TEAM GB

Loughborough University

The Official Preparation Camp
Headquarters for Team GB

2006 2007 2008 2009 2010
THE BEST STUDENT EXPERIENCE
Times Higher Education

Shared Services and Data analytics: a case of Sunlight uplands and bear traps?

Ian Herbert, Deputy Director, Centre for Global Sourcing and Services, School of Business and Economics – *Research project funded by CIMA*
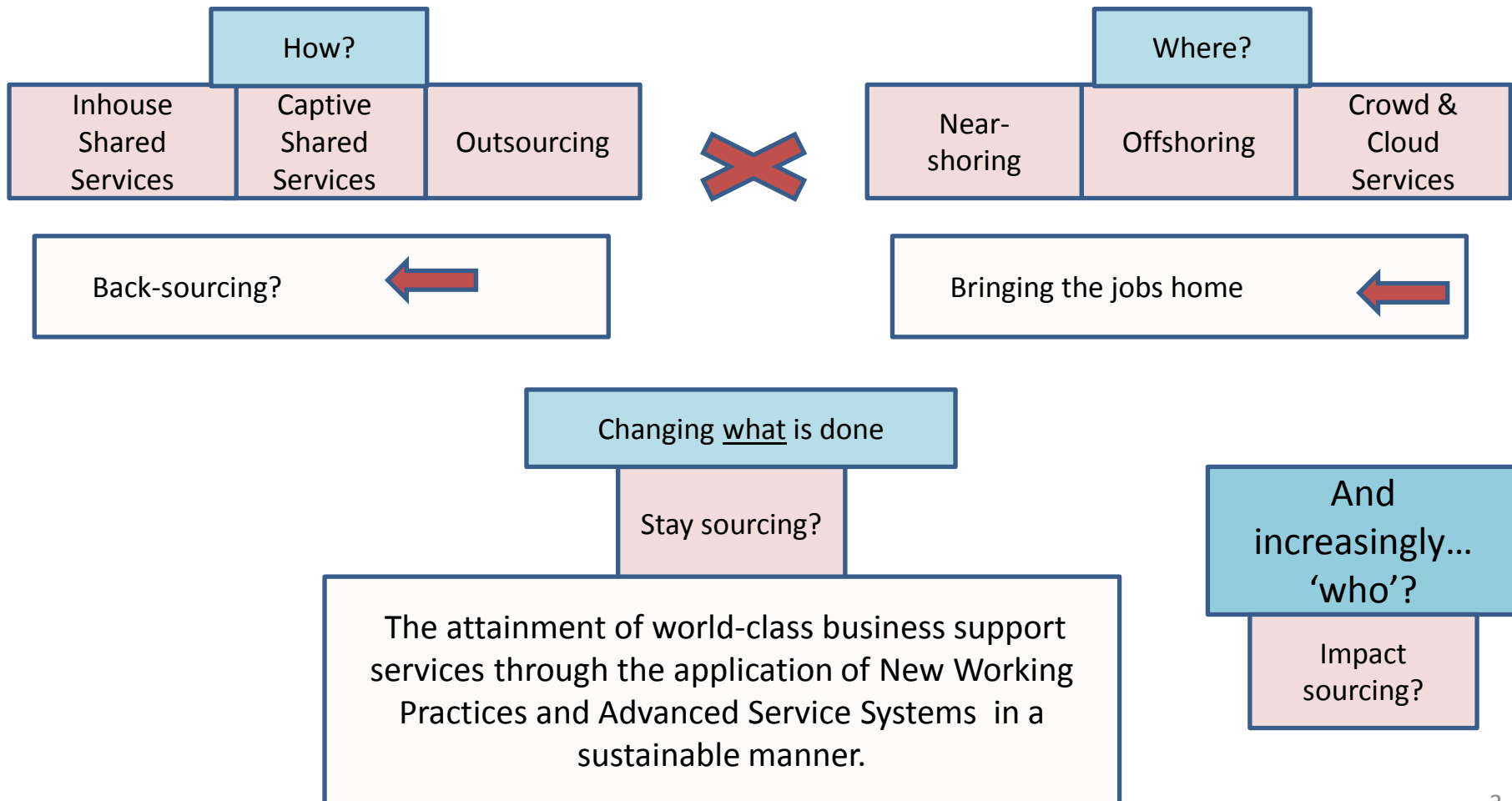
The Centre for Global Sourcing and Services

**Nothing's changed
but everything's different!**

What we do?

"The Centre is dedicated to carrying out both academic and 'focus on practice' high impact internationally renowned research on __how__ organisations source and manage business and IT services in a __global__ context"*.......Centre for Global Sourcing and Services Website*

How?		
Inhouse Shared Services	Captive Shared Services	Outsourcing

Where?		
Near-shoring	Offshoring	Crowd & Cloud Services

Back-sourcing?

Bringing the jobs home

Changing __what__ is done

Stay sourcing?

The attainment of world-class business support services through the application of New Working Practices and Advanced Service Systems in a sustainable manner.

And increasingly... 'who'?

Impact sourcing?

Some people will spend a <u>lot</u> of time getting data analytics right, and a <u>lot</u> of people will spend <u>some</u> time getting it wrong.

There are significant opportunities for generating insight through data analytics and big data. But…

- … research by Loughborough University's Centre for Global Sourcing and Services suggests that this potential may not be realised if organisations do not ask the right questions about the links between

- business partners,
- business process centres, and
- business units.
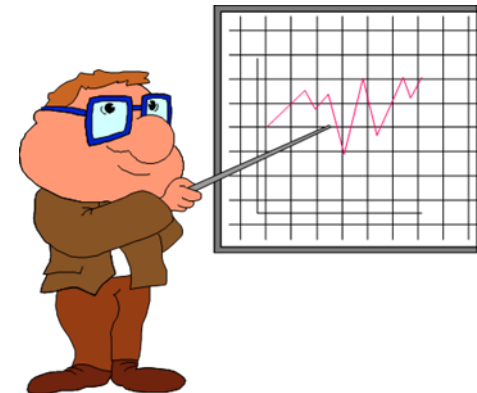
Data analytics & big data

- Whilst corporate-wide master data has improved significantly in recent years, big data requires new thinking.

- This means creating a different culture that values and leverages data to better support global end-to-end processes which deliver real outcomes.
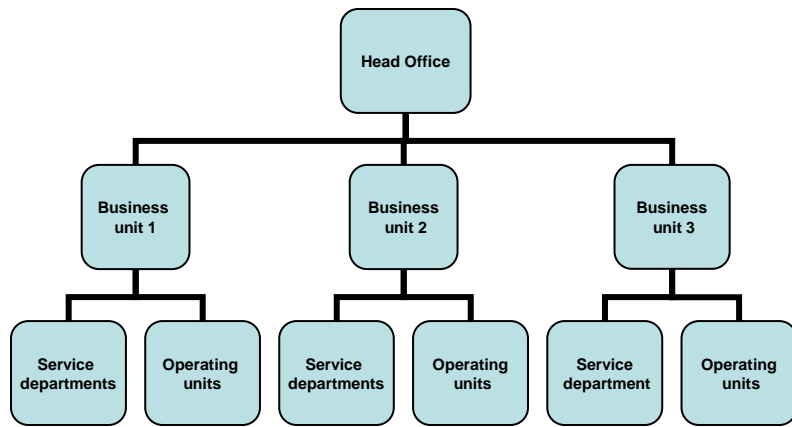
Input → **BLACK BOX** → **Output**

But first, a 'recap'.....
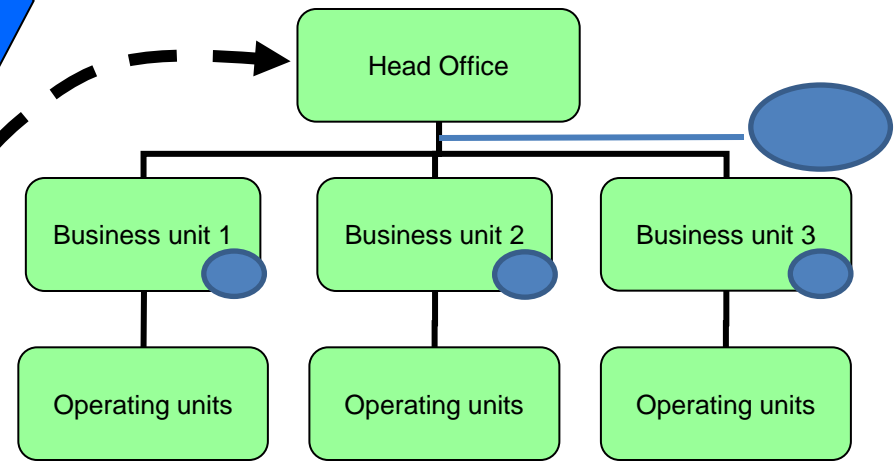
What is the essence of the SSC model?

