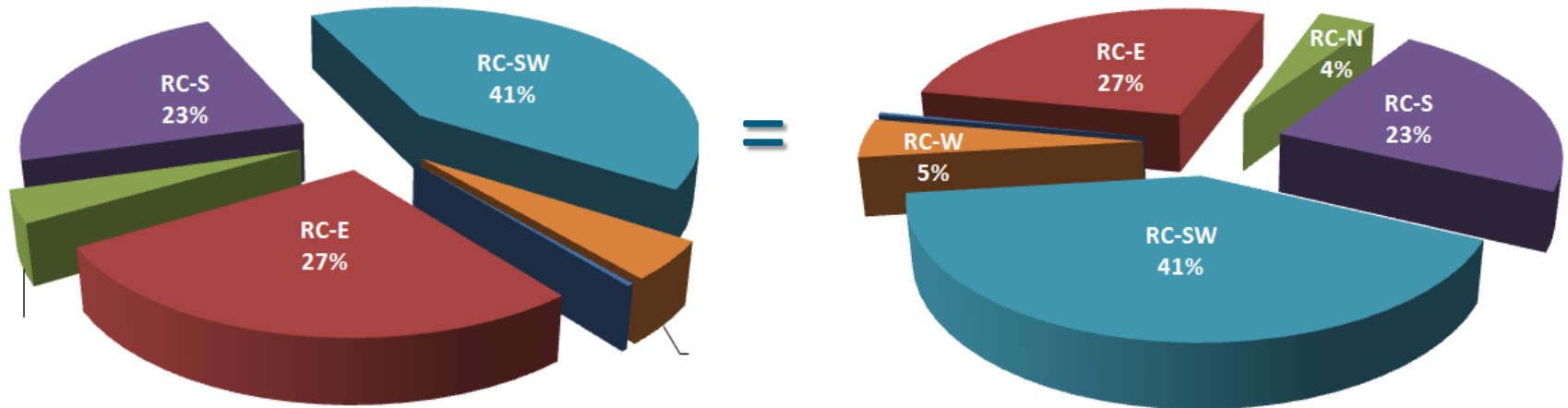
We will never reach perfection, but we will keep trying



 **Climate Week**
4-10 March 2013

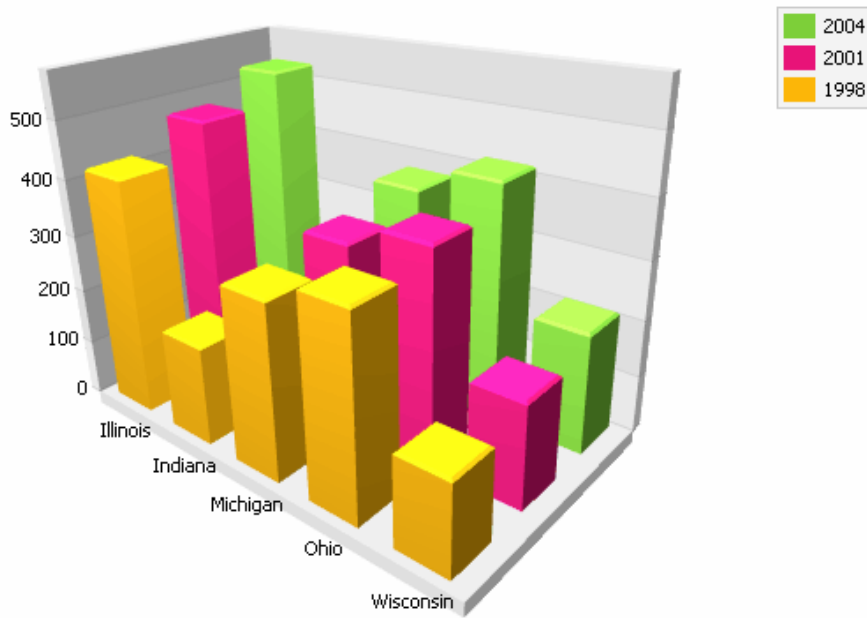
Waste management in Dstl – How our waste is managed

Using 3D can focus the audience unintentionally

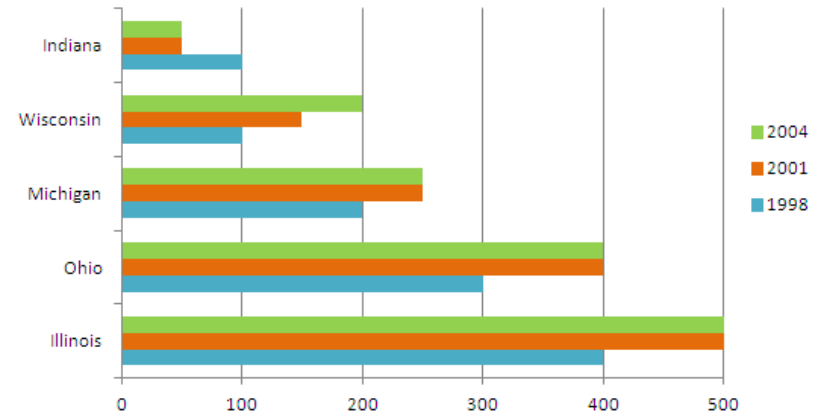


Here are 2 versions of the same data to illustrate alternatives to 3D

Great Lakes Gross State Product



Gross Product of the Great Lakes in 1998, 2001 and 2004



From www.bea.gov

There is a standard slide layout from the commercial world that is useful to understand

- Used by companies such as McKinsey and Boston Consulting Group.
- Supports the presenter:
 - focusing the message;
 - deciding what is relevant to present.
- Supports the audience:
 - clarity of message;
 - flow of results and information;
 - avoiding death by PowerPoint.

Action title: one sentence saying what you want to summarise with this slide

Body of the slide

- Content that supports the statement in the action title
 - Keep it short
 - Keep it relevant
- Graphic that uses data to support the action title
 - Remember your Gricean Maxims

If you just read all the action titles you hear the story the presenter is telling

Action title: one sentence saying what you want to summarise with this slide

- Content that supports the statement in the action title
 - Keep it short
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Action title: one sentence saying what you want to summarise with this slide

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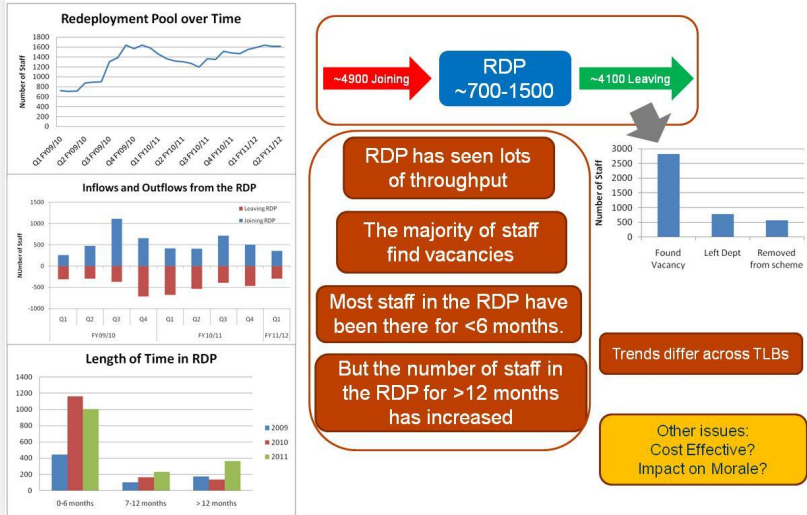
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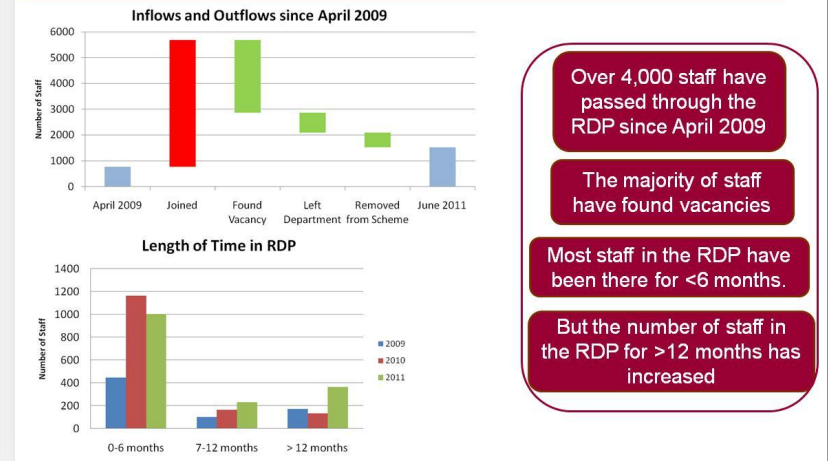
Ministry of Defence

