MONASH University

Information Technology

FIT 3138
Real-Time Enterprise Systems

Lecture 10

ERP Implementation Issues

- Data and Systems Integration
- Managing Change in ERP Implementations

Unit Outline

Week	W/C	Topic	Deadline:
1	25/07	Introduction to FIT3138; Introduction to Enterprise Systems	
2	01/08	Systems Integration - Role of ERP in Business Functions and Processes	Assignment 1 handed out
3	08/08	The Development of ERP Systems	
4	15/08	ERP in Sales and Marketing & CRM	
5	22/08	ERP in Production and Supply Chain Management	
6	29/08	Accounting in ERP Systems	
7	05/09	Process Modelling & Improvement	Assignment 1 due Assignment 2 handed out
8	12/09	ERP Implementation – Life Cycle & Strategy	
9	19/09	ERP Implementation – Risk Management	
Mid-semester Break (26 Sep – 30 Sep 2022)			
10	03/10	ERP Implementation Issues: Managing Change	
11	10/10	Technologies supporting real-time enterprise	
12	17/10	Exam Review	Assignment 2 due

Objectives

- Explore the key integration issues – data & systems integration
-
- Identify the main drivers for Master Data Management
- Discuss the impact of change management on ERP Implementation
- Define organisational change management
- Discuss Kotter's 8 Step Process for Leading Change

Business Benefits – Example: integration of supply chain

Gain competitive advantage and differentiation

- Improvement real time responses
- Just in time techniques

Reduce operational costs

Achieve better collaboration and coordination among supply chain partners

Integrate business processes/BPR

- Automate business processes
- Reduce manual tasks
- Reduce data redundancy

Systems Integration

Systems Integration is…

- the process of linking together different computing systems and software applications physically or functionally, to act as a coordinated whole

Systems Integration involves…

- Assembling the constituent parts of the enterprise systems in a logical, cost-effective manner
- Systems testing to verify that the system meets its requirements, and
- Validating that the system performs in accordance with the customer/user expectations

Overcoming data integration issues with master data

Master data are synchronized copies of core business entities (objects)

- **Master data objects assigned a unique identifier**
  - customers, products, employees, vendors, parts

Concept of master

- implies all application users within the company link to a single core repository of the data

Centralised governance over the master copies – master data management

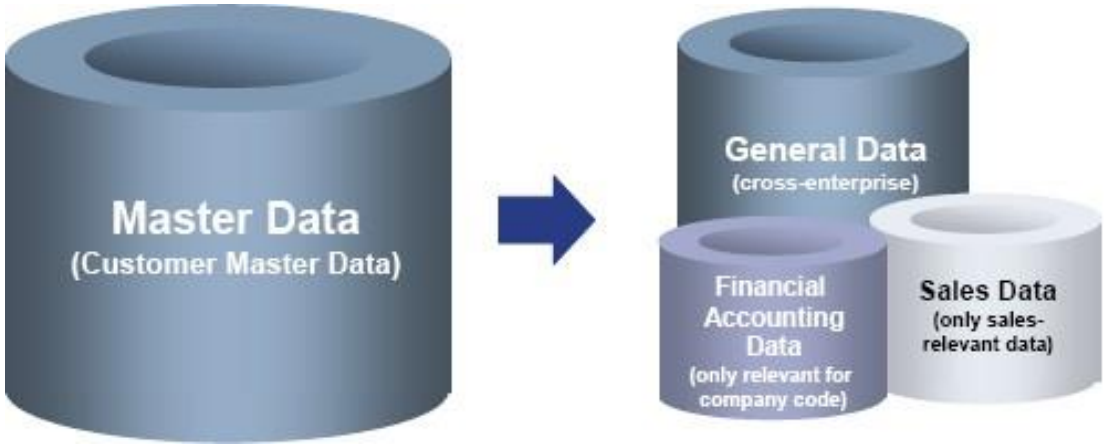
- Metadata,
- Data attributes,
- Data definitions,
- roles, connections and taxonomies.

Master Data: Business object: Customer

Data which is used over a long period of time

Master data is created centrally and can be used by all applications and authorised users for executing business processes