A simple idea that needs no big agenda!
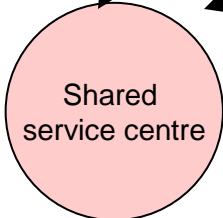
Moving to a Shared Service Centre Model

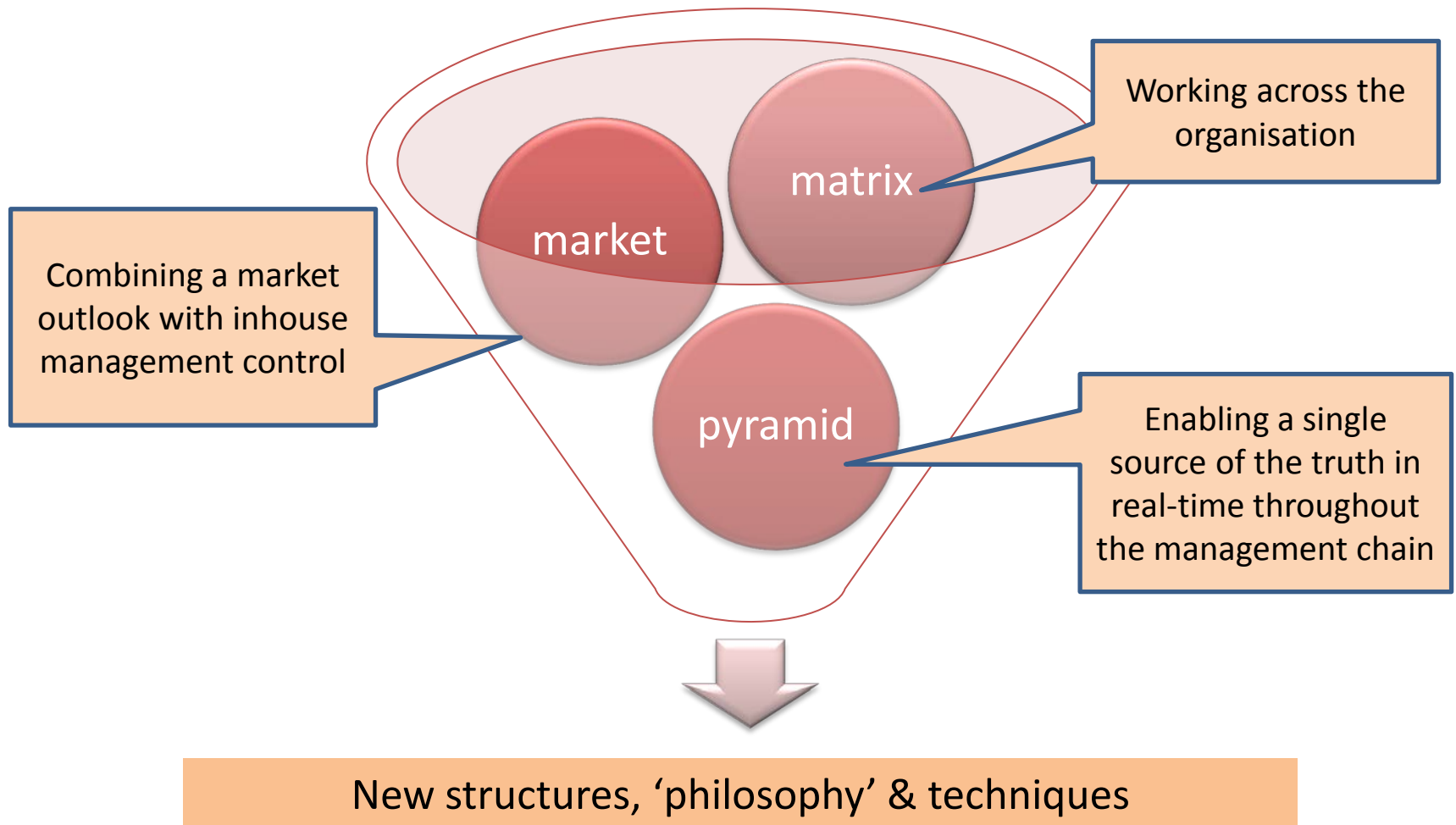**Conventional Divisional structure**
(support services embedded)

Semi-autonomous

Thinking like a business

Networking & benchmarking

Shared service centre structure

More than just a new organisation chart - The SSC model blends different approaches

market

matrix

pyramid

Working across the organisation

Combining a market outlook with inhouse management control

Enabling a single source of the truth in real-time throughout the management chain

New structures, 'philosophy' & techniques

Shared service (&BPO) - Success factors

- ✓ Simplification
- ✓ Division of labour/deskilling
- ✓ Standardisation
- ✓ A single version of the truth
- ✓ Objective/independent
- ✓ Scalable
- ✓ Efficient & continuous cost reduction
- ✓ Finding the cheapest place on earth
- ✓ Networking and benchmarking
- ✓ Invisible to the business
- ✓ Phased migration, building on the wins

But… are these strengths compatible with the 'brave new world' of data analytics?
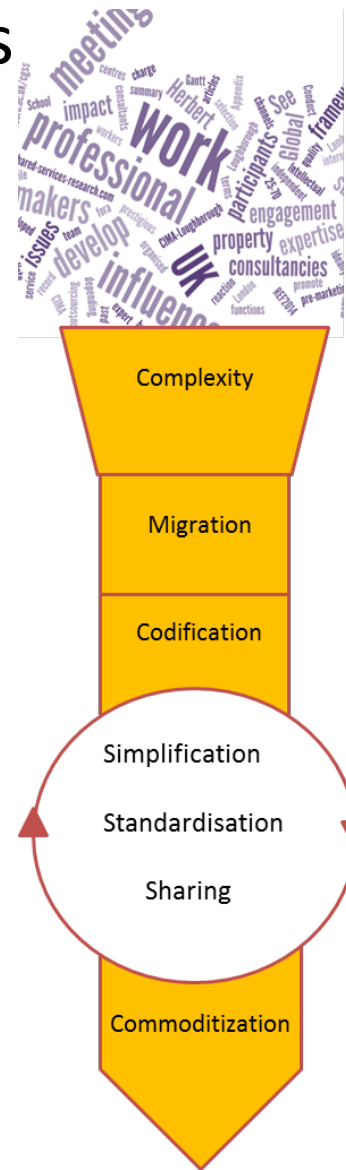
Organising for data analytics and big data

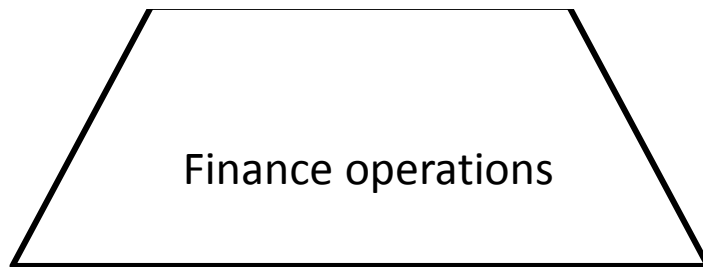- Big data is messy and its application needs to be tailored around individual business problems.

- Data analytics: needs new structures and thinking to go with the technical opportunities?

- But, what if the talent pipeline dries up as the professional 'training camps' are offshored ?

Segregated finance?

SSC

Retained finance

Globalisation

Business Partners

Finance operations

Segregated finance?

SSC

Retained finance

S1

MI and analytics?

Globalisation?

Business Partners

R1

?

S2

Finance operations

Buy in – MBAs or SSC training?

R2

Data analytics?