Here are 2 versions of the same slide to illustrate the technique

The RDP has been effective in re-deploying staff

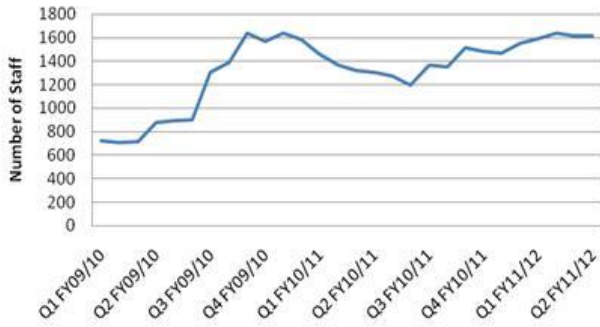


The Re-deployment Pool has been effective in re-deploying staff, but challenges remain

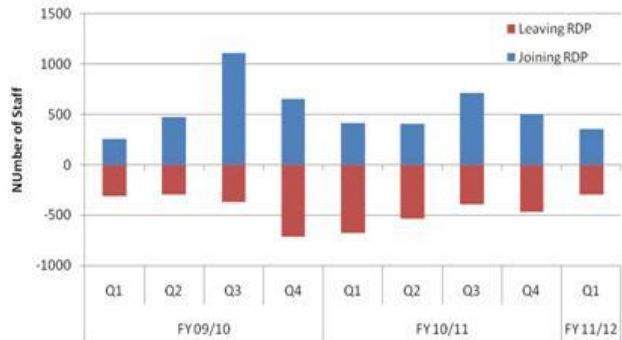


The RDP has been effective in re-deploying staff

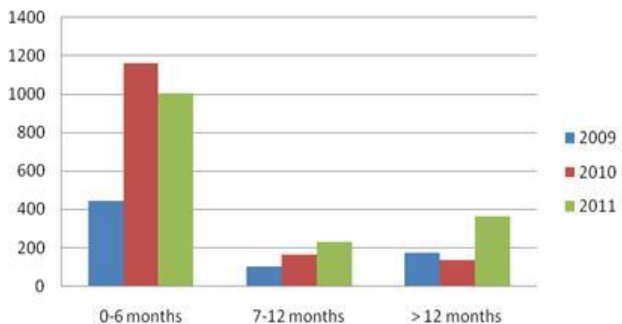
Redeployment Pool over Time



Inflows and Outflows from the RDP



Length of Time in RDP

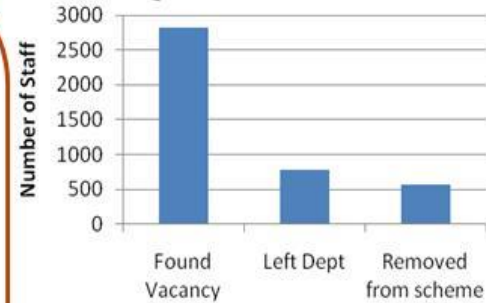


RDP has seen lots of throughput

The majority of staff find vacancies

Most staff in the RDP have been there for <6 months.

But the number of staff in the RDP for >12 months has increased



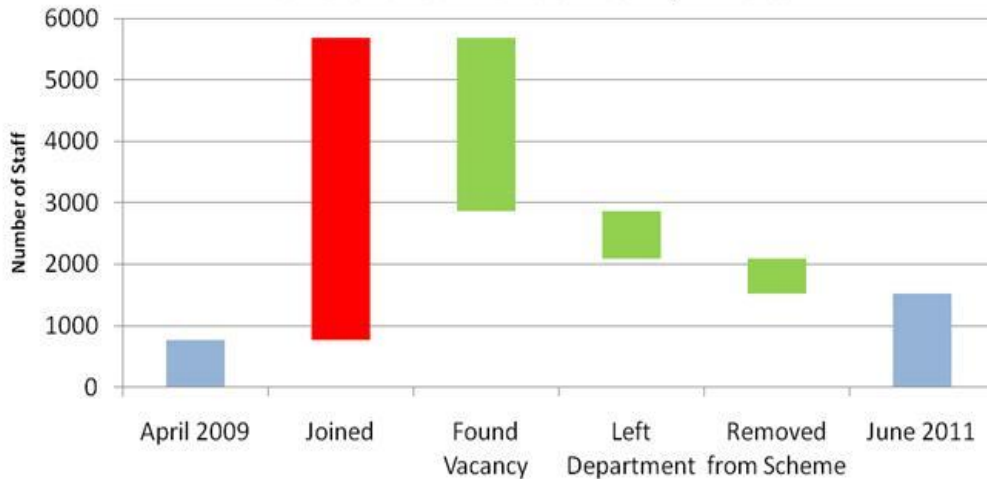
Trends differ across TLBs

Other issues:
Cost Effective?
Impact on Morale?

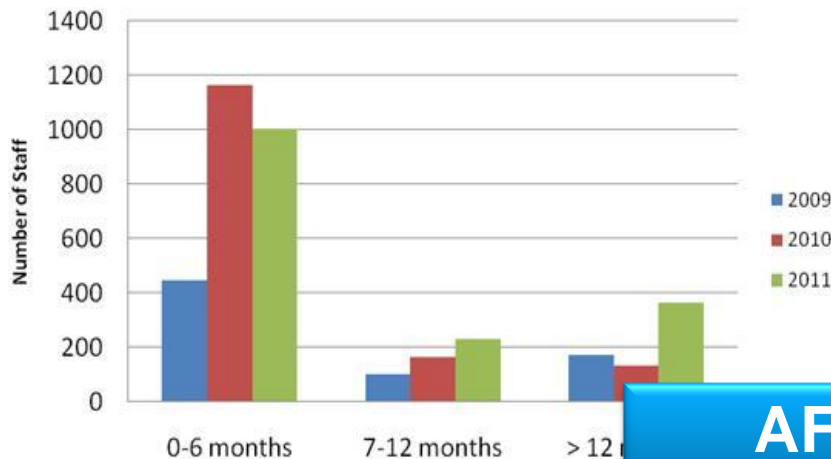
BEFORE

The Re-deployment Pool has been effective in re-deploying staff, but challenges remain

Inflows and Outflows since April 2009



Length of Time in RDP



AFTER

Over 4,000 staff have passed through the RDP since April 2009

The majority of staff have found vacancies

Most staff in the RDP have been there for <6 months.

But the number of staff in the RDP for >12 months has increased

Here is a real example of the story telling in action

We need to understand how decisions are made

We talk loosely

But do we really

Most of our decisions are made on hope that things will work out

Four types of decisions

Intuitive

Divergent

We have even seen convergent

But rational options

And divergent

EBDM is as much about getting people to THINK properly as it is about using evidence

We need to account for the fact that our customers (and we) are subject to biases in decision making

4.