Contains key information defining the business relationship

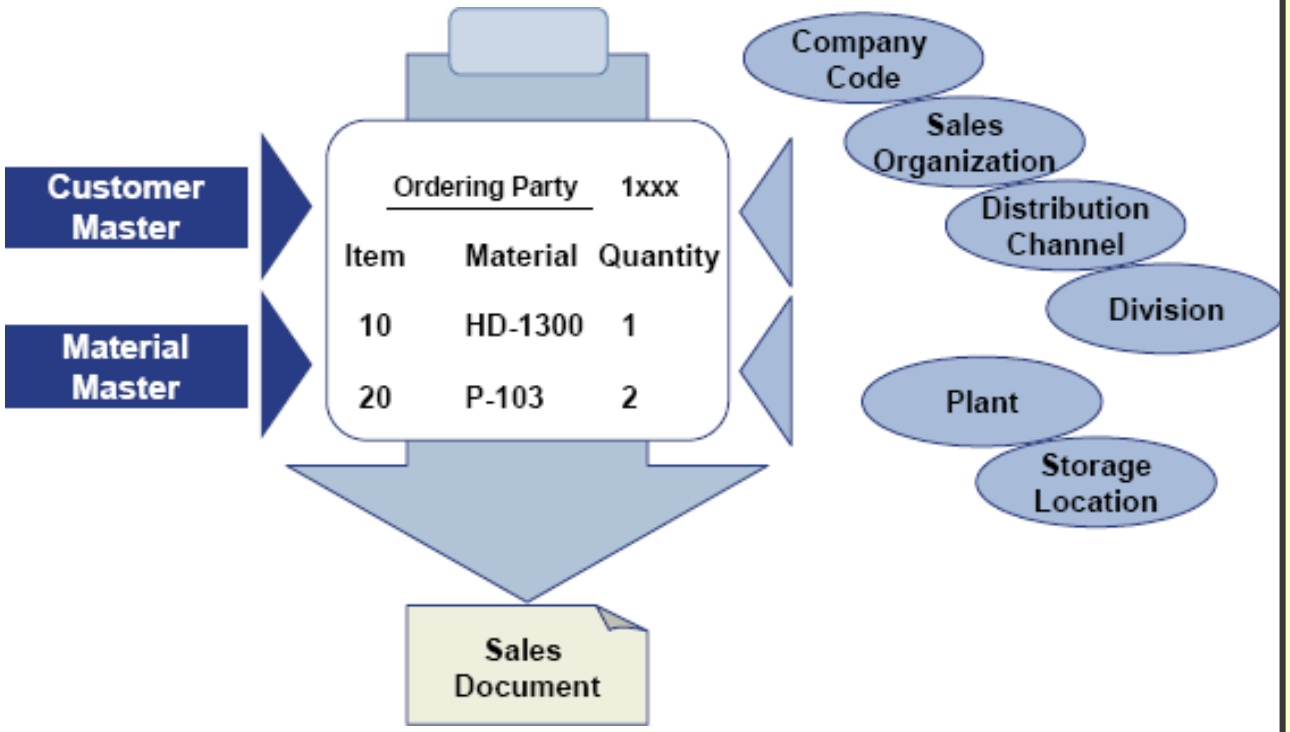


Name and Address Phone No

Trade Discounts

Sales details Credit details

Transactional data



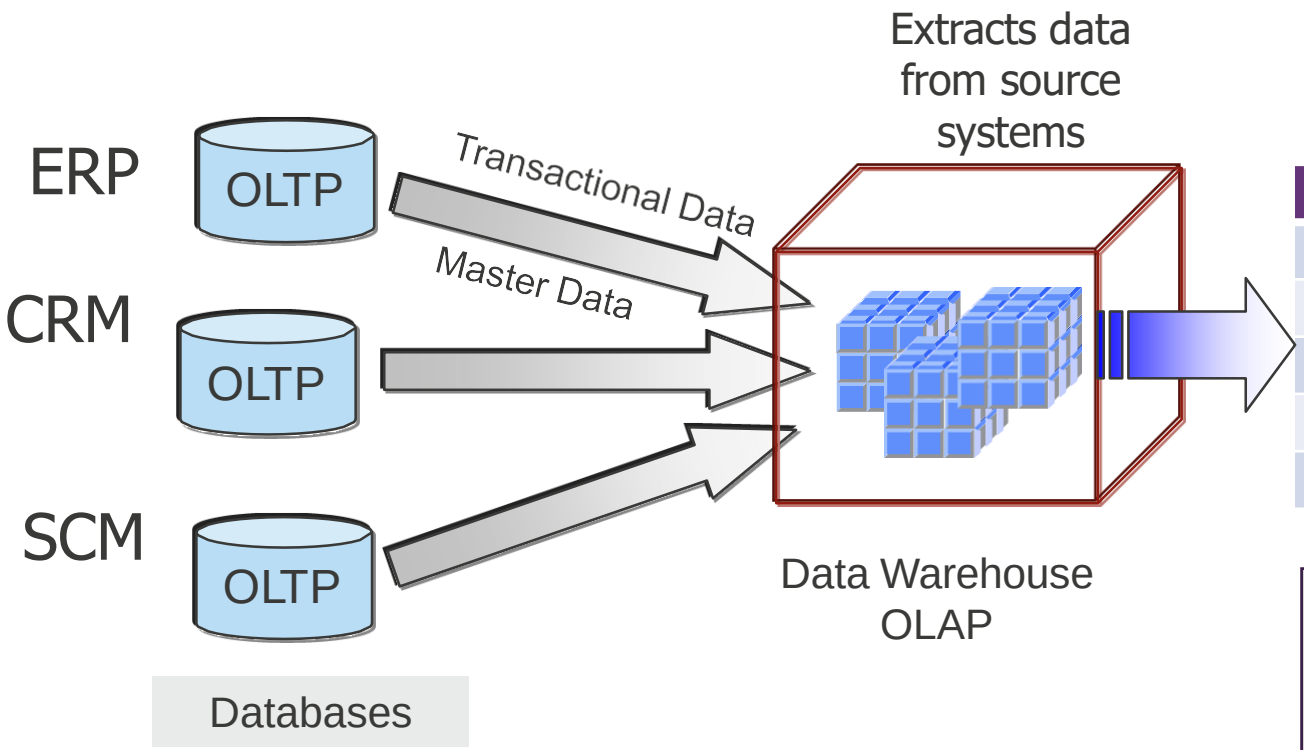
Transactons are : Application programs which execute business processes

Transactions Include:

- creating a customer order,
- posting an incoming payment,
- approving a leave request.

Document: a data record generated when a transaction is carried out

Data Integration diagram



Month	Customer	Invoice $
June	Jones	$2000
June	Rosemann	$4000
June	Nygung	$1400
June	Ramp	$5000
July	Jovanovic	$340

Data Warehouse

- **A copy of transaction data specifically structured for query and analysis (R. Kimball, "The Data Warehouse Toolkit" 1996)**

Hillam, J., Demystifying the Data Warehouse. (7.20)
http://www.youtube.com/watch?v=mgEugd5kZgk&feature=related

Master Data Management

- Master Data Management is a
  - set of disciplines, processes and technologies
  - used to create and maintain
    - consistent,
    - complete,
    - contextual and
    - accurate data quality
  - of multiple domains of enterprise master data across applications, systems and databases.
  - Ensures quality business data for all stakeholders (users, and applications) across and beyond the enterprise landscape
  - Move to a single version of the truth about business objects

Some videos on MDM:

- Ten Best Practices for Master Data Management and Data Governance

https://www.youtube.com/watch?v=kFok_3SPmKw

- What is Master Data Management ?

https://youtu.be/2vhArFG_eCo

The main drivers for MDM?

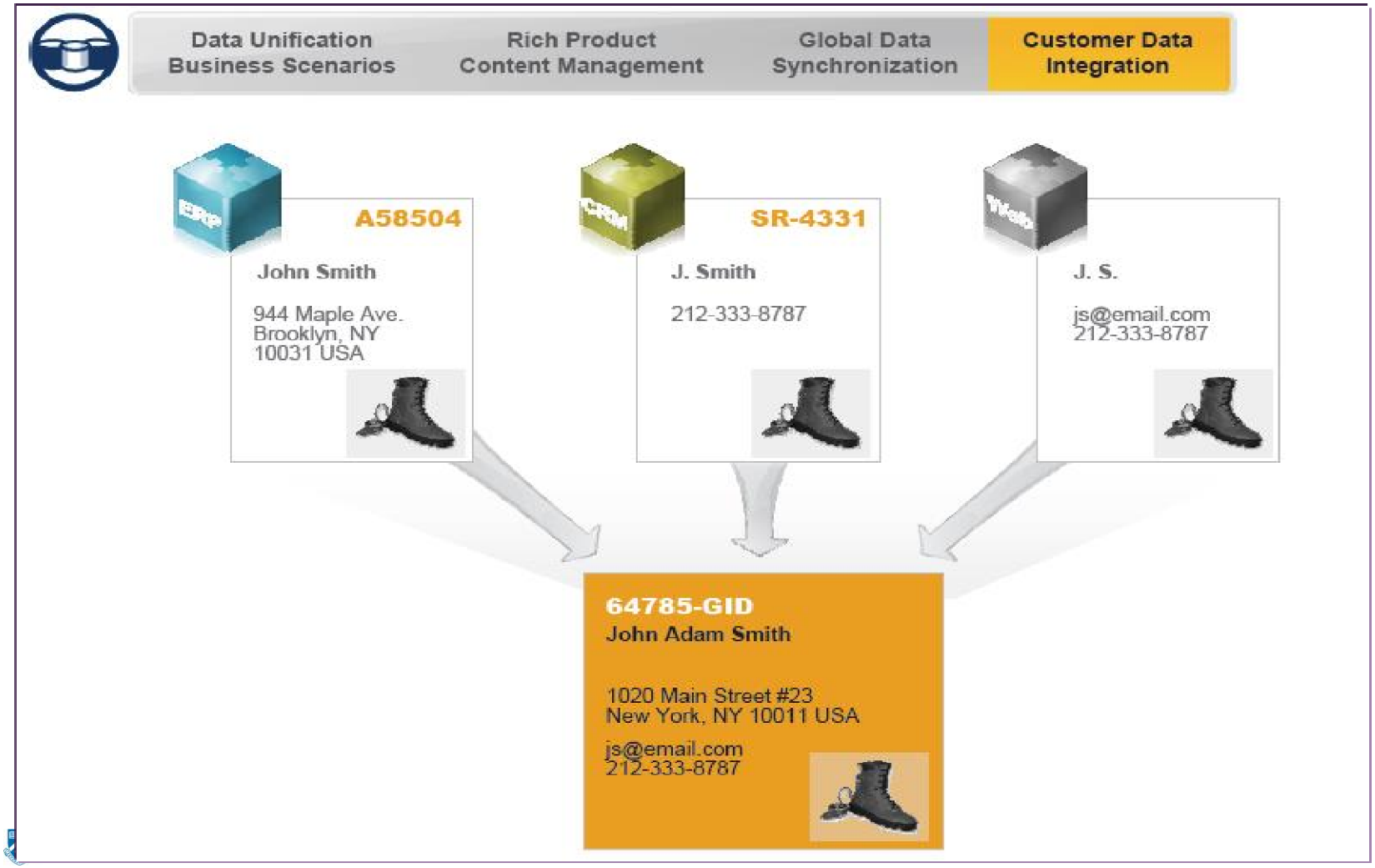
- Regulatory compliance and reporting
  - Sarbanes Oxley
- Partner integration and collaboration
- Global demand and supply chain optimisation
- Privacy and data protection
- Meaningful data mining
  - Improved customer insight and interactions
- Better able to manage data
- Data integration to enable BI