Big Data

Enterprise Data

Financial Data

Complexity of Analysis

Scale and Complexity of Data

Source: CIMA
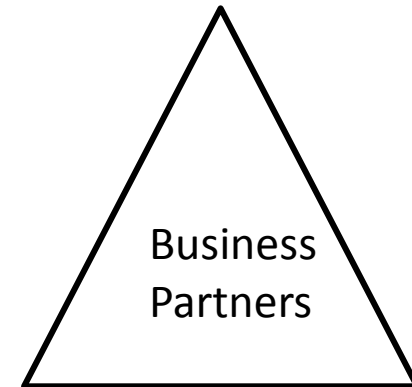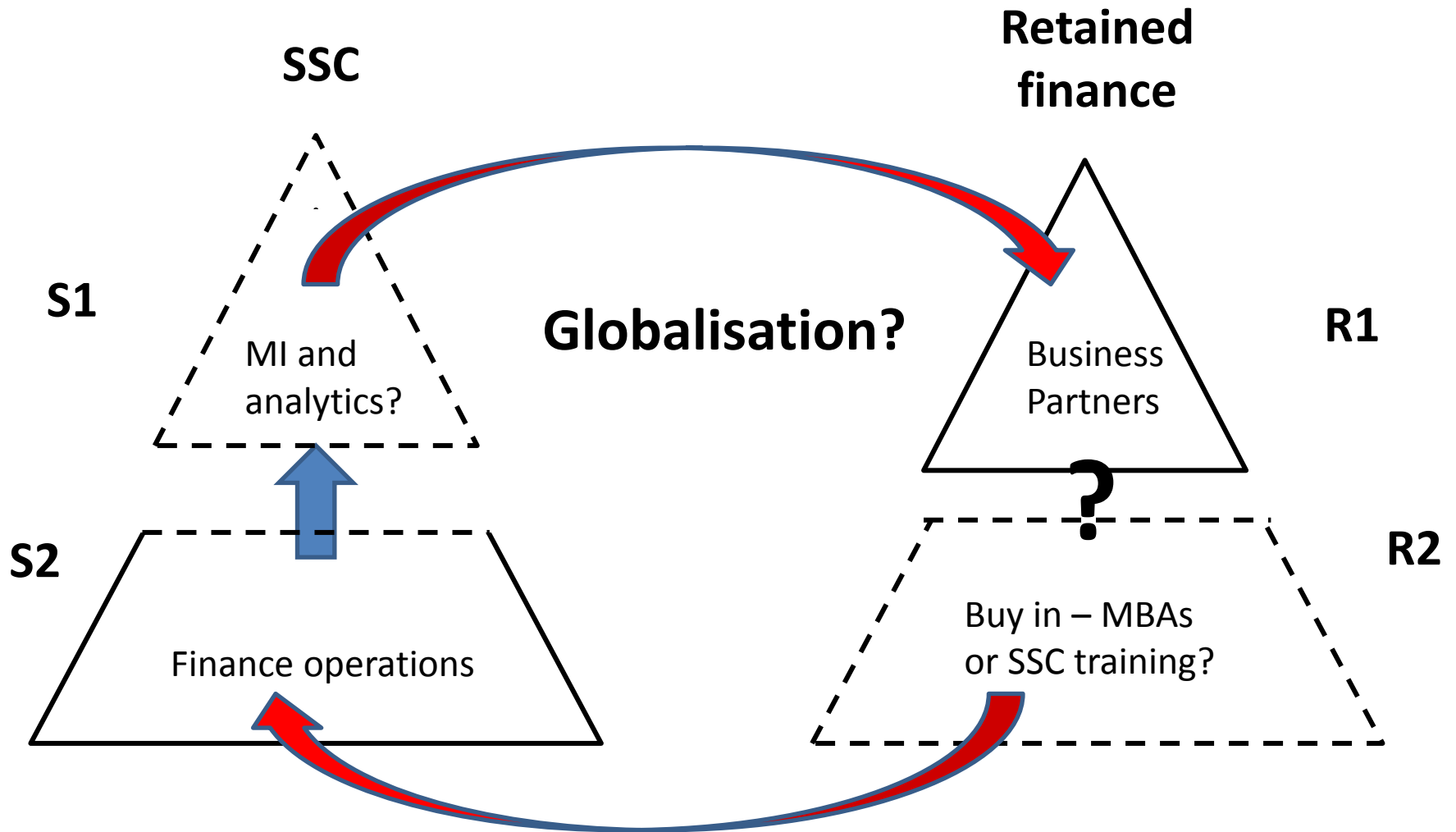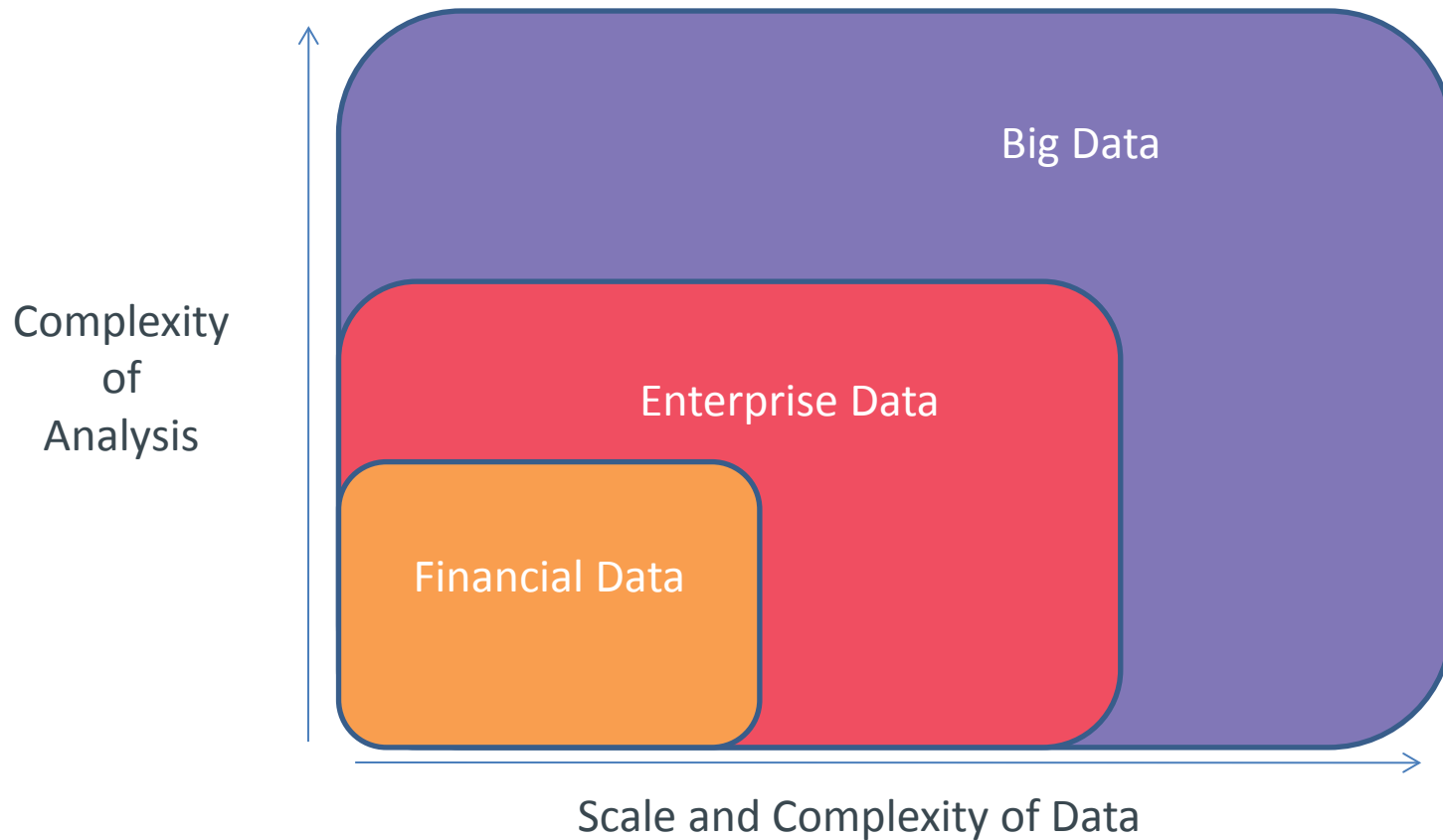
But before we go on..

What is essence of 'big data'

And,

is it just a fad?

"Big data" refers to datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze.

(*Big data: The next frontier for innovation*, competition, and productivity, McKinsey Global Institute, June 2011)

WHAT IS BIG DATA – THE 4 Vs?

The FOUR V's of Big Data

Volume — SCALE OF DATA

40 ZETTABYTES
[43 TRILLION GIGABYTES]
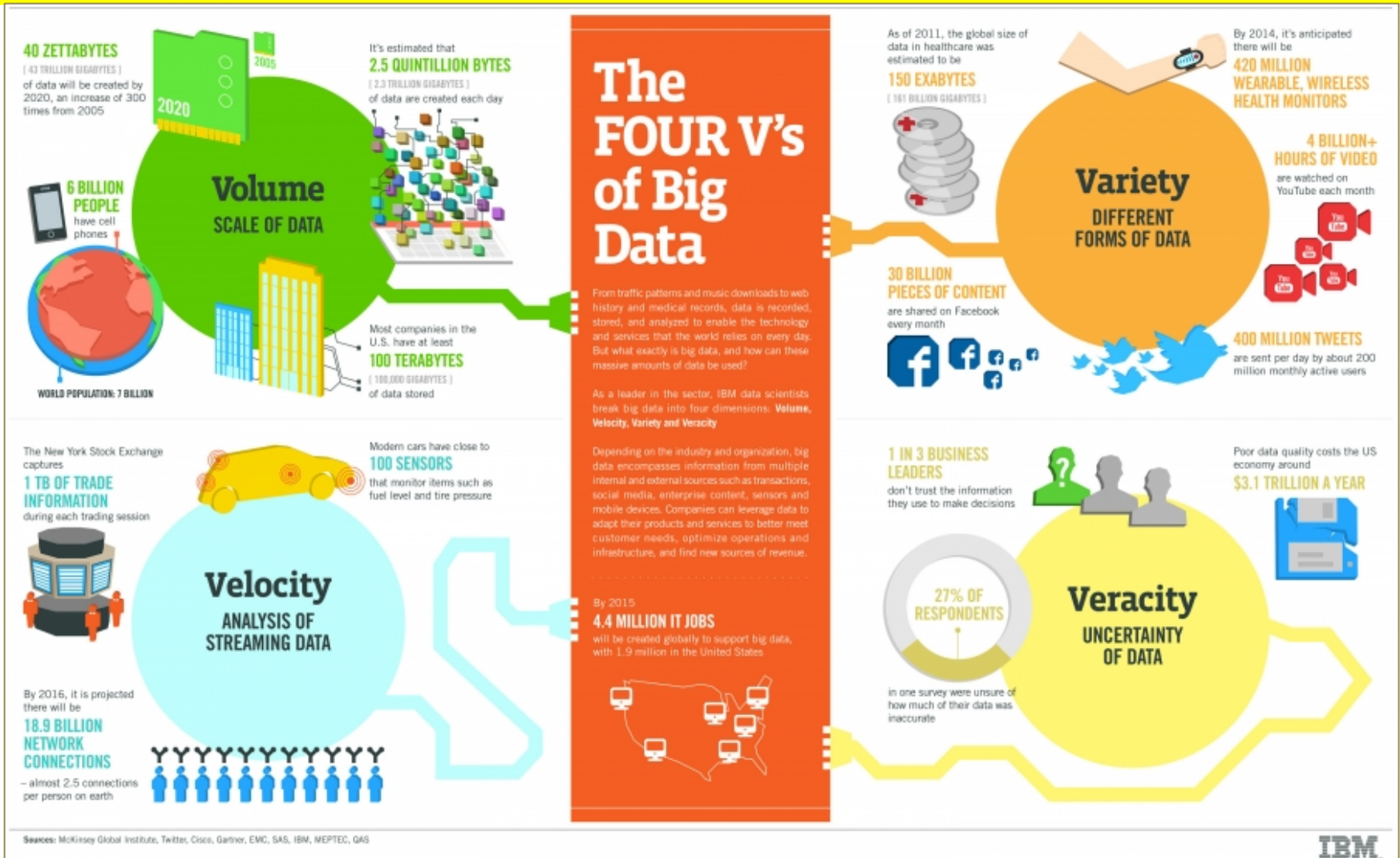of data will be created by 2020, an increase of 300 times from 2005

2005 / 2020

6 BILLION PEOPLE
have cell phones

WORLD POPULATION: 7 BILLION

It's estimated that
2.5 QUINTILLION BYTES
[2.3 TRILLION GIGABYTES]
of data are created each day

Most companies in the U.S. have at least
100 TERABYTES
[100,000 GIGABYTES]
of data stored

From traffic patterns and music downloads to web history and medical records, data is recorded, stored, and analyzed to enable the technology and services that the world relies on every day. But what exactly is big data, and how can these massive amounts of data be used?