Measure Performance
feedback evaluation

Diagnosis bias: over-optimistic assessment of a situation

Value attribution bias: based on irrelevant factors

Commitment bias: the more we are likely to invest in a decision, the more likely we are to stick to it

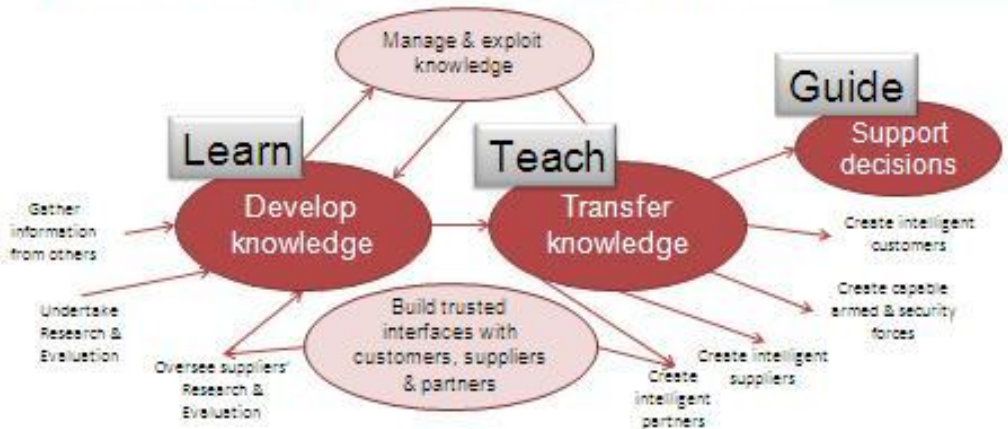
Loss aversion: the pain of losses is greater than the pleasure of gains

Groupthink: we often have a strong leader if we are in a group

Optimism bias: we often believe that we will be able to avoid negative outcomes

When do we

Think of your role as to Learn, to Teach, and (sometimes) to Guide your customer



- Plan time and effort to teach people what you have learned
 - Who needs to know which parts of it?
 - Will your customer learn best by reading your report or by experiencing?

defence

3.
Summarise viable options and present evidence on benefits, risks

defence

26 October 2011

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defence

dstl

Here are some pitfalls and common errors we have discovered

Print V Show

Will your presentation still work if it is printed?

Some people are colour blind

Check your slides and graphics

Some words are emotive

Have you used any words that going to touch a nerve?

Plan time in to communicate results

Graphs for analysis \neq graphs for stakeholders

Think basic first

Do you have time, and do you need a fancy visualisation?

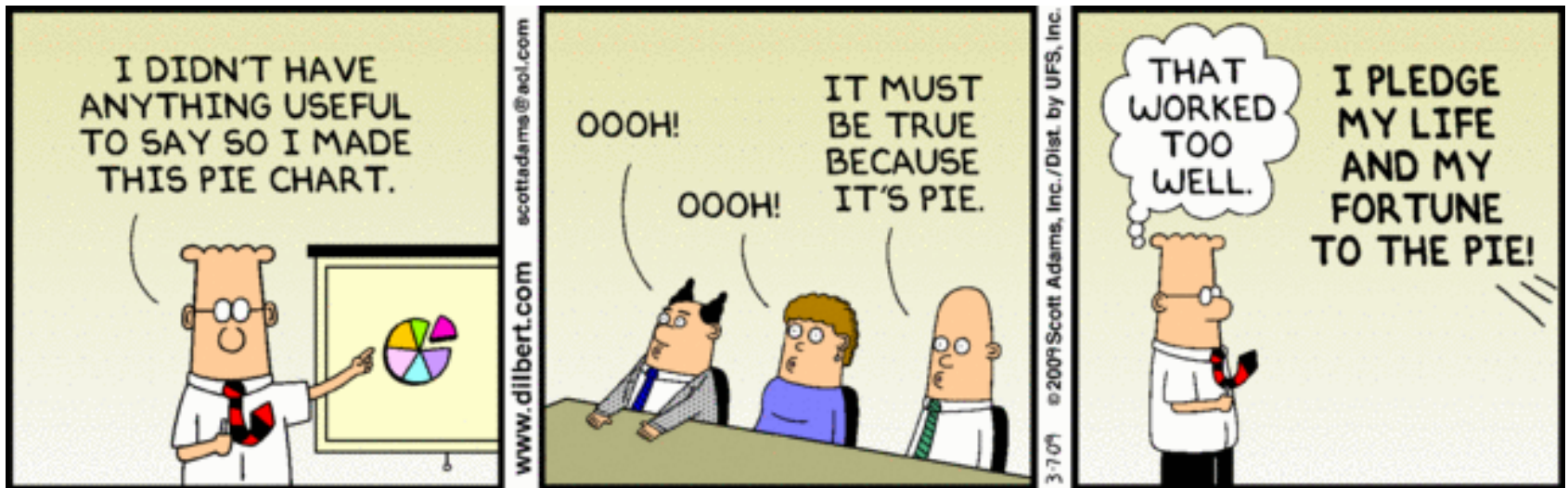
Familiarity can be your friend

Regularity saves on time and aids understanding

Information presented must be accurate and concise and clearly communicate a message

- Give yourself time to prepare and think about the visualisations you use
- Visualisations must clearly communicate a message
- Remember your Gricean Maxims
 - Quality, Quantity, Relevance, Manner
- Be aware of pitfalls and common errors
 - be self aware of the ones you regularly fall into
 - Support your colleagues in avoiding them

Questions or Comments?



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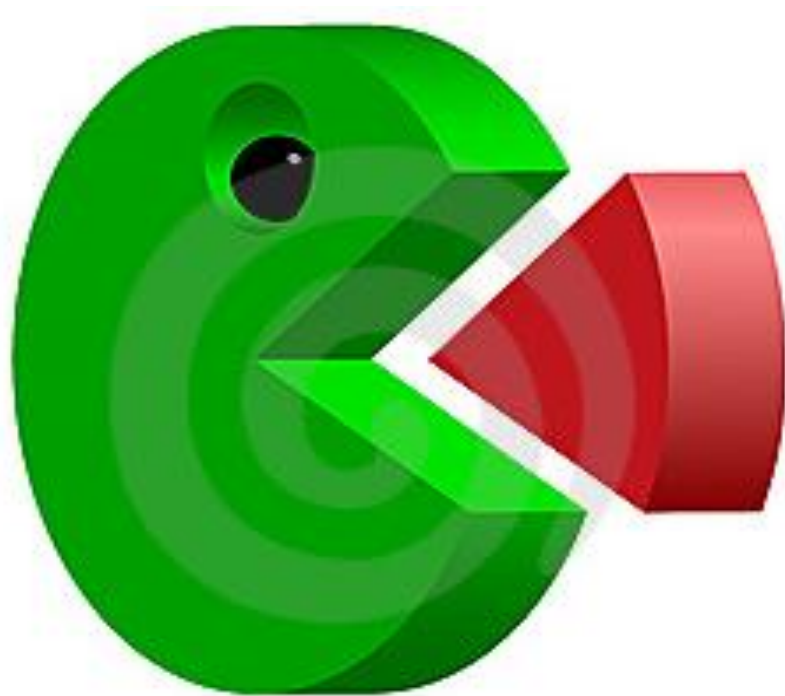
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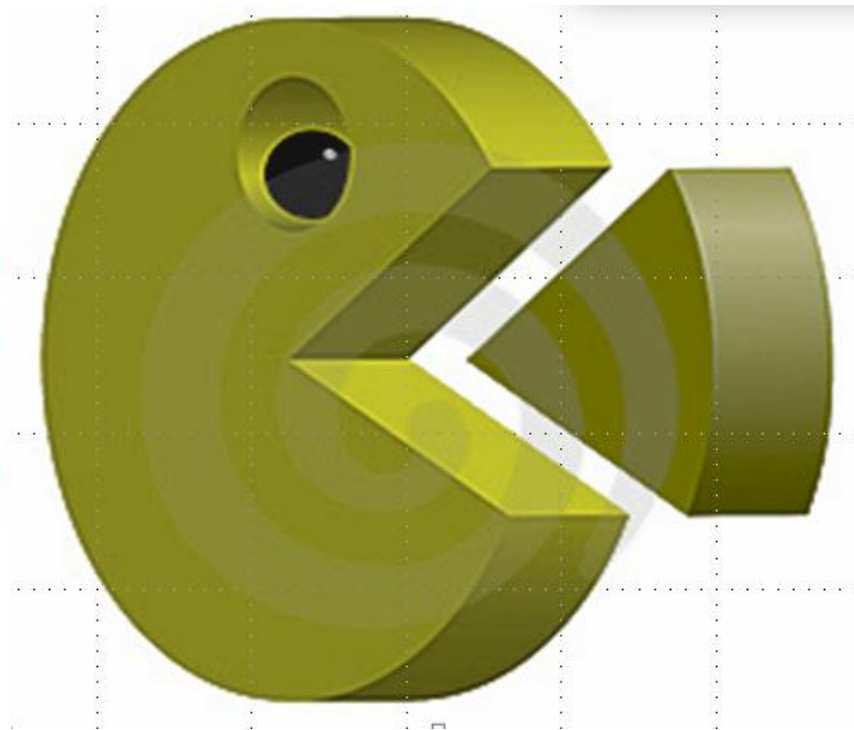