Without MDM …

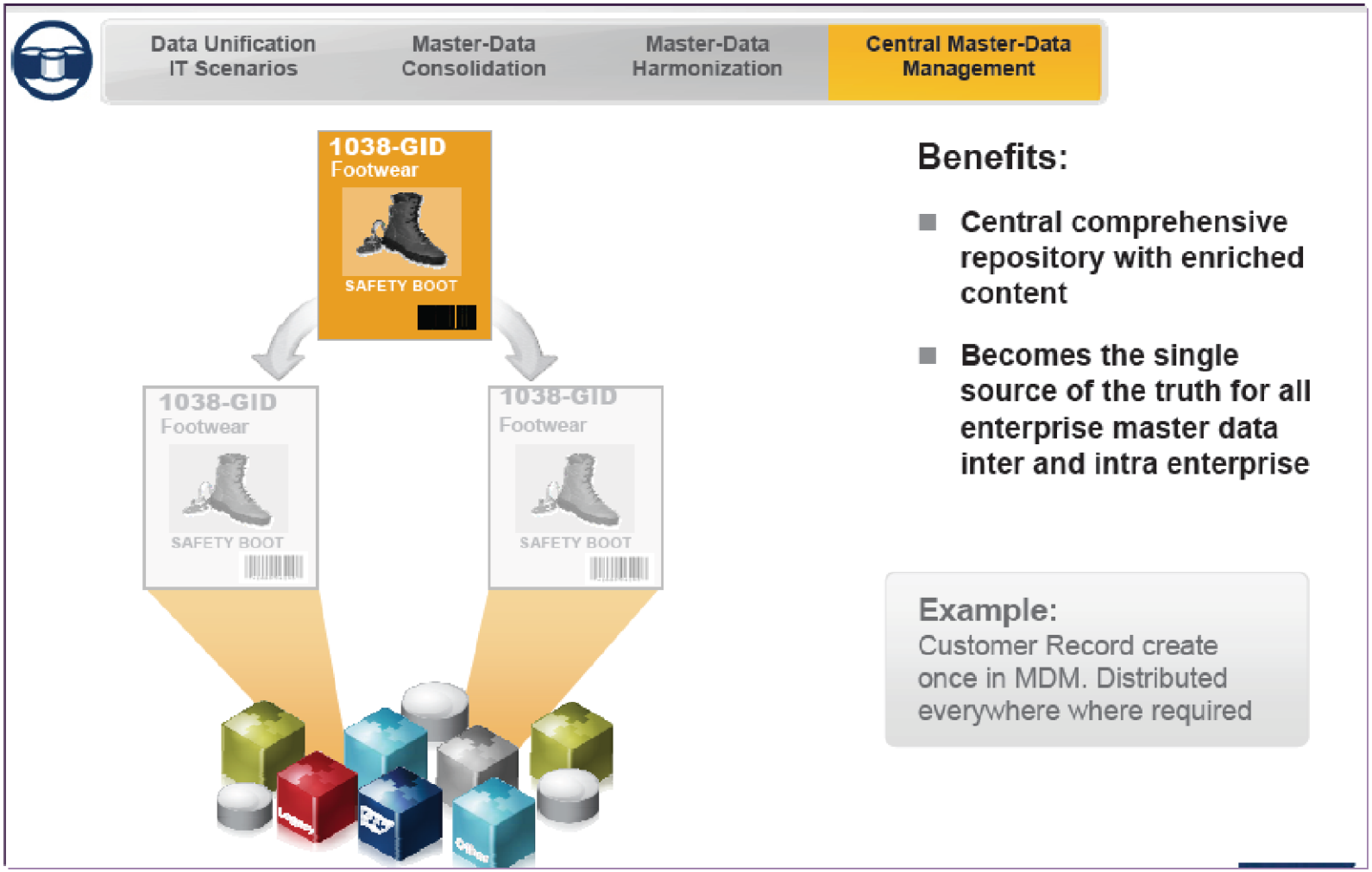
- No MDM - No one consistent view of data – every department has different data
- Master data generated and trapped in silos
- Inaccurate information perpetuated
- Incomplete view