As a leader in the sector, IBM data scientists break big data into four dimensions: **Volume, Velocity, Variety and Veracity**

Depending on the industry and organization, big data encompasses information from multiple internal and external sources such as transactions, social media, enterprise content, sensors and mobile devices. Companies can leverage data to adapt their products and services to better meet customer needs, optimize operations and infrastructure, and find new sources of revenue.

By 2015
4.4 MILLION IT JOBS
will be created globally to support big data, with 1.9 million in the United States

Variety — DIFFERENT FORMS OF DATA

As of 2011, the global size of data in healthcare was estimated to be
150 EXABYTES
[161 BILLION GIGABYTES]

30 BILLION PIECES OF CONTENT
are shared on Facebook every month

By 2014, it's anticipated there will be
420 MILLION WEARABLE, WIRELESS HEALTH MONITORS

4 BILLION+ HOURS OF VIDEO
are watched on YouTube each month

400 MILLION TWEETS
are sent per day by about 200 million monthly active users

Velocity — ANALYSIS OF STREAMING DATA

The New York Stock Exchange captures
1 TB OF TRADE INFORMATION
during each trading session

Modern cars have close to
100 SENSORS
that monitor items such as fuel level and tire pressure

By 2016, it is projected there will be
18.9 BILLION NETWORK CONNECTIONS
– almost 2.5 connections per person on earth

Veracity — UNCERTAINTY OF DATA

1 IN 3 BUSINESS LEADERS
don't trust the information they use to make decisions

27% OF RESPONDENTS
in one survey were unsure of how much of their data was inaccurate

Poor data quality costs the US economy around
$3.1 TRILLION A YEAR

IBM

"I think you'll find that mine is bigger..."

What is the basis for finance professionals' claim to be well placed to help unlock Big Data?

Source: CIMA

Insight, influence and impact requires...

- Inspiration/creativity
- Leading-edge expertise
- Broad views & multidisciplinary collaboration
- Business connectivity & understanding
- Data security
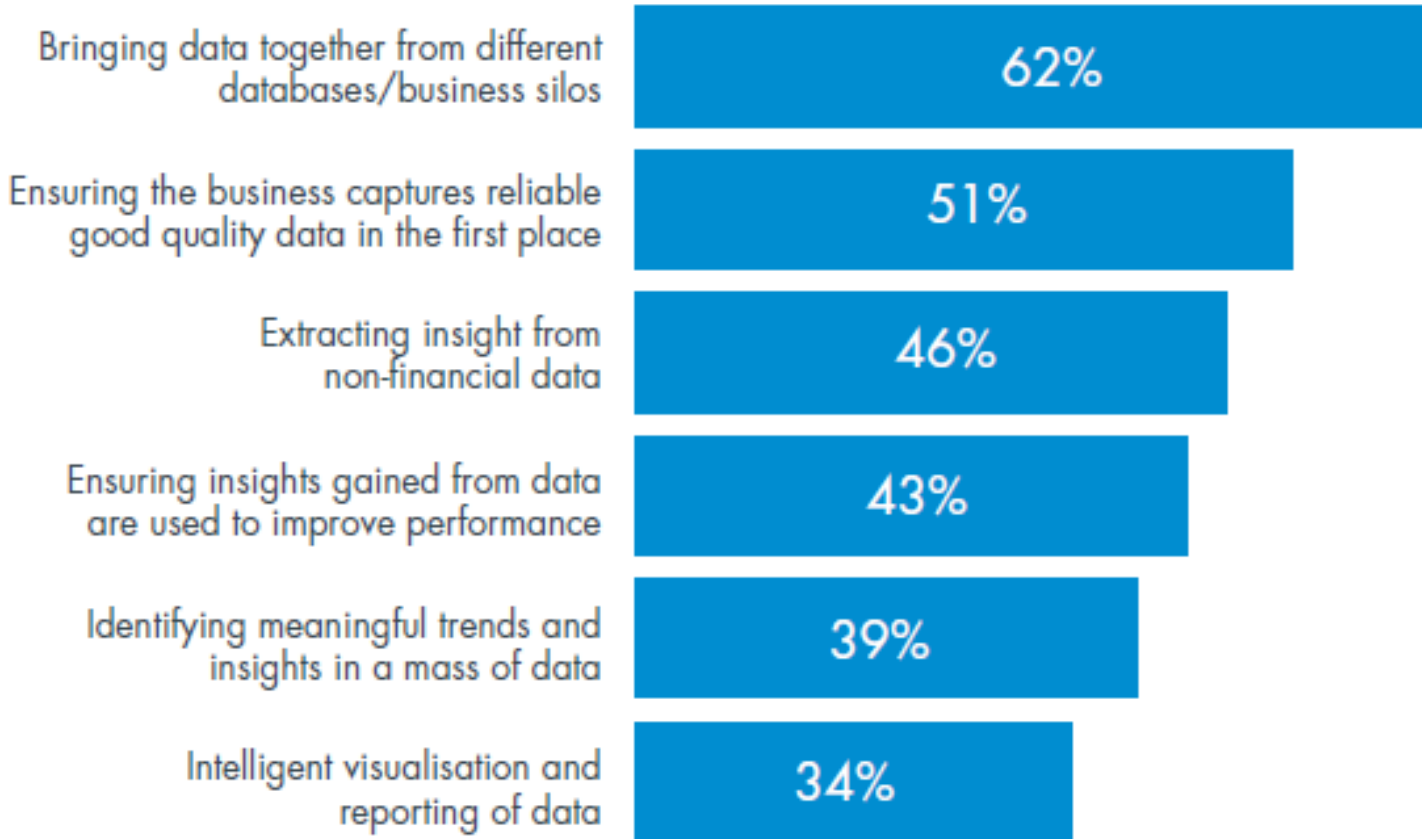- Intelligent information users
- Interpersonal skills

CIMA Survey 2015

- For most companies, fully adapting to a data driven era of business remains a work in progress.

- '86% of the finance professionals we surveyed agree that their businesses are....

  ... struggling to get valuable insight from data, not least due to issues such as organisational data silos, challenges relating to data quality, or difficulties in working with unfamiliar non-financial data.'