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What the majority will see



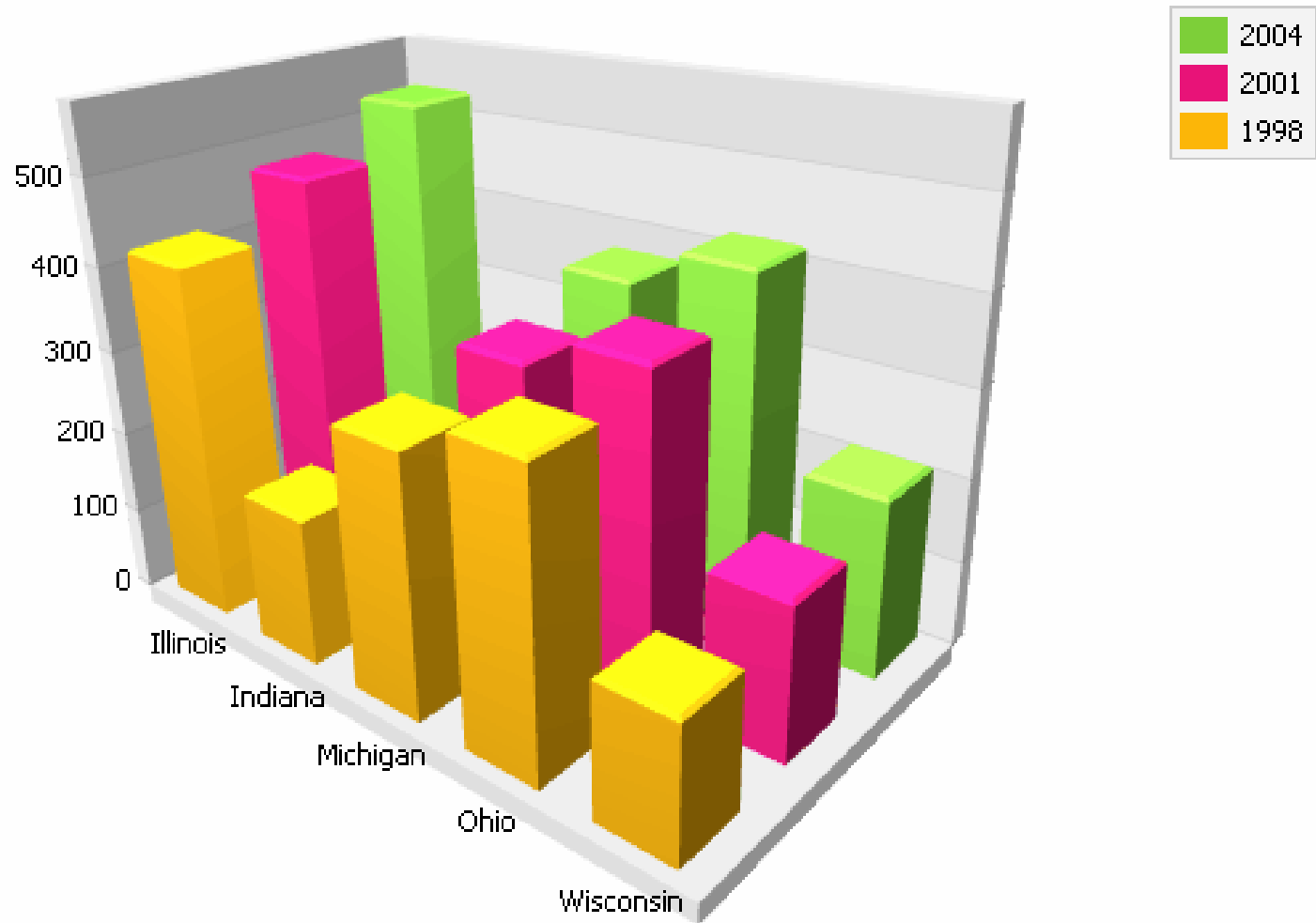
and with the most common form of colour blindness