(2.37) TIBCO http://www.youtube.com/watch?v=xVWt-CsNBnU&feature=related

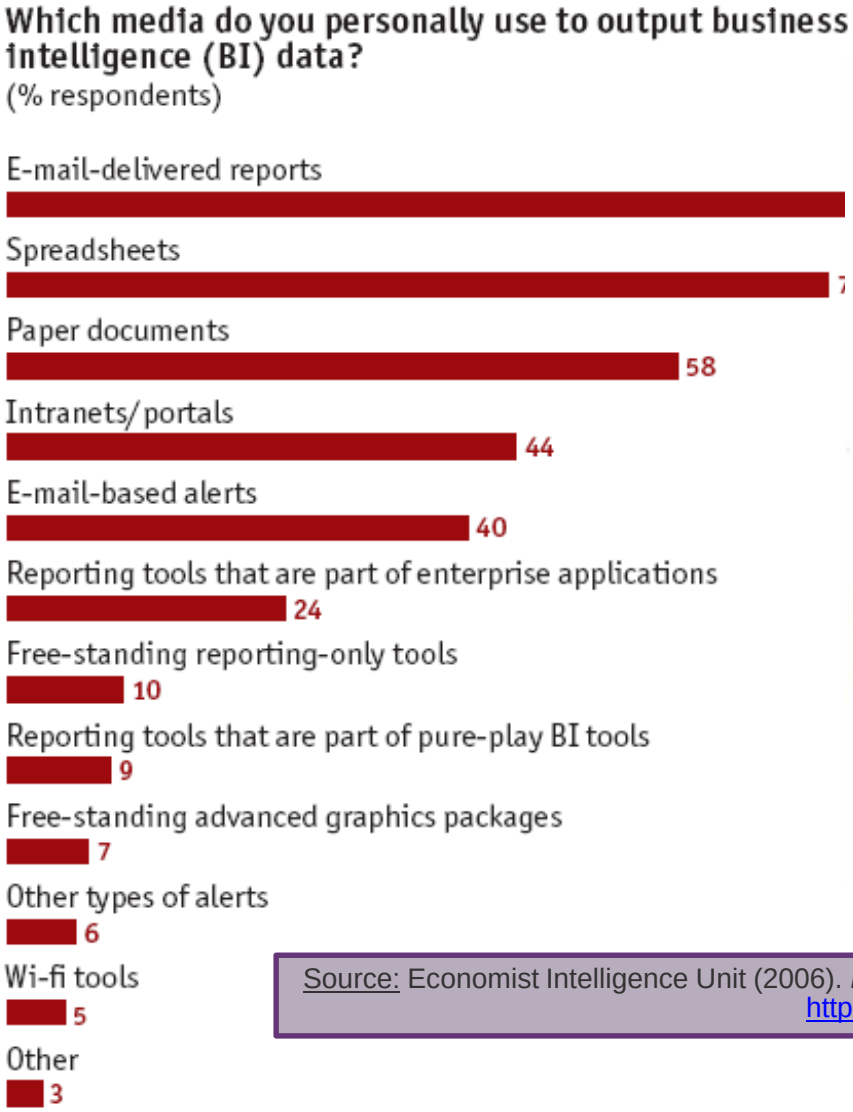
Managing customer information



Central MDM


Data Unification
IT Scenarios
Master-Data
Consolidation
Master-Data
Harmonization
Central Master-Data
Management
1038-GID
Footwear
SAFETY BOOT
1038-GID
Footwear
SAFETY BOOT
1038-GID
Footwear
SAFETY BOOT
Benefits:
Central comprehensive repository with enriched content
Becomes the single source of the truth for all enterprise master data inter and intra enterprise
Example:
Customer Record create once in MDM. Distributed everywhere where required

Business Intelligence Data



Source: Economist Intelligence Unit (2006). *Putting Information to Work.* Retrieved 09/22/2007 from http://www.eiu.com

Business Intelligence Evolution

(Alexander 2008)

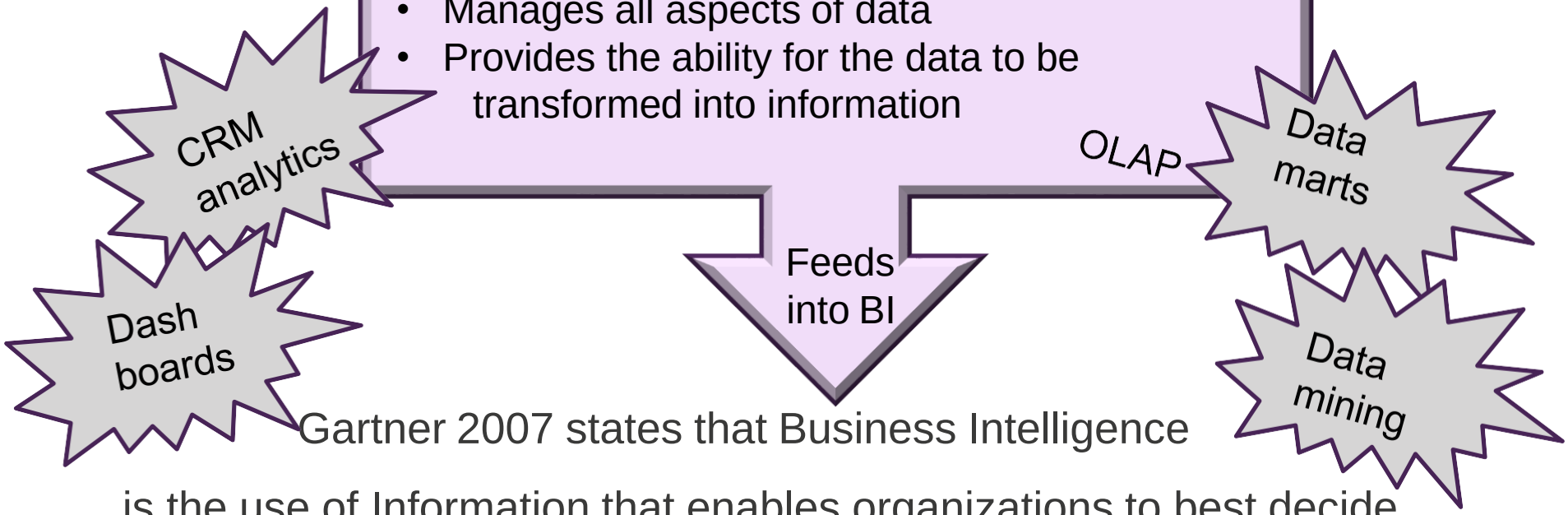
Evolution Phase	Business Question	Enabling Technology
Data Collection (1960s)	***"What was my total revenue for the day?"***	**Data Processing Applications**
Data Access (1980s)	***"What were sales quantity in Australia last March?"***	**Relational Databases (OLTP)**
Data Warehousing & Decision Support (1990s)	***"What were sales quantity in Europe? Drill down to Germany"***	**On-Line Analytical Processing (OLAP)**
Data Mining (emerging today)	***"What is likely to happen to sales in Europe in fuel prices increase? Why"***	**Advanced algorithms, increased computing power**
Big data (today's buzz word)	***"How big is big data"*** ***"How do I manage big data"***	**Hana, Hadoop, IBM**

(8.33 mins) Explaining big data http://www.youtube.com/watch?v=7D1CQ_LOizA&feature=fvwrel
(12 mins) IBM Big Data Strategy http://www.youtube.com/watch?v=OIXJaLff1kc&feature=related
(9 mins) Big Ideas: How Big is Big Data? http://www.youtube.com/watch?v=eEpxN0htRKI

We will discuss more about BI and Big Data in Lecture 11

SO WHAT IS THE DIFFERENCE between a Data warehouse and BI?