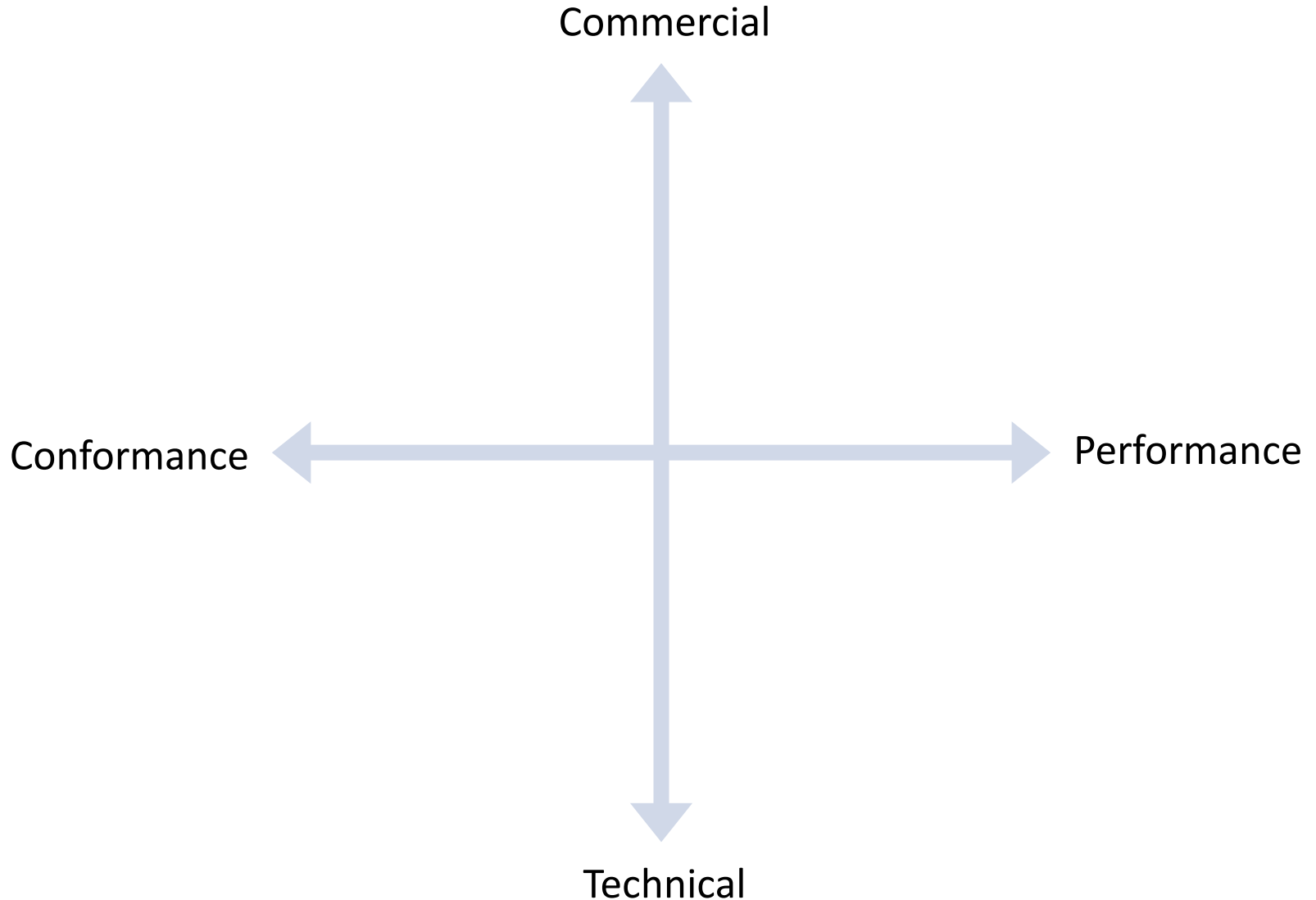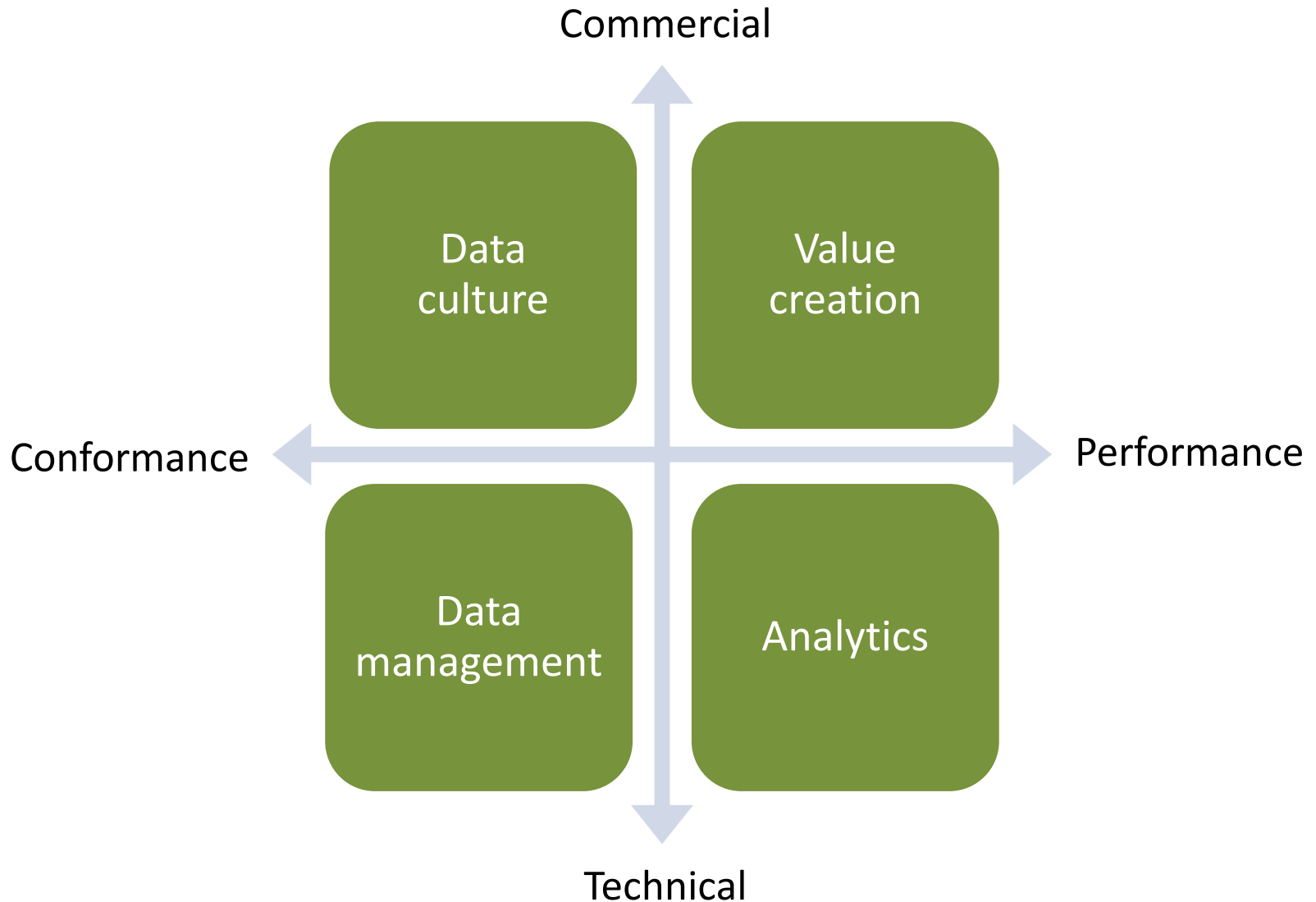# Challenges in harnessing Big Data

Challenge	Percentage
Bringing data together from different databases/business silos	62%
Ensuring the business captures reliable good quality data in the first place	51%
Extracting insight from non-financial data	46%
Ensuring insights gained from data are used to improve performance	43%
Identifying meaningful trends and insights in a mass of data	39%
Intelligent visualisation and reporting of data	34%

Challenges in harnessing Big Data

Challenge	Percentage	Label
Bringing data together from different databases/business silos	62%	Breaking down silos
Ensuring the business captures reliable good quality data in the first place	51%	Capturing good quality data
Extracting insight from non-financial data	46%	Extracting insight from non-financial data
Ensuring insights gained from data are used to improve performance	43%	Making impact
Identifying meaningful trends and insights in a mass of data	39%	Identifying trends
Intelligent visualisation and reporting of data	34%	Intelligent presentation

Challenges in harnessing Big Data

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Ensuring the business captures reliable good quality data in the first place	51%

Organisation & SSC

Extracting insight from non-financial data	46%
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Skills Bus. partners

Identifying meaningful trends and insights in a mass of data	39%
Intelligent visualisation and reporting of data	34%

Technical back office

The competencies required for data analytics

The competencies required for data analytics

Source: CIMA

New roles for management accountants

Source: CIMA
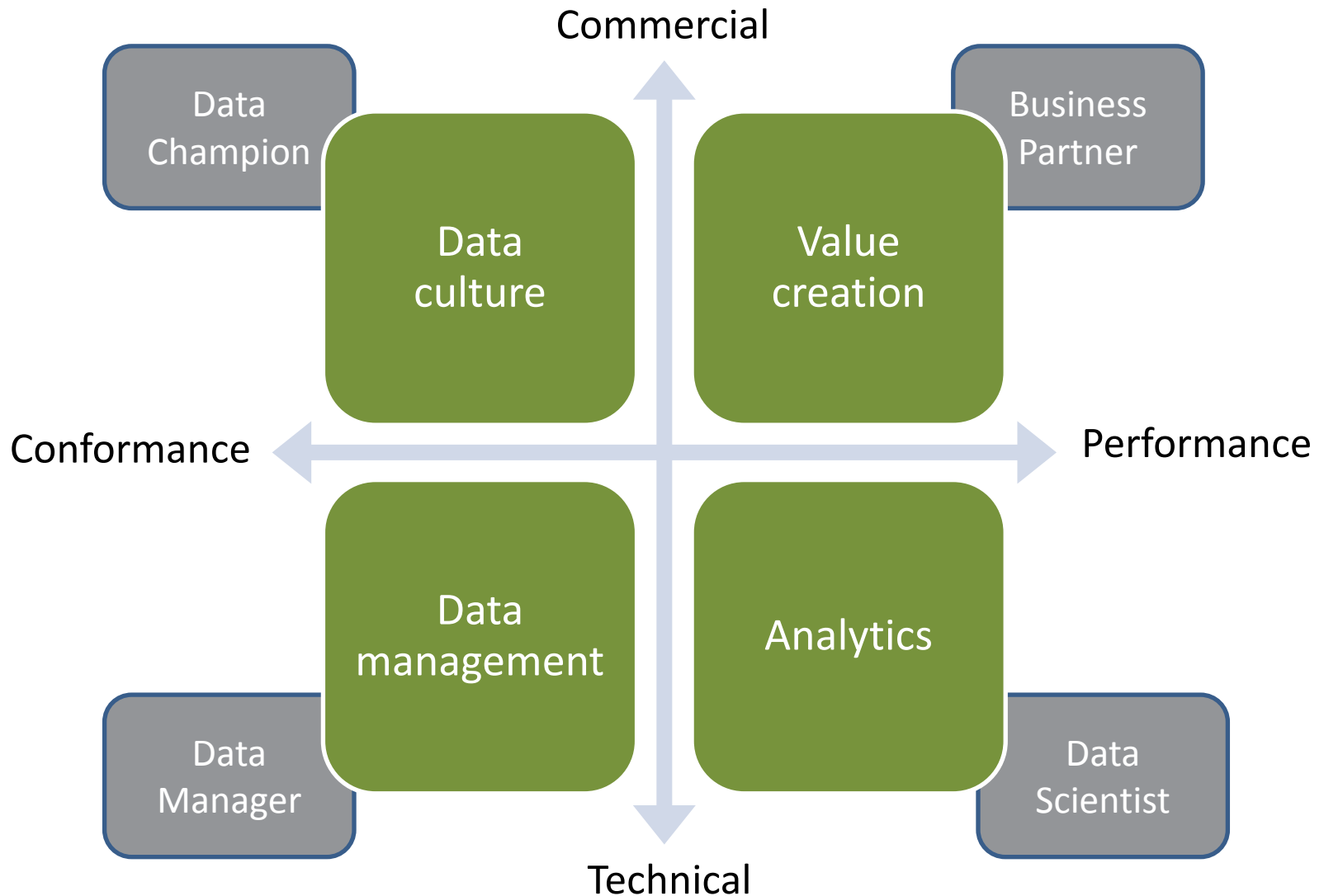
New roles for management accountants

Commercial

Conf[...]