Ring 8787 and ask for Color Oracle

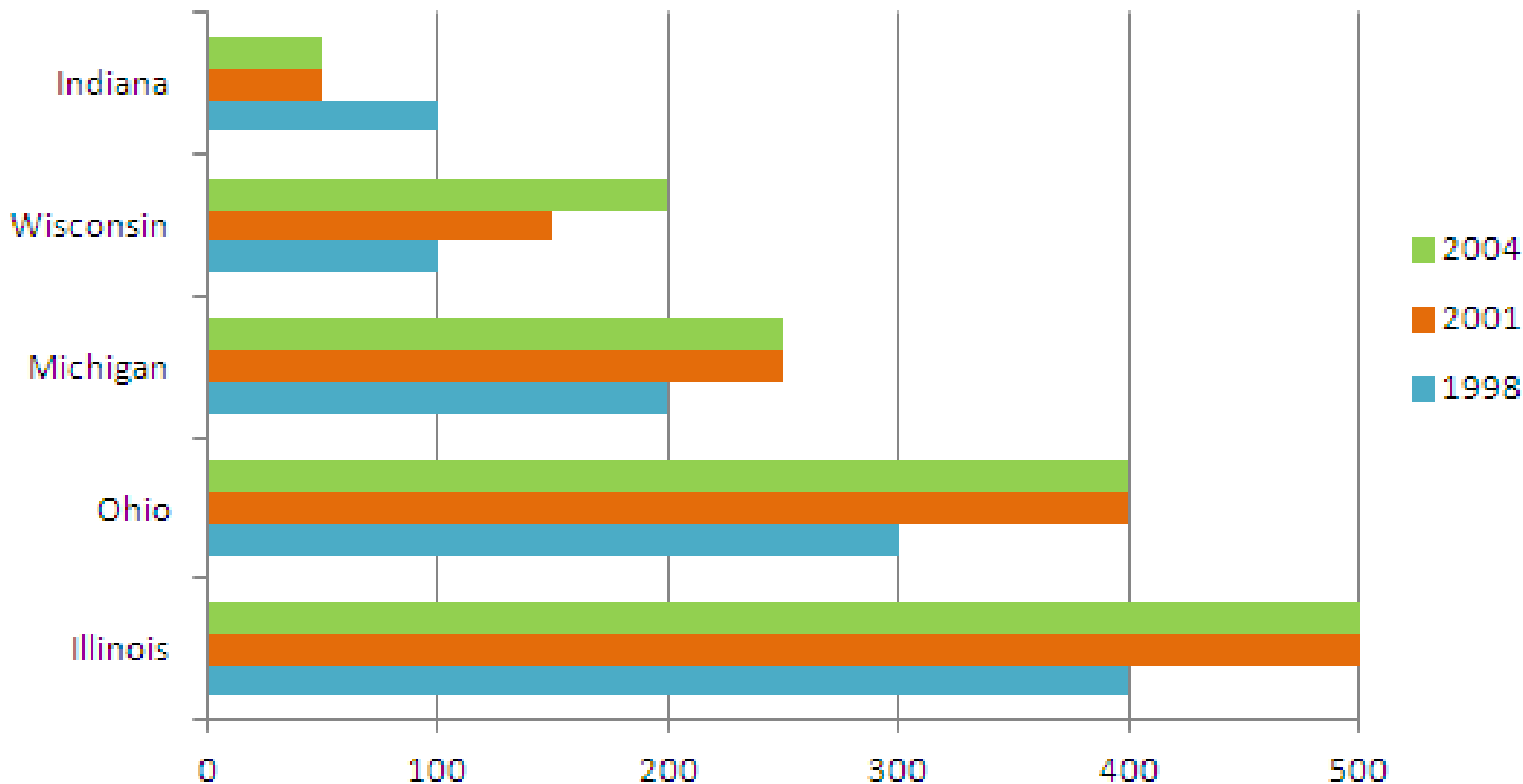


Great Lakes Gross State Product



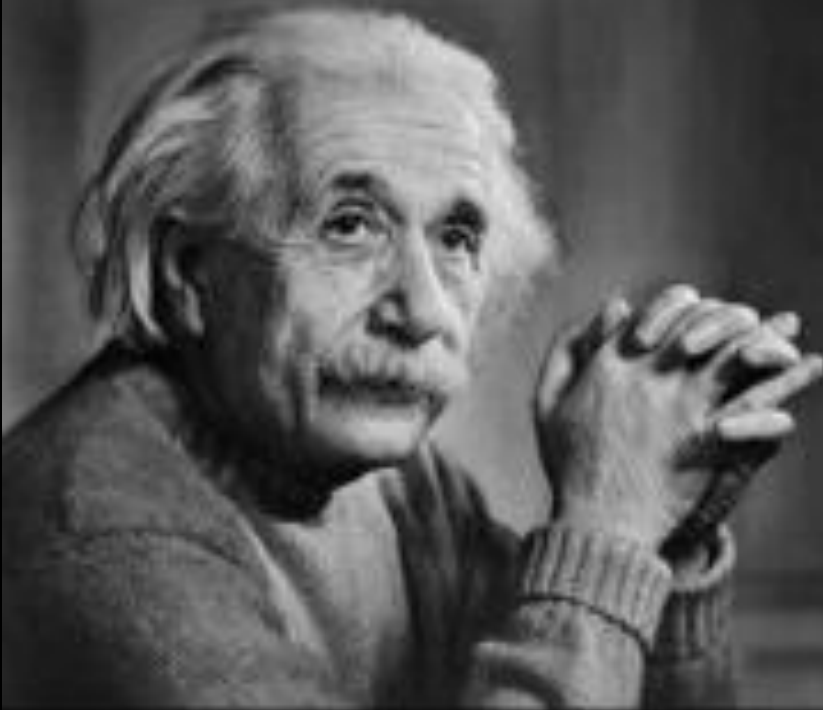
From www.bea.gov

Gross Product of the Great Lakes in 1998, 2001 and 2004



If you can't explain it **simply**, you don't understand it well enough.

– Albert Einstein



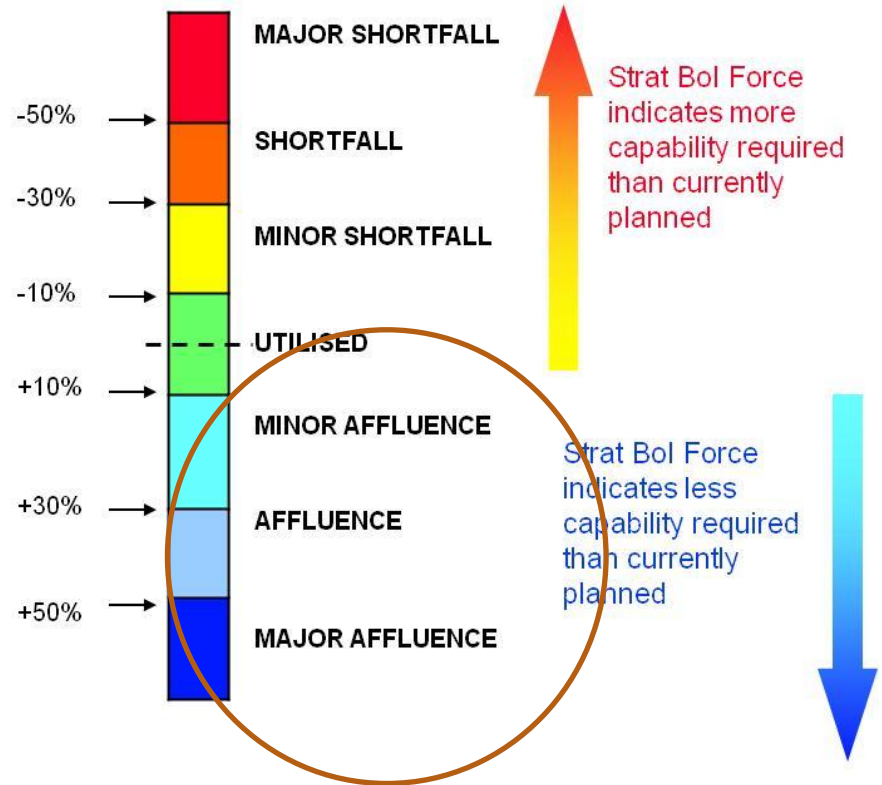
Funny-Pictures-Blog.com

It is useful to know what the “touch point” words are in your area

“BETTER”

“CUTS”