- Data warehouse is the back room database
- Supports the tools used to maintain the data warehouse
- Manages all aspects of data
- Provides the ability for the data to be transformed into information



Gartner 2007 states that Business Intelligence is the use of Information that enables organizations to best decide, measure, manage and optimize performance to achieve efficiency and financial benefit

Part 2: Change Management

Source: Change Management: The Business Case For It That Your Boss Can't Overlook | Simplus Australia

Introduction

- What is Change Management?

  "Change management is an approach to transition individuals, teams, and organisations to a desired future state."

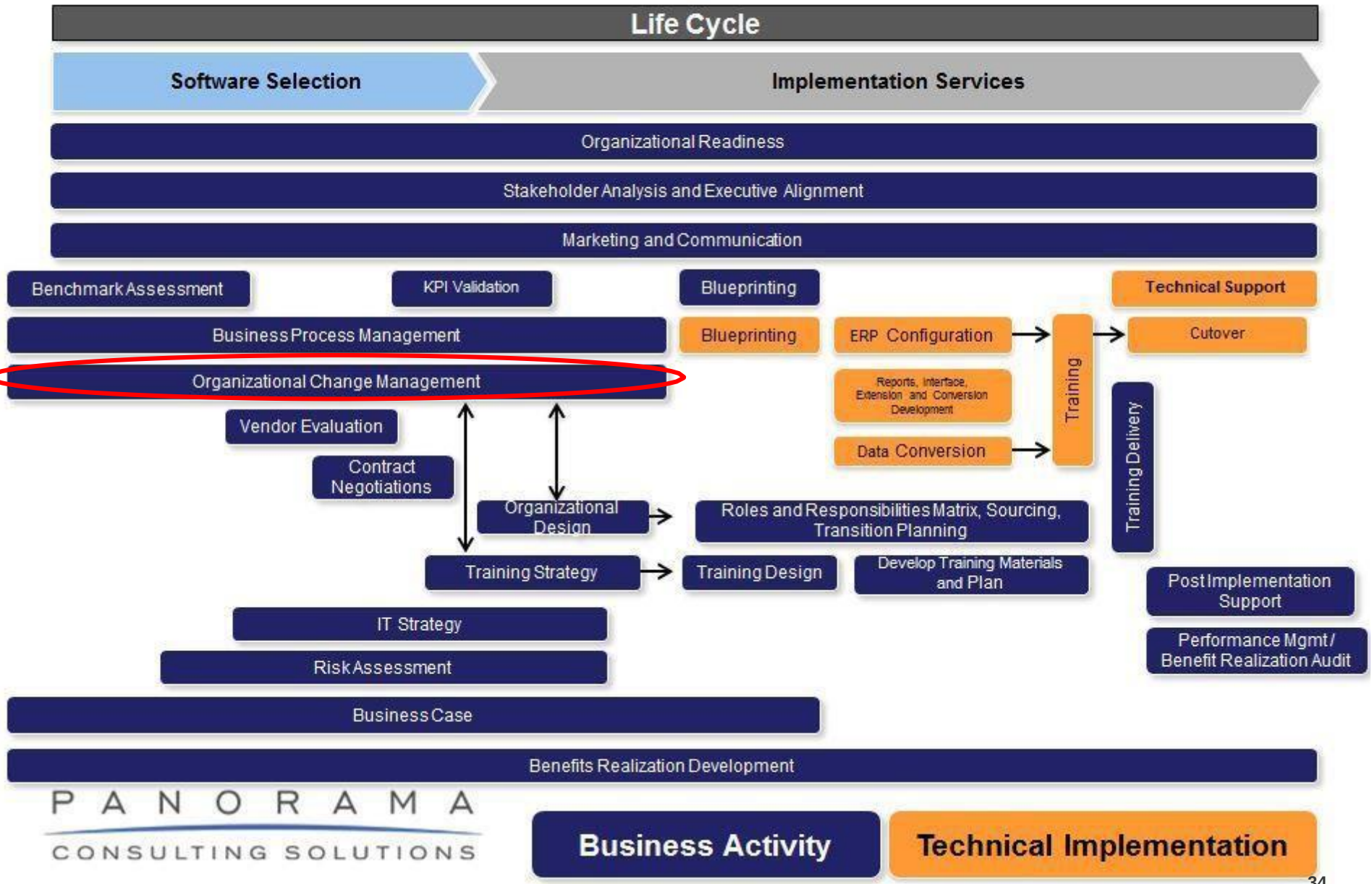
  Kotter, J. (July 12, 2011). "Change Management vs. Change Leadership -- What's the Difference?"

  What is Change Management?

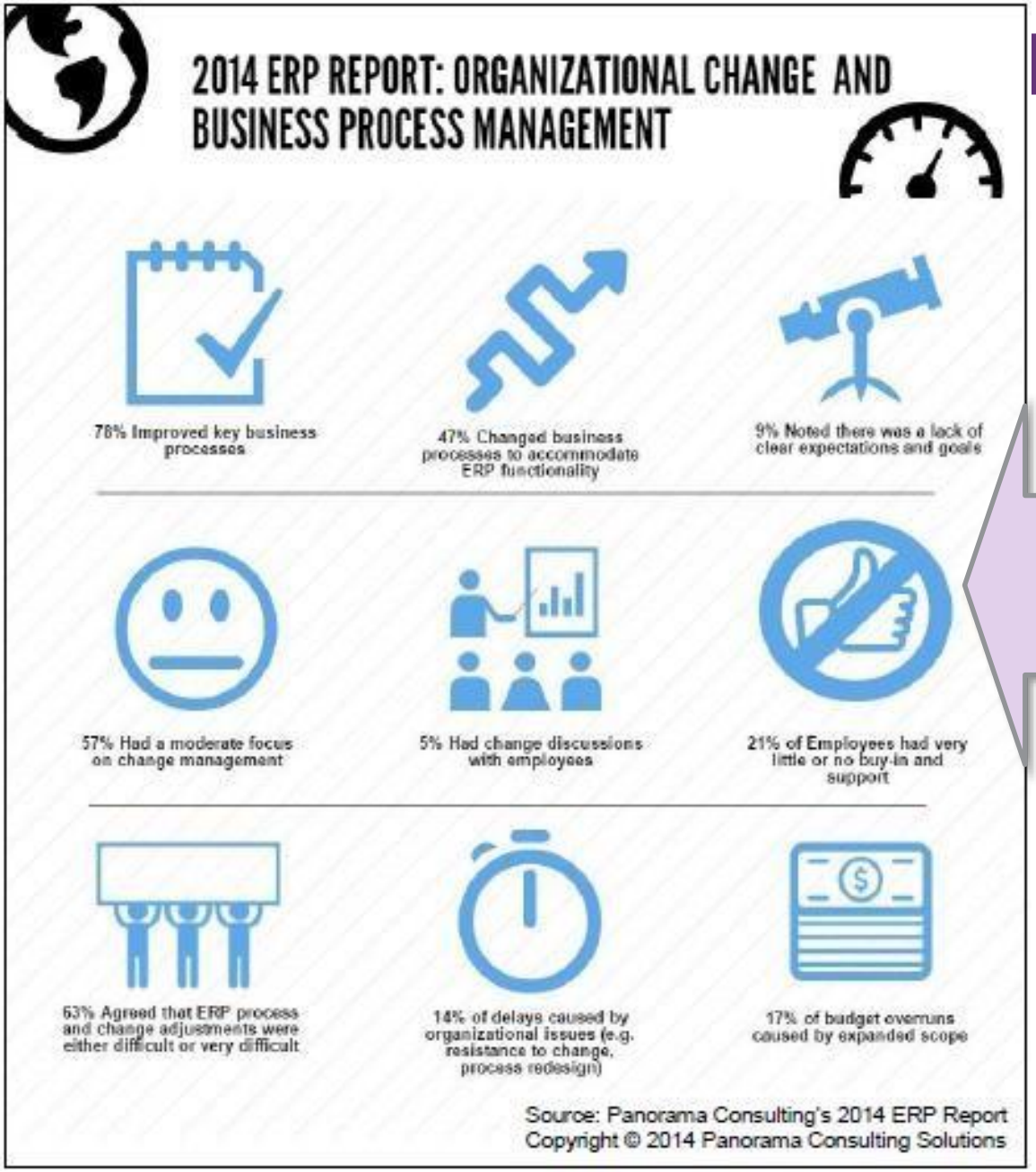
- How do we deal with change ?