Technical

[...]ce

Source: CIMA

Insight – an example of product extension

Baby wipes

Routes to enlightenment?

inspiration
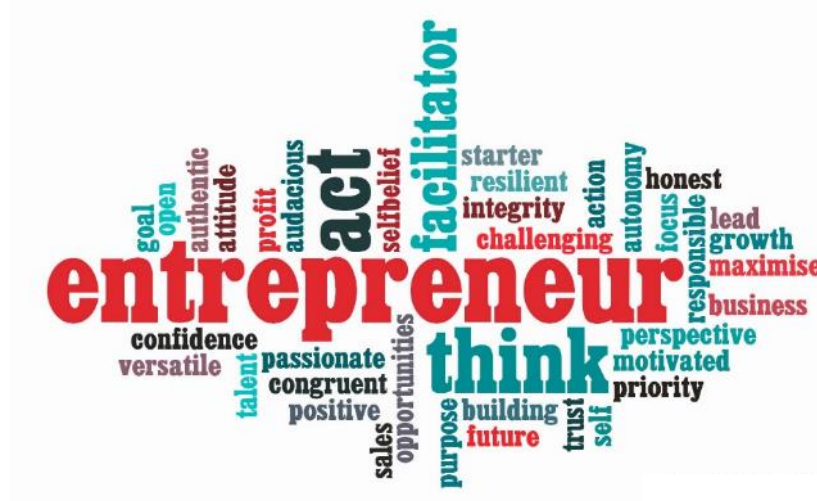
brainstorming

intention data

consultant

actual data

Insight from data – people without babies buy baby wipes – but WHY?
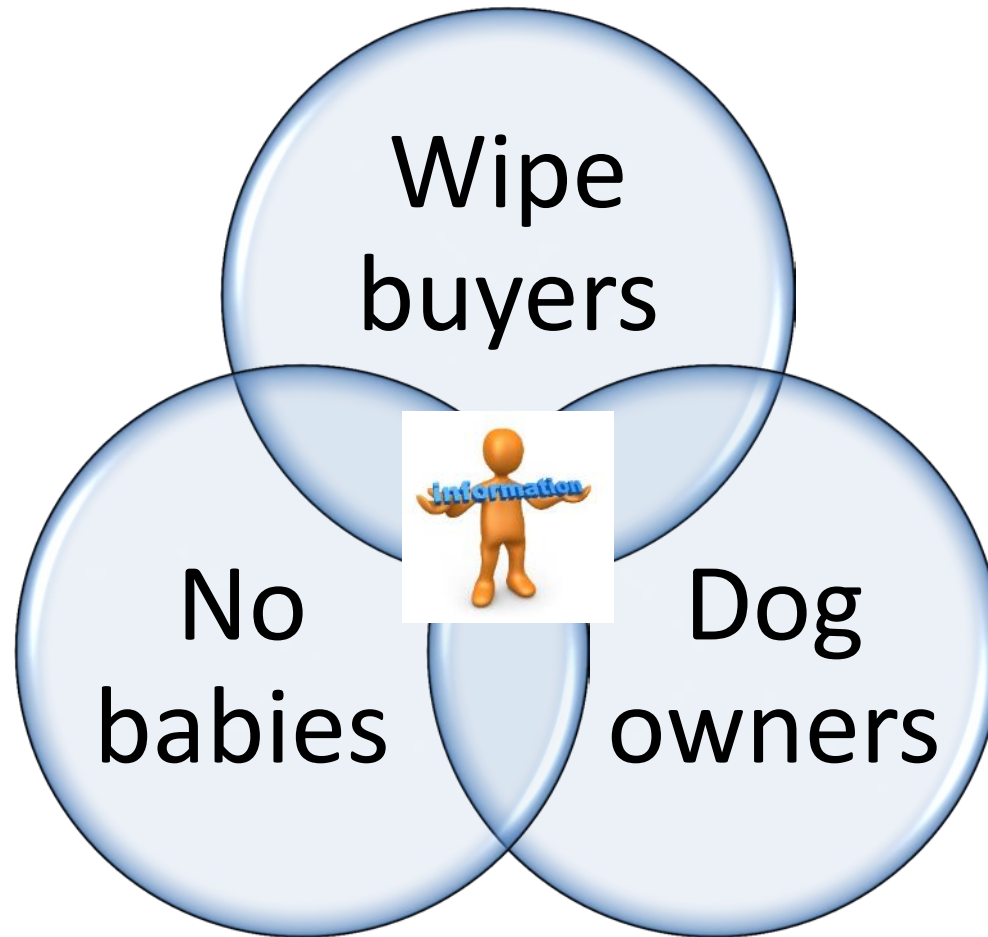
Insight from data – people without babies buy baby wipes – but WHY?

Expert knowledge? - explicit

Paralysis through analysis?
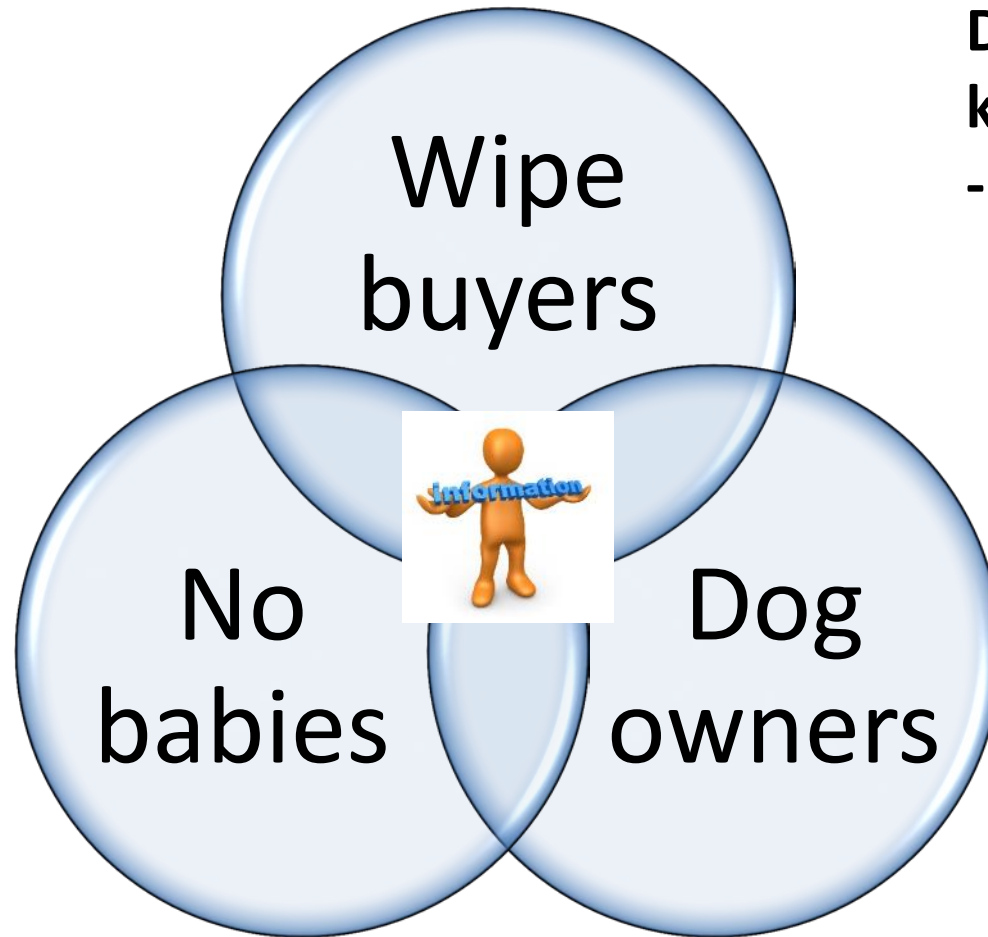
Domain knowledge? - tacit

Extinction through intuition!

Wipe buyers

No babies

Dog owners

Information

HOW DO DATA LAKES WORK?

The concept can be compared to a water body, a lake, where water flows in, filling up a reservoir and flows out.

1 The incoming flow represents multiple raw data archives ranging from emails, spreadsheets, social media content, etc.

STRUCTURED DATA
1. Information in rows and columns
2. Easily ordered and processed with data mining tools

UNSTRUCTURED DATA
1. Raw, unorganized data
2. Emails
3. PDF files
4. Images, video and audio
5. Social media tools