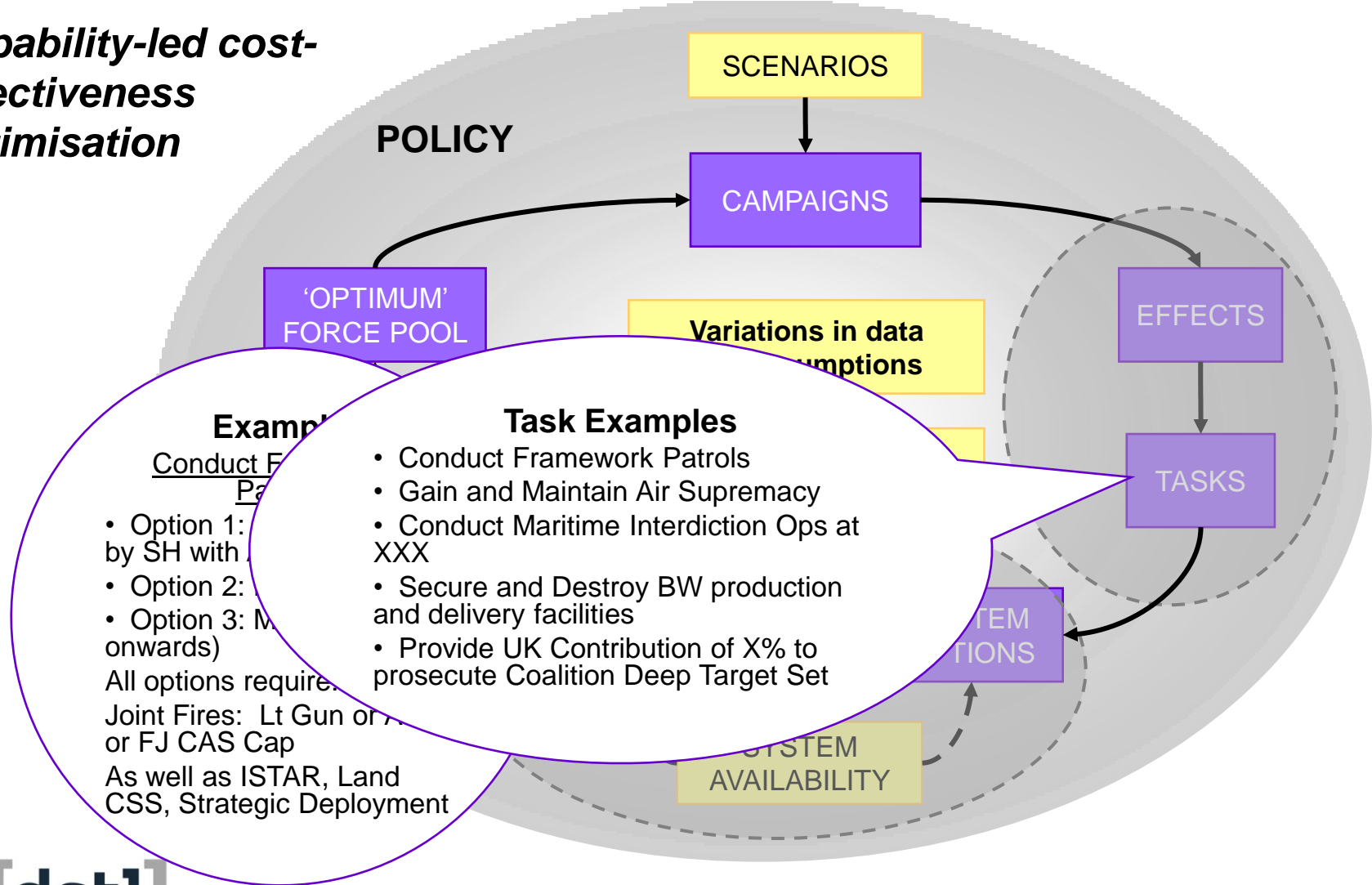
“AFFLUENCE”