  Who moved my Cheese? by Dr. Spencer Johnson

ERP Project Life Cycle



Source: Panorama Consulting's 2014 ERP Report Copyright © 2014 Panorama Consulting Solutions

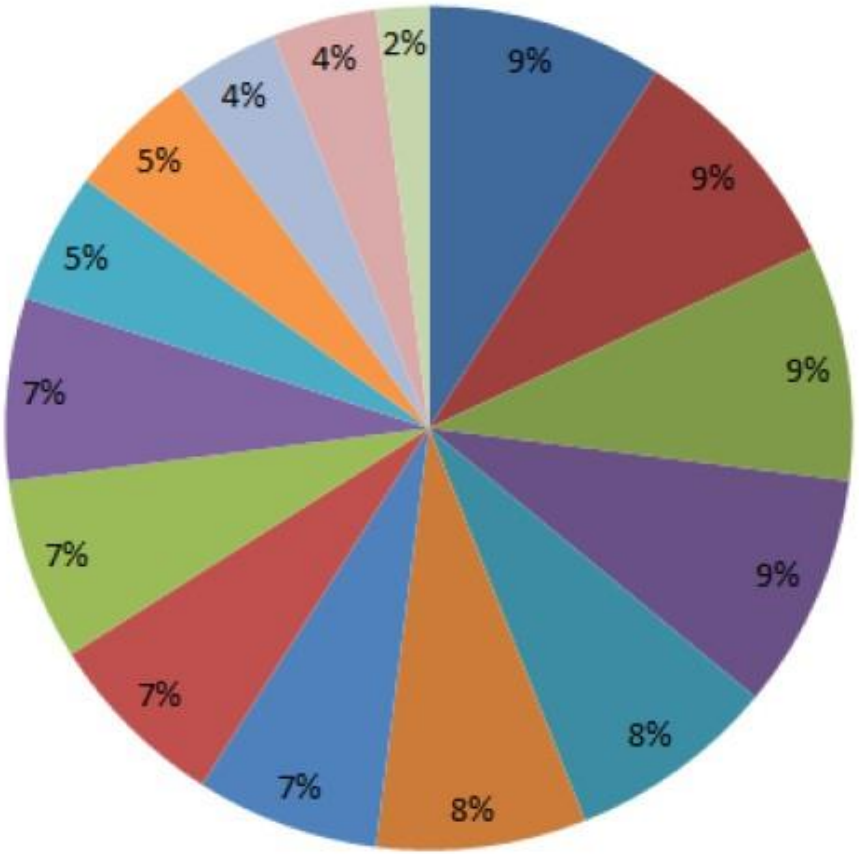


About 55-percent of respondents who experienced an operational disruption also reported challenges related to **organisational change management**.

Key issues included a lack of staffing resources, resistance to change, a lack of clear expectations, a lack of overall vision, internal resistance to change, lack of top management commitment, and inadequate user training.

More than 14-percent of respondents indicated that organisational issues – such as change resistance – were responsible for extended project timelines.

Major Challenges in ERP Implementation



- Lack of staffing resources
- Inadequate requirements definition
- Resistance to change
- Lack of clear expectations and goals
- Lack of overall vision
- Internal resistance to changing 'old' processes
- Unrealistic expectations of benefits and ROI
- Unrealistic budget
- Inadequate resources employed
- Lack of top management commitment
- Unrealistic timeframe expectations
- Inadequate user training
- A poor fit between software and user procedures
- Poor ERP package selection
- Other