2 The reservoir of water is a dataset, where you run analytics on all the data.

3 The outflow of water is the analyzed data.

4 Through this process, you are able to "sift" through all the data quickly to gain key business insights.

A third dimension?
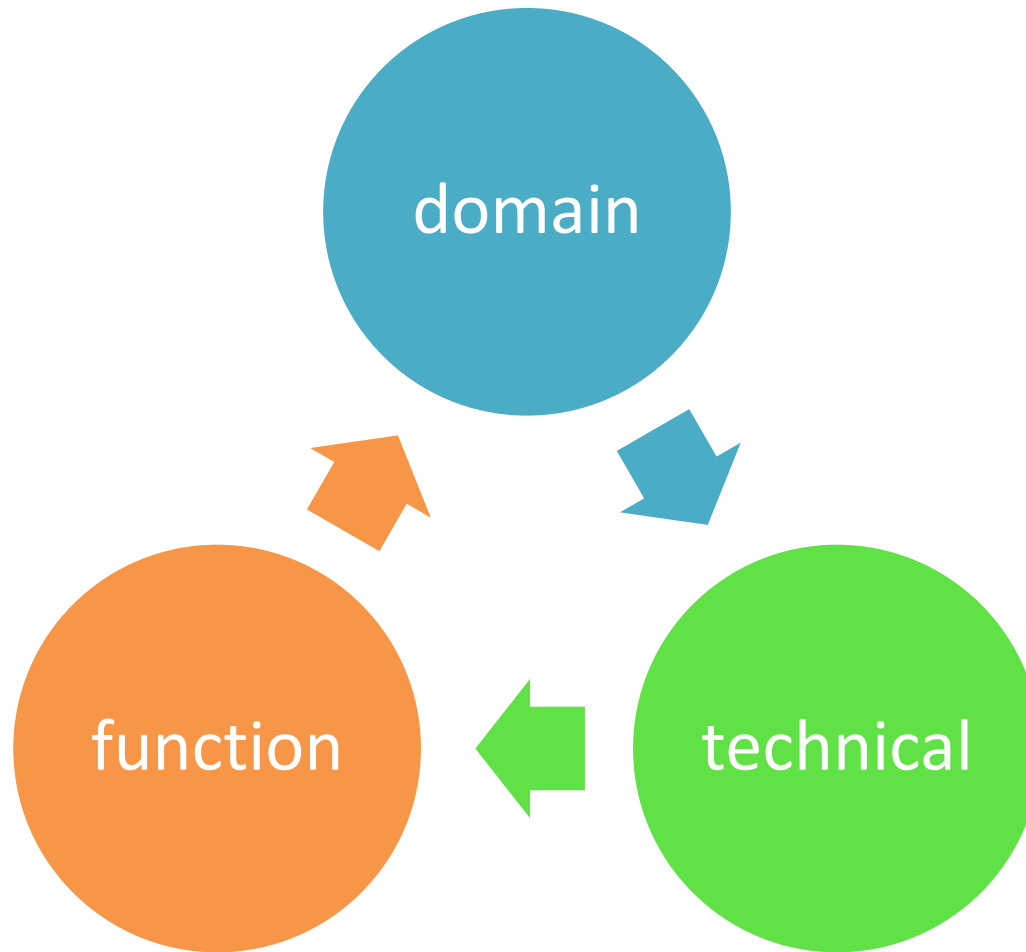
Weekend

Weekday

Are we trapped in a digital stone-age?

"It's not an exact science."

Data Analytics – Structured insight?
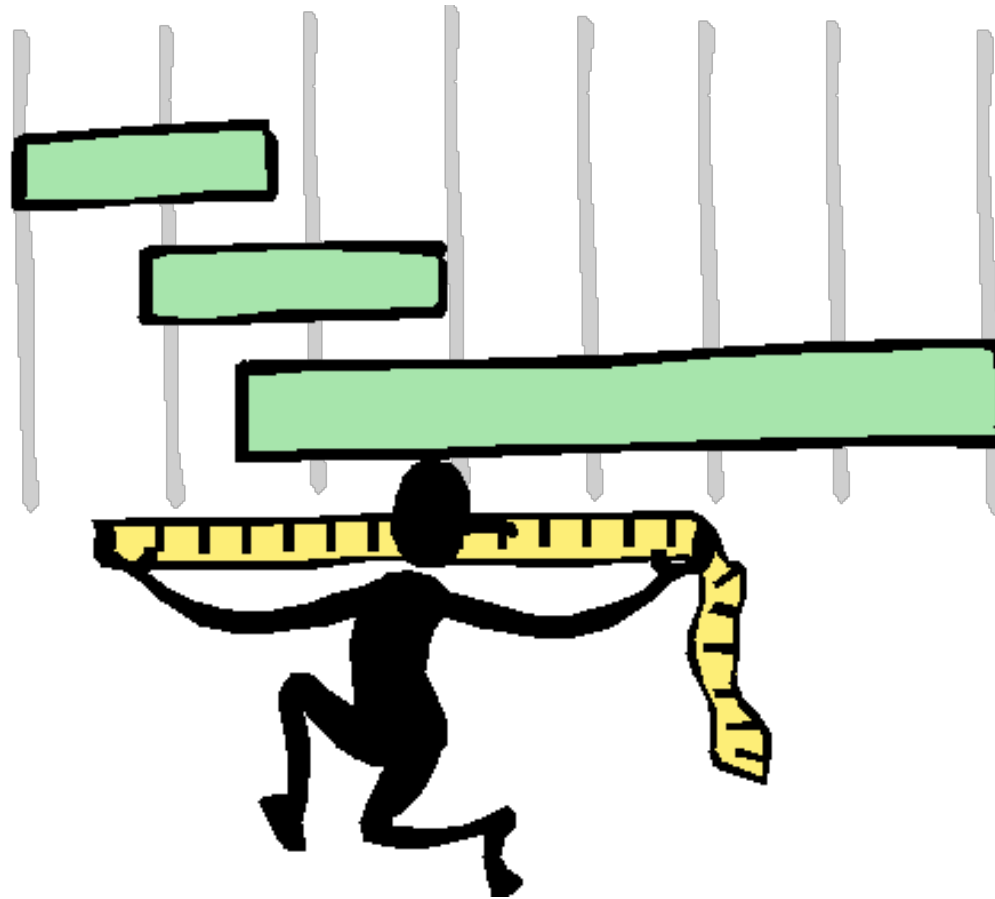
A FISHING FABLE

PROFESSOR FARMILOE - BROWN OF FRENSHAM HAD JUST RETURNED FROM A FISHING TRIP OFF FALMOUTH.

HE COMPLAINED OF FLIES AND THE UNUSUAL SMELL OF FRESH AIR!

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Clive Woodward

THE WOODWARD TEST

FINISHED FILES ARE THE RESULT OF

YEARS OF SCIENTIFIC STUDY

COMBINED WITH THE EXPERIENCE OF

MANY YEARS.

THE WOODWARD TEST

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Clive Woodward

Woodward's mantra to Jonny Wilkinson, Martin Johnson et al was simple: if you want to win the World Cup, you have to stop seeing just 3Fs, and become a 6F team.

He says: "If our brains miss the word 'of' because we take it for granted, what do you think we might be missing about the way we play, coach and manage rugby?

What are we taking for granted in the way we play our game that might actually be the one thing that could give us an advantage on the pitch?"

Sunday Times 26th September 2004

Case study 1 – Rolls-Royce

Smarter aircraft create a wealth of data but it remains underexploited

Financial Times 12th June 2015

Changing the business model through data

- Rolls-Royce, the world's second-biggest aero-engine maker, was one of the first in the aerospace industry to innovate using the data streamed by its engines. Instead of making money on the turbine itself, the UK-based group offered airline customers the chance to buy a package based on the number of hours its engines kept an aircraft flying.

- "We combined the latest-generation communications with data analytics to make sure we know what the engines are doing in service and what early intervention might be needed," says Paul Stein, chief scientific officer of Rolls-Royce.

- "By being able to make decisions about which engines need to be pulled off, overall fleet reliability has been growing and growing."

Optimising performance

- …help pilots adjust their navigation through real-time chart planning to avoid turbulence or bad weather.

- …track how fuel consumption differs according to piloting techniques.

- With one terabyte of data generated on every flight, aircraft manufacturers are considering how to leverage the information they gather across their global fleets.

However… "It is complicated," says Boeing's Mr Tinseth.

- "… [we need] the ability to filter out the bits that matter from the thousands of terabytes generated every day.

- An engine tends to have one manufacturer and a data-rich environment. With an aeroplane, you have hundreds or thousands of suppliers. There are 21,600 aircraft flying today and each has a wide variety of capability in terms of information.

- It is an apples and oranges world."

But also communication and people!

- Another industry executive suggests there is a lot of hype around the potential for mining this mountain of data in radically new ways. "We have always had this data," he says.

- But, there is the lack of sufficient communications infrastructure to harvest and transmit the data in real time.

- Plus, a shortage of engineers as older workers retire.

And of course, security…

- Security experts have warned for some years that airlines are a possible target for hackers.

- Planes including the Boeing 787 Dreamliner and the Airbus 350 and A380 have a single network that is used by both pilots to fly the plane and by passengers for their wi-fi connections.

- "The risk is that a hacker sitting in the back of a plane, or even one on the ground, could use the wi-fi connection to hack into the avionics and then remotely fly the plane," explained security expert Bruce Schneier.