30 March
2012

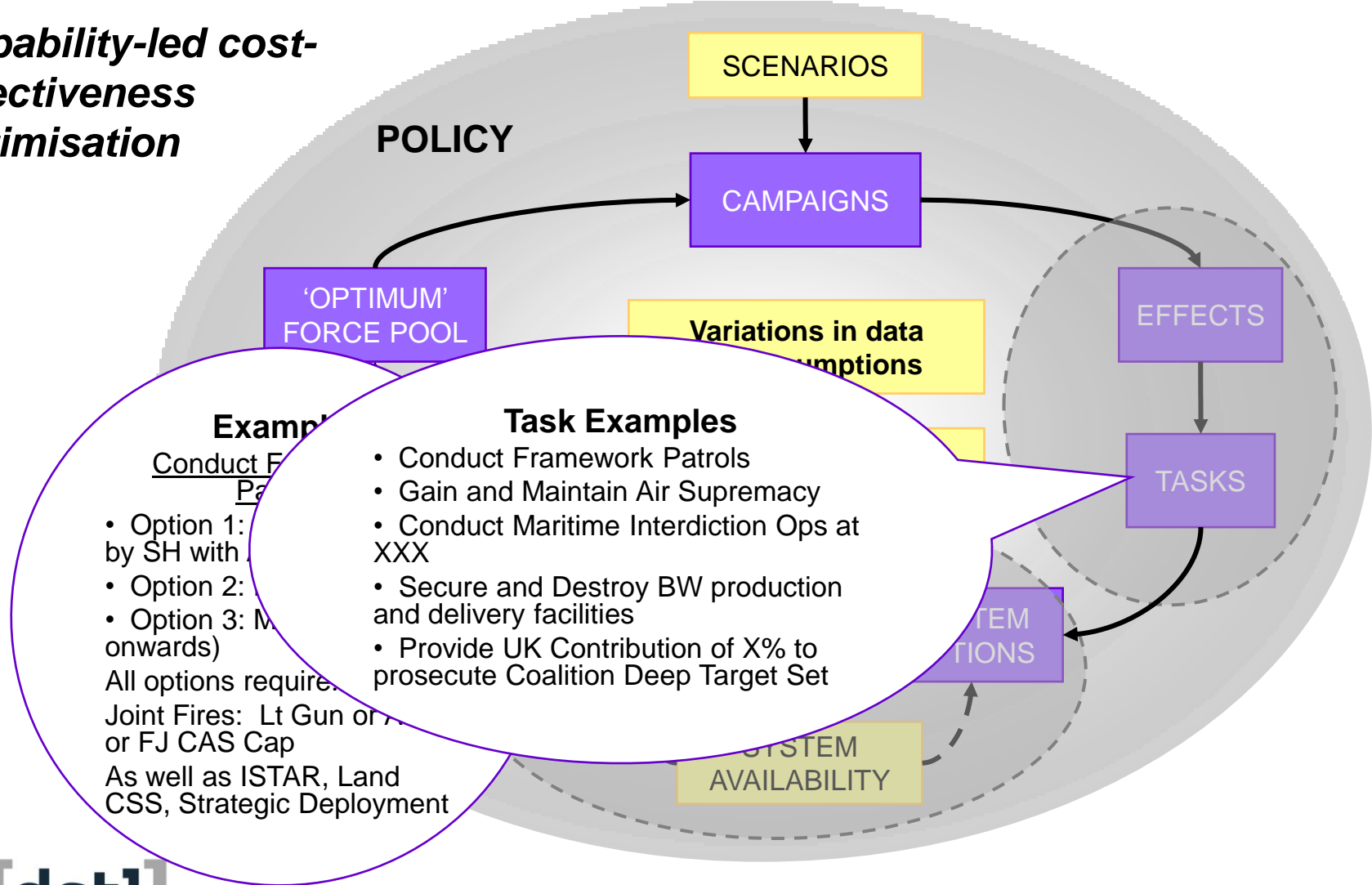
Strat Bol Analysis - Method

Capability-led cost-effectiveness optimisation



Strat Bol Analysis - Method

Capability-led cost-effectiveness optimisation



National Security Council

Direct

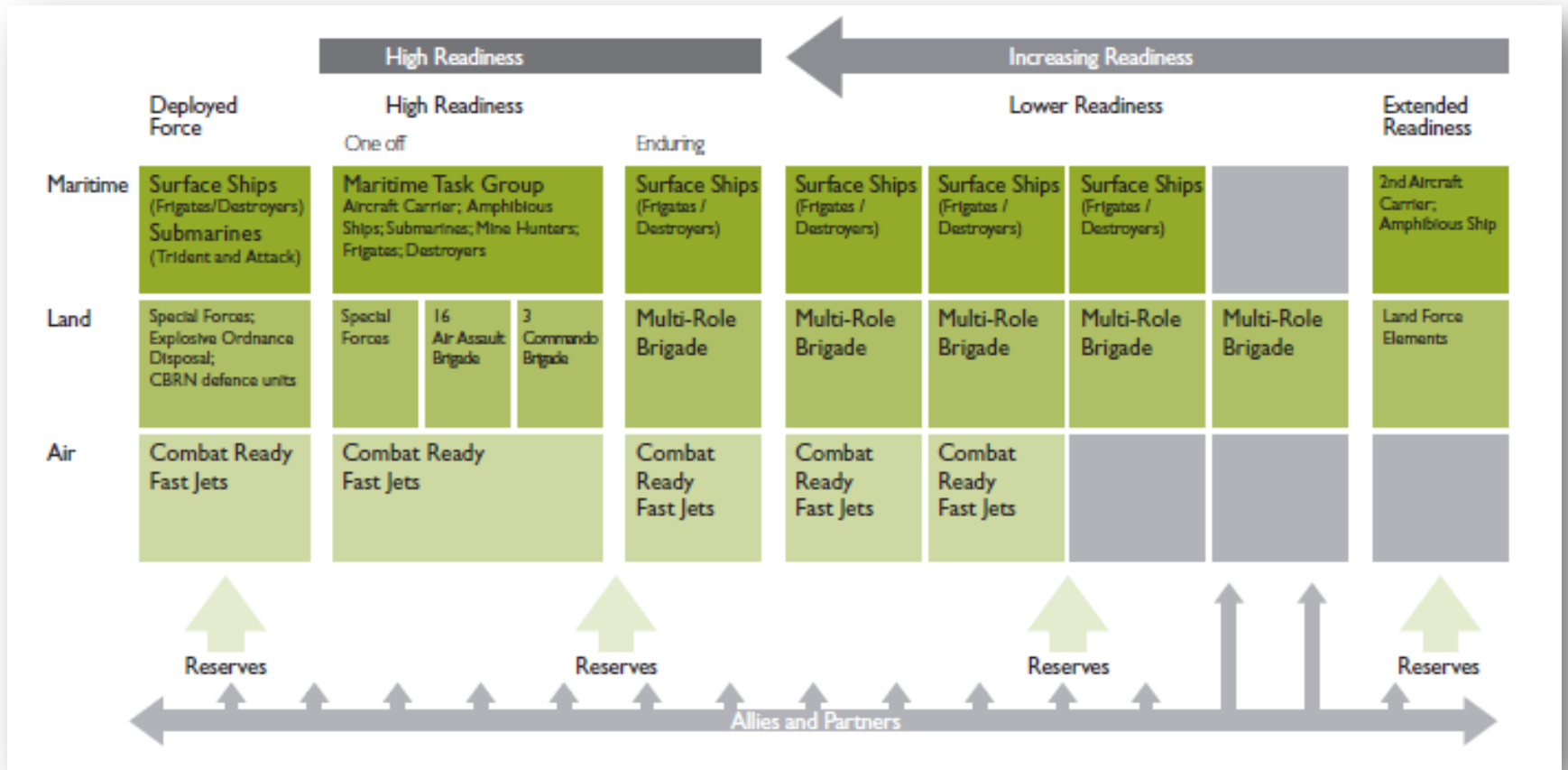
Enable

Acquire

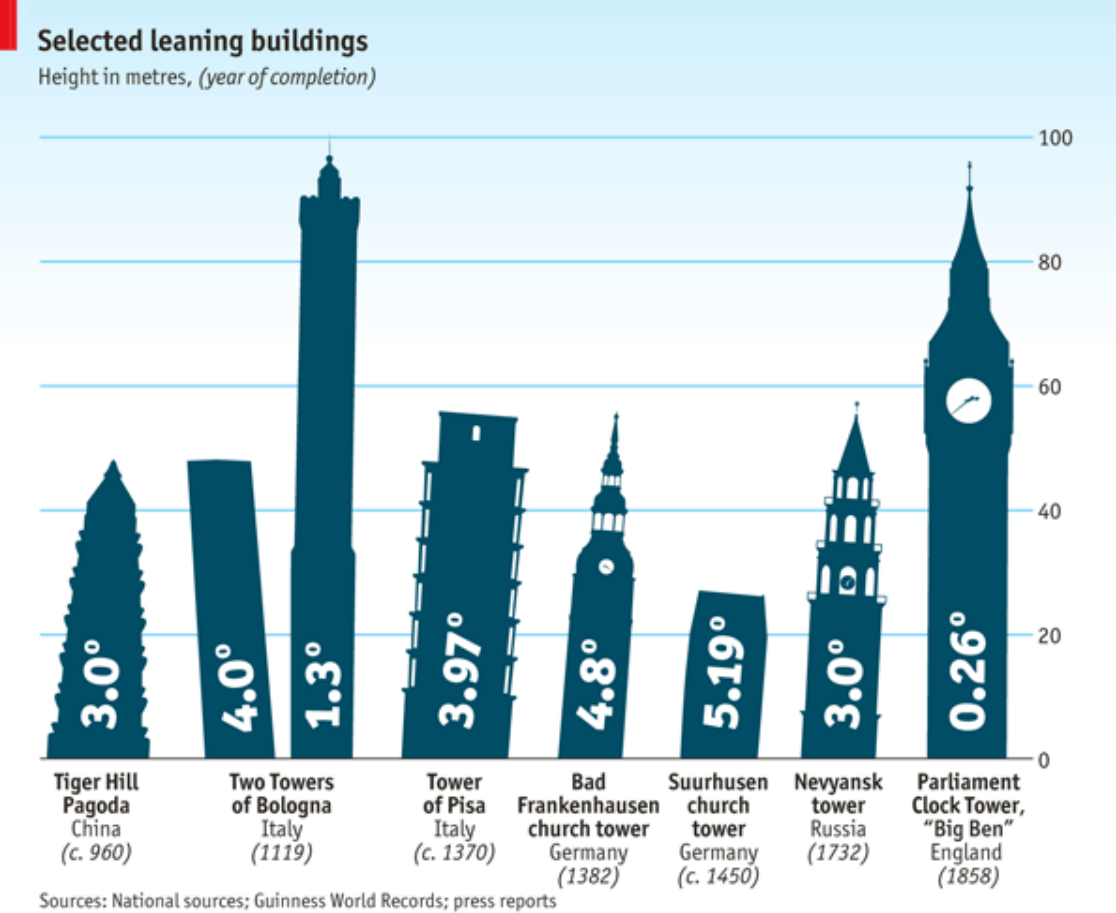
Generate and Develop

Operate

Account

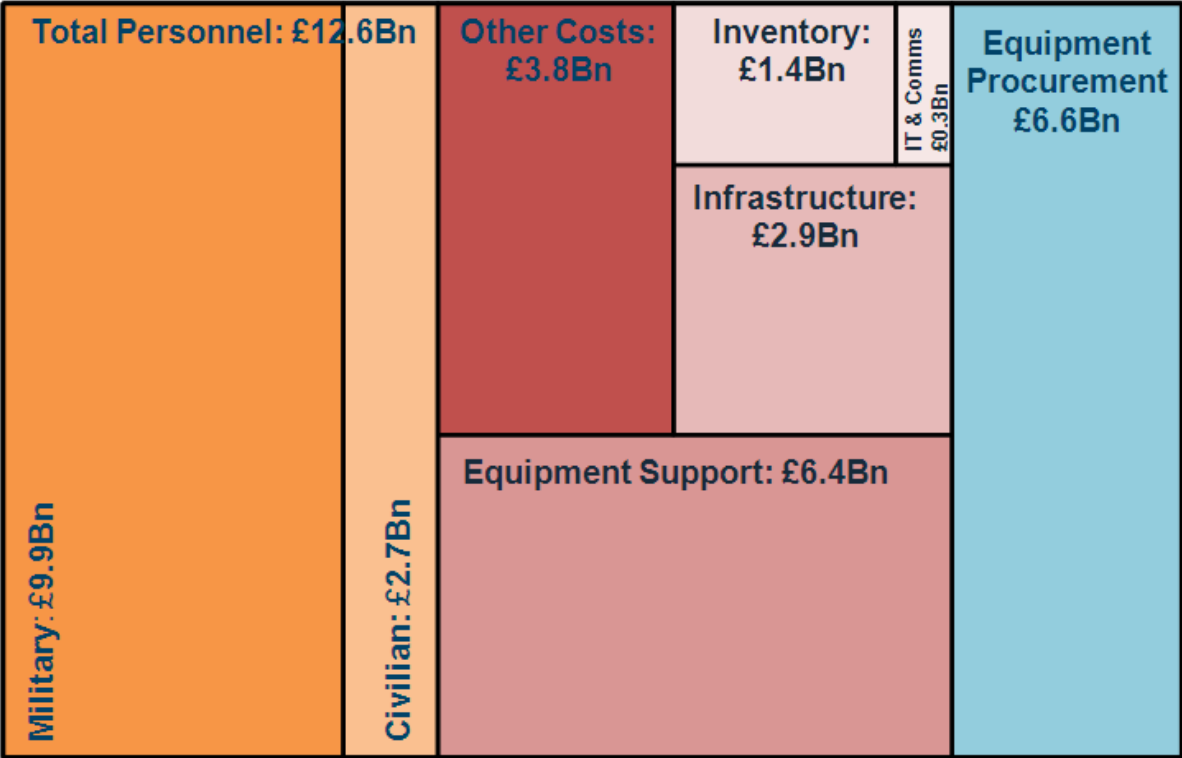