Source: Panorama Consulting's 2014 ERP Report

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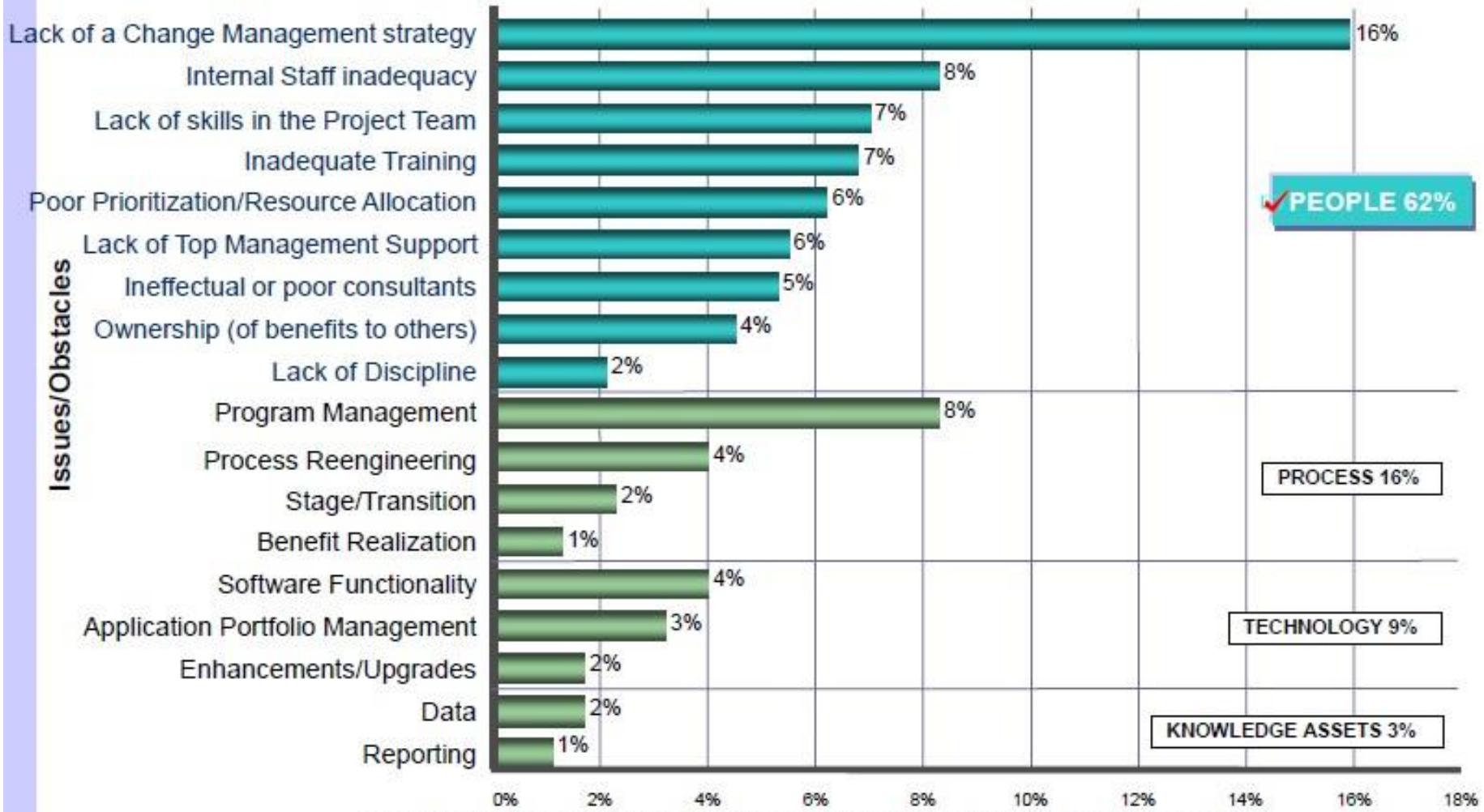
Top Issues Organizations Face During Enterprise Resource Planning



Source: Deloitte Consulting and Benchmarking Partners (Based on a study of 62 companies that have gone live with an ERP system)

Note: Rounded percentages; not all categories are shown as bars

✓ **Directly related to Orgn Change Mgmt & Training**

What impede a successful outcome

- Lack of leadership support
- Lack of communication and support
- Lack of user education and training
- Lack of Change management strategy throughout the implementation
- Resistance to change by stakeholders
- Management do not support the implementation
- End-users not ready for the change
- Organisational readiness
- High turnover of key trained personnel
- Technological problems – configuration and modification difficulties
- Cultural issues
- Lack of user involvement

Changes in ERP implementation – how to manage these

- enterprise wide business process changes
- job redesign/upskilling
- reduction in head count
- change in climate and culture
- change in relationships – political and power structures
- project team skills
- consultant skills
- training needs
- managing risks

How people adapt to this change positively or negatively is affected by

HOW CHANGE IS MANAGED

Quotable Quotes

"Not everyone believes that using IT to drive organisational change needs a special approach.

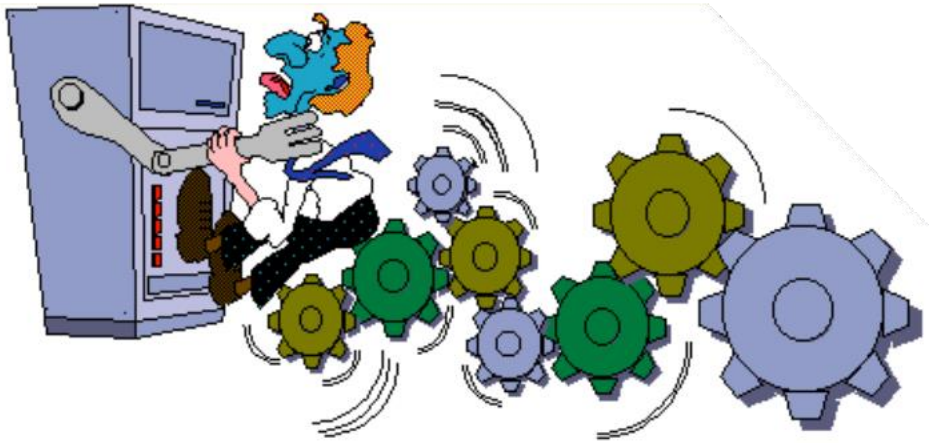
Yet experts estimate that as much as 75% of organisational change efforts involving technology fail (even when the technology performs acceptably). This is due to people's negative reactions to changes in their work, organisational business processes and the technology they use.

(Markus, 2004, p5)

"… I used to believe that human resource issues were fluffy and insubstantial, an afterthought. The only things that I believed mattered were technology and hard design. I've learned that what I considered hard or difficult is, in fact, the 'easy stuff'.
The technology issues are the easiest to deal with and don't usually make the most difference."
Dr Michael Hammer, MIT Professor of Computer Science, 1993

Do People Fear Change?

- The pace of change has increased considerably - particularly with the advent of the Internet and the rapid deployment of new technologies and new ways of doing business
- In general, people fear change.
- Organisational change management helps organisations empathise with employees' fears and provide them with ample information about project goals and ongoing progress.



Managing Change

- *Study by Stein et al (2003) asked respondents to identify the best example of change management they have been involved in.*
- A summation of responses identified the following best practices:
  - Keeping staff informed by communicating changes and the need for these changes
  - Training staff before during and after implementation
  - Using staff as expert users and trainers
    - staff could relate to them – Train the trainer approach
  - Training manuals which are easy to follow
  - Users of the system form part of the process
  - Employ a variety of change strategies

Ref: Stein, Hawking & Foster, (2003). CM: The real struggle for ERP Systems

Key Training Issues

- Identify strategies to manage stakeholders
  - Needs analysis /deskilling /up-skilling
  - appropriate trainers and training with appropriate documentation with ongoing support
- Standardised training
  - Consultant attribute – Transfer of knowledge/Train the trainer
  - Trainer attributes
- Training needs analysis
  - Identify training needs based on the business process changes to their job role and the amount of contact with the new system
  - Identify different stakeholder requirements
  - analyse prospective attitude issues that could negatively impact on the implementation
- Post implementation review based on business case outcomes (timings and expectations)

Key points to note when managing change

- keep explaining why we are changing
- where possible, involve your team in decision making
- minimize uncertainty
- engage your legacy system & process experts early
- be as transparent as possible
- create learning opportunities for your team
- communicate the threat of not changing
- keep listening to your people's concerns
- celebrate shifts towards the desired state

Ref: ©2015 Better Business Learning Pty Ltd (trading as 'Change Activation')

How people react to change

20%	60%	20%
Always resist change	Need to be convinced & wait to see which way wind is blowing	Actively embrace change
Ignore	Main focus of communication & must be won over	Harness them & temper their expectations & must include leadership

Changing employees perceptions

Very, very slow to change

Can cause disruption

May leave the system rather than change

They have usually been with the company for a long time

Your target!