But….. same old basic problems persist

- Rolls-Royce has issued its third profit warning in just over a year, blaming lower oil prices and weaker demand for some of its aircraft engines.
- Rolls last issued a profit warning in February, claiming the sharp fall in oil prices had "increased uncertainty for many of our markets and customers".
- It had previously said its 2015 profit would be between £1.4bn and £1.55bn.
- But on Monday, the engineering firm lowered its profit outlook again, this time to between £1.325bn and £1.475bn.
- Rolls-Royce shares fell nearly 9% to 780p on the profit downgrade.
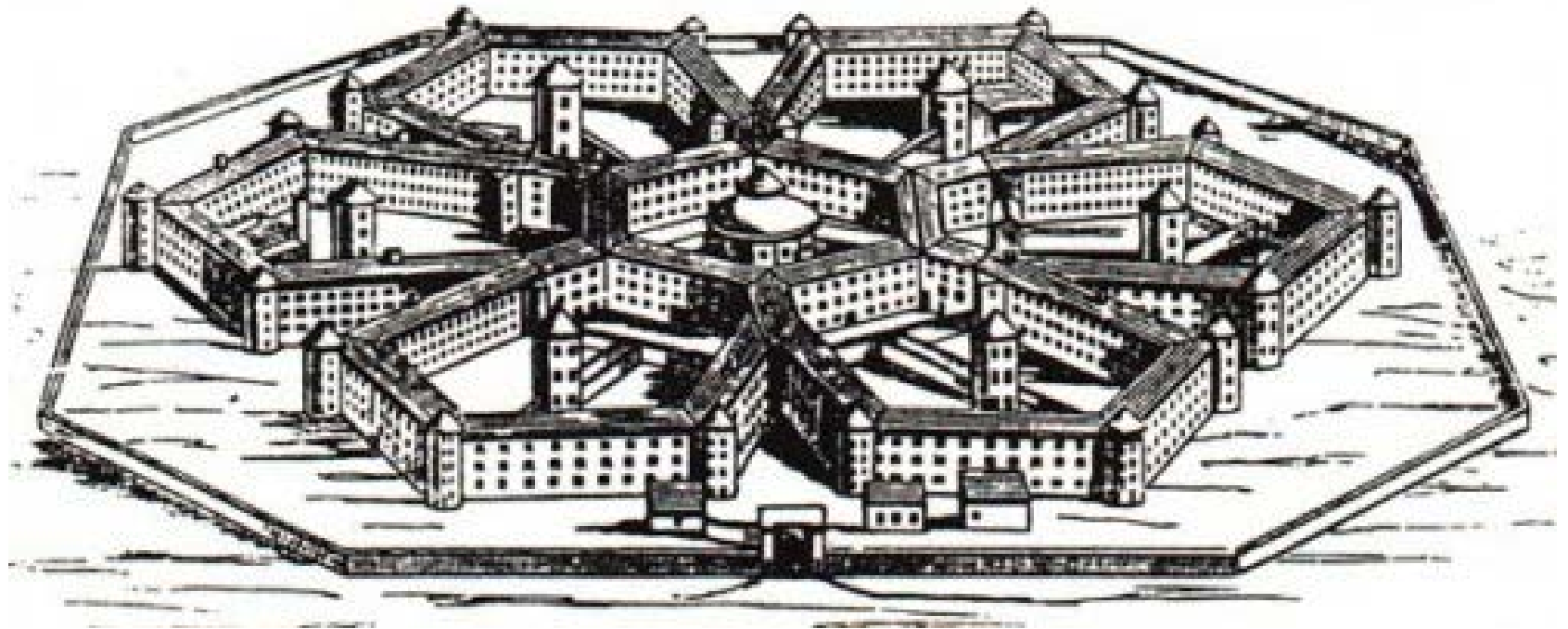
- *...to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power.*

- Michel Foucalt's *Discipline & Punish: The Birth of the Prison*

Questions?

Case 2 - Oilco

Role general business and Revenue process

- Continuous improvement lead supporting Shell's global revenue process, inc. credit assessment.

- 1200 staff located in Malaysia, Philippines, India, Poland and Scotland.

- Team of 10 staff members that are Lean Six Sigma professionals.

- Looking for improvement opportunities that will generate value for Shell,
  - cost savings in executing processes,
  - improving working capital for the company and
  - generating more income.

- And, creating a continuous improvement mindset in our leaders.

How has Shell used DA in the Revenue process?

- Analytics tool called Process X-ray to identify process improvement opportunities.

- Data extracted from global ERP to capture the key activities for each transaction including customer order date, product delivery date, delivery location, invoicing date and customer payment details. Each activity has a time stamp and it also shows who completed the activity.

- Improvement opportunities might be:

  – Which part of the process has high rework?
  – Which customers or business have late payment patterns?
  – Where invoices are issued late?
  – Identifying best performing countries to foster best practice sharing?
  – Creating a platform that enables benchmarking?

How do you know the output is right?

- The data is directly from the global ERP thus, correct.

- Biggest challenge is in how we interpret the data.

- For example, a delay between product delivery date and invoicing date, is that really a value leakage or is due to our business model or sales contract that we have with the customer?

- A value leakage might be an opportunity for a Lean Six Sigma improvement project.

How far do you see DA and BD going?

- The focus on data and data quality has increased significantly over the last 3-4 years. Our initial focus was on improving the quality of our master reference data.

- However, over time we have transitioned to DA and now we have moved to exploring value from BD to help us structure our product offerings.

- I think both DA and BD will play a more significant role in influencing key business decisions in the future and it will be a tool that many companies will use to help them remain competitive and generate greater company value.
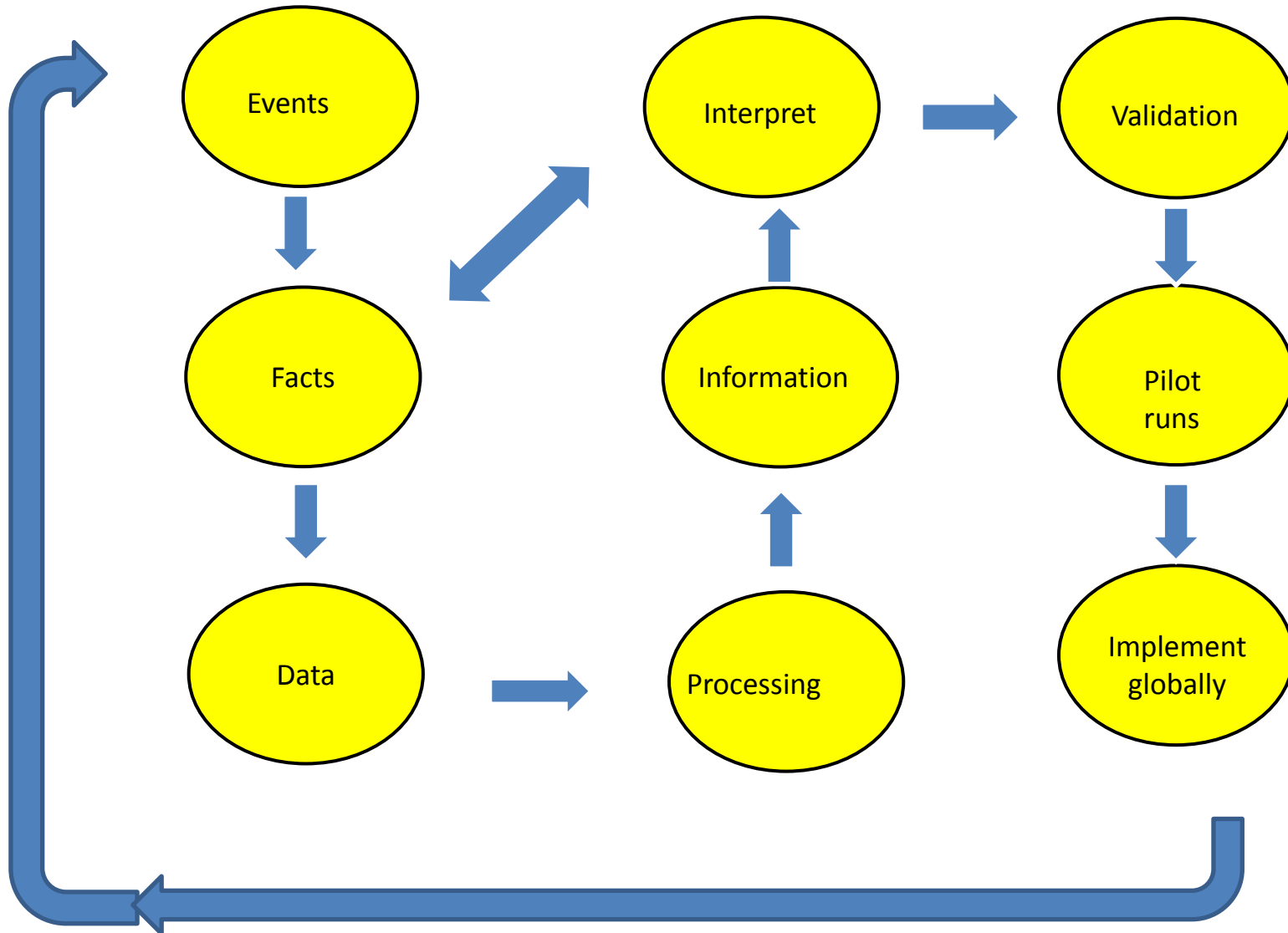
New Data Analytics team

- Start with the problem or the solution?

- Play with the data to generate solutions (Garbage can model)

- Start with the pain points / activity hotspots

How do you know what is happening in the analytical blackbox?

- We always validate data with the facts (events)

- 'Numbers show us where there are potential improvement opportunities, our job is to understand the difference between data and facts. Facts can only be derived by talking to the staff that do the job and understanding the process or the business well.'

Data analytics – flows and checks

Questions?

Loughborough University

Search

Shared Services Research

Thought Leadership from Loughborough University

- Welcome!
- Project overview
- News and events
- Our Work
- Our Publications
- The SSC Forum
- In the Spotlight
- Links and resources
- The Team
- Contact Us

Welcome!

Welcome to the Shared Services Project Website: A Resource for Academics and Practitioners

Here we'll tell the story of our investigation into the emerging phenomena of the Shared Services model. Through speaking with leading companies we have discovered a real need to understand the Shared Services model and come together to formulate best practice.

News

- Andrew Rothwell to present at Universities UK conference
- Malaysia Activity Report
- Intellectual capital: Optimising performance in SSC's
- Ian Herbert Participating in CIMA Expert Roundtable – 15th January 2013
- CIMA-Loughborough Sourcing event – 18th January 2013 – Colombo, Sri Lanka

If you have any query on the project, a story to tell from your Shared Service Experience, or if there is anything you would like to see added then please contact the team on ssc-research-team@lboro.ac.uk or let us know what you think through our Discussion Board.

In the Spotlight

Revisiting Ian Herbert and Will Seal's 2011 article 'Shared Services as a new organisational form: some implications for management accounting' – can you see any other issues that we must consider? **Join the discussion by clicking here**.

This project is supported by the Chartered Institute of Management

CIMA Chartered Institute of Management Accountants

Andrew Rothwell to present at Universities UK conference

www.shared-services-research.com