Visualisations must be accurate, interesting and convey a message

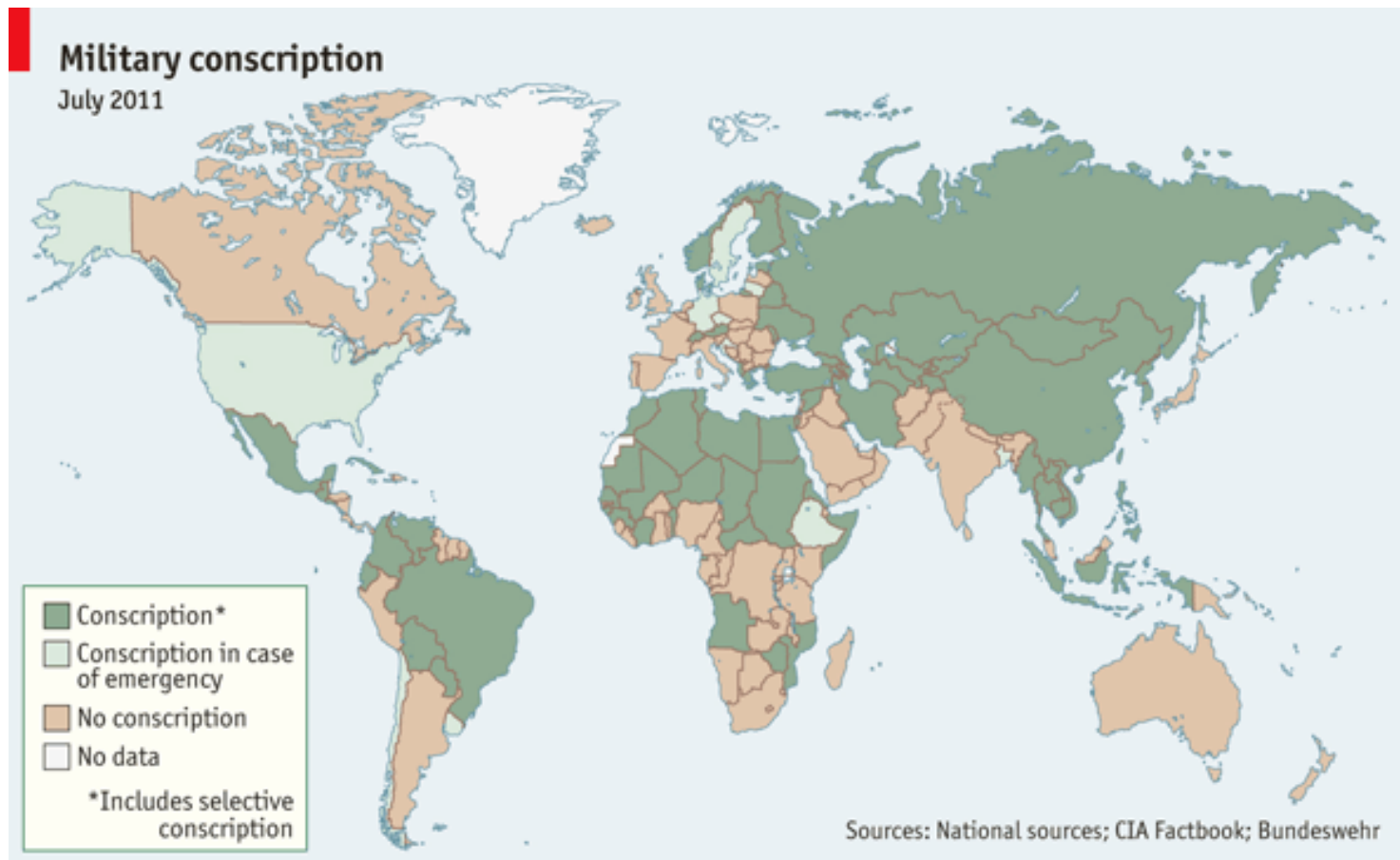


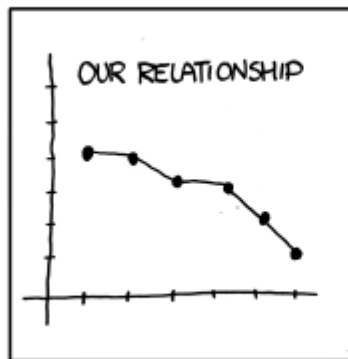
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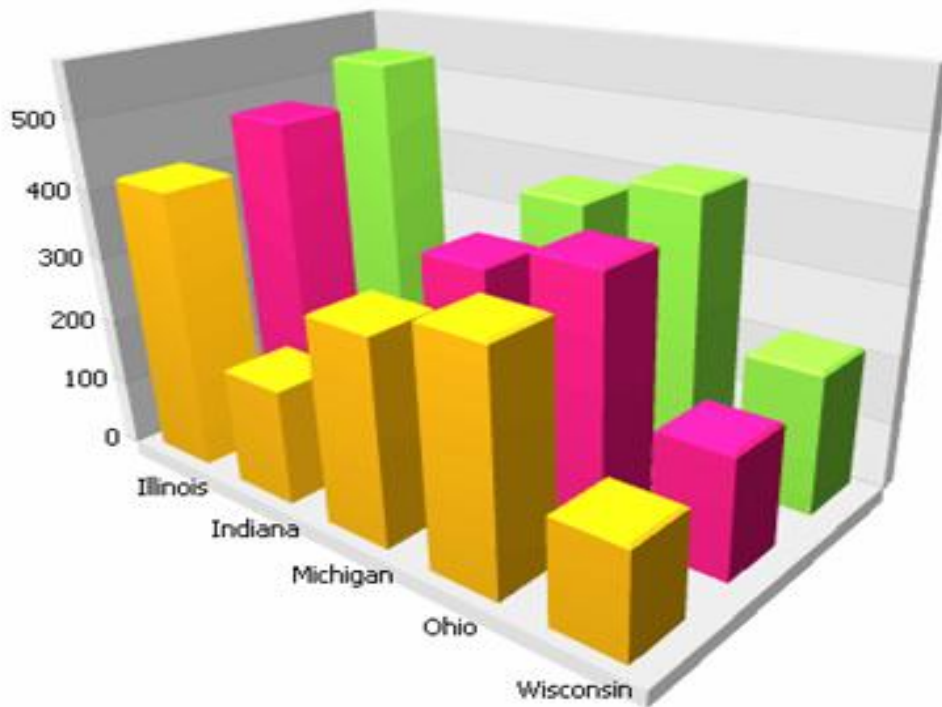
Planned Expenditure 2011/12



Visualisations must be accurate, interesting and convey a message







- All the information cannot be seen
- 3D makes it difficult to compare the data