Move through the personal change journey quickly

Become your evangelists – change champions

SMEs

Process owners

Organisational Change Management Best Practices

1. Customise training and communications

- Communications and training should be immediately applicable to your organisation's specific situation

2. Assess change readiness

- Measure and identify the root causes for organisational resistance.
- Having a series of online surveys and focus groups to gauge employee acceptance and other organisational issues

3. Convert process owners

- Identify process devotees: individuals who have brought value on the processes they have developed.
- Target them as early as possible to get their buy-in and support

Organisational Change Management Best Practices (cont'd)

4. Top management buy-in and supervision

- A changed process needs proper supervision and accountability
- Buy-in must come from the top down.
- Usage must be consistent and consistently enforced.

5. Don't sweat the small stuff

- The technical issues are much easier to solve than the internal issues related to personnel and their on-the-job tasks
- Do not focus on the software at the expense of the people and the processes who will drive overall organisational success

Ref: Panorama Consulting's 2014 ERP Report: ORGANISATIONAL CHANGE MANAGEMENT
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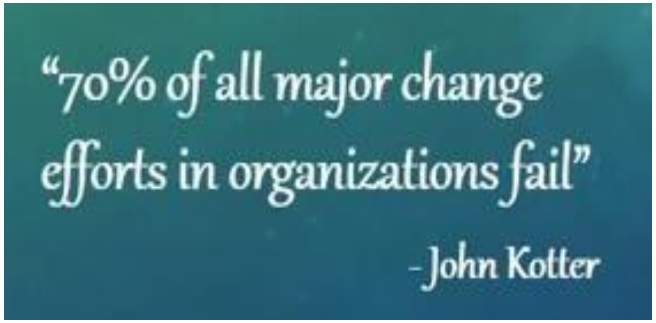
Top 10 contributing factors to the failure of change management

1. An utter lack of a plan to guide the change
2. Failure to define a clear rationale for the change
3. Ignoring culture
4. Weak follow through by sponsors
5. Not investing resources in the change effort
6. Gap in change agent skills
7. Haphazard communication
8. Fear of feedback
9. Declaring success too early
10. Neglecting to reinforce the change



Kotter's 8 Step Process for Leading Change (2015)

- Konosuke Matsushita Professor of Leadership Emeritus at the Harvard Business School
- Introduced the 8-step change process in his 1995 book, "Leading Change"
- Expert on the topics of Leadership & Transformation
- Co-founder of Kotter International
- Author of 12 best-selling books
- Graduate of MIT & Harvard

Kotter's 8 Step Process for Leading Change

Step 1: Create a sense of urgency

- Top leaders must describe an opportunity that will appeal to individuals' heads and hearts and use this statement to raise a large, urgent army of volunteers.
- Identify, articulate and communicate the need for change

Step 2: Build a guiding coalition

- A volunteer army needs a coalition of effective people — coming from its own ranks — to guide it, coordinate it and communicate its activities.
- Put together a group of 3 – 5 to be change leaders
- The group must trust each other and be moving in the same direction

Kotter's 8 Step Process for Leading Change

Step 3: Form a strategic vision and initiatives

- Dr. Kotter defines strategic initiatives as targeted and coordinated "activities that, if designed and executed fast enough and well enough, will make your vision a reality."
- The better people can envision where they are going, the more they can focus on specific initiatives that will make that vision a reality.

Step 4: Enlist a volunteer army

- Large-scale change can only occur when very significant numbers of employees amass under a common opportunity and drive in the same direction.
- Build excitement around the initiative and develop a feeling that one "Wants To" (not "Has To") contribute.

Kotter's 8 Step Process (cont'd)

Step 5: Enable action by removing barriers

- By removing barriers such as inefficient processes or hierarchies, leaders provide the freedom necessary for employees to work across boundaries and create real impact – empowering employees.

Step 6: Generate short-term wins

- Wins are the molecules of results. They must be collected, categorised, and communicated — early and often — to track progress and energise your volunteers to drive change
- Generating and celebrating wins along the way is vital to acceleration towards and focus on the goal..

Kotter's 8 Step Process (cont'd)

Step 7: Sustain acceleration

- Change leaders must adapt quickly in order to maintain their speed.
- Set goals to continue building on the momentum.

Step 8: Institute change

- To ensure new behaviours are repeated over the long-term, it's important that to define and communicate the connections between these behaviours and the organisation's success.
- Anchoring new approaches in the culture

Summary

- Integration as an important factor in improving business performance
- Top Traits of a successful ERP Implementation
- Explore the key integration issues – data & system integration
- Discuss Configuration Management and its importance
- Identify the main drivers for Master Data Management
- Explore the benefits of data unification and data integration
- Checklist for integration

Summary

- Change is pervasive in our society and a fact of life in organisations. Change management is about modifying or transforming organisations in order to maintain or improve their effectiveness.
- While organisational change management is a critical component of a successful ERP project, organisations spend too little time and money on activities that ensure maximum buy-in and benefits realization.
- The impact of not devoting sufficient effort to these activities is profound, and must not be underestimated.
- Organisations must shift their focus away from the technical aspects of implementation and towards the things that really count: making sure end-users and stakeholders have taken personal responsibility for making the implementation a success.

End of Lecture 10

References:

- Kotter, J. (July 12, 2011). "Change Management vs. Change Leadership -- What's the Difference?"
- Kotter's 8 Step Organisational Change Model: https://www.youtube.com/watch?v=LxtF4OXzhyI
- Linthicum, D.S. (2000). Enterprise Application Integration. Addison-Wesley
- Panorama Consulting Solutions (2014). Panorama Consulting's 2014 ERP Report: organisational Change Management
- Paul Brown (2011). A brief Introduction to Change https://www.youtube.com/watch?v=3Jk6clmMycI
- SL Integration Buyers Guide https://media.bitpipe.com/io_14x/io_141919/item_1674462/SL_Integration_Buyers_Guide.pdf
- Stein, Hawking & Foster, (2003). CM: The real struggle for ERP Systems
- Who moved my cheese? http://www.youtube.com/watch?v=7D1CQ_LOizA&feature=fvwrel

FIT3138 Exam

- Using the eAssessment platform
- Duration 2 hours and 10 minutes
- This is a **closed book** exam
- Answer **ALL** questions in **Section A** and **4 out of 6** questions in **Section B**.
- This exam is divided into **2** sections:

  Section A consists of **1** question (with **5** sub-questions) and is worth **20** marks.

  Section B consists of a choice of **6** questions and is worth **40** marks.

  Please answer only **4** questions in Section B.
- Check Allocate+ for the date and location

FIT3138 Exam

- Covers all theory from Lectures, Tutorials and Assignments.
- No questions relating to the detailed steps in the SAP workshops, however the theory of the processes involved is examinable.
- A mock exam will be available during the Week 12 tutorial.
- Section A : Case Study
- Section B : 6 Questions, Choose any 4