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# Developing your Information Systems for Growth

Growing Gloucestershire Conference  
The Park Campus  
University of Gloucestershire  
June, 2007

Dr Martin Wynn  
The Business School  
University of Gloucestershire





## Presentation structure

- 1. Background: relevant models and research questions
- 2. Research findings
- 3. A process for IS strategy development and implementation
- 4. Checklist for IS strategy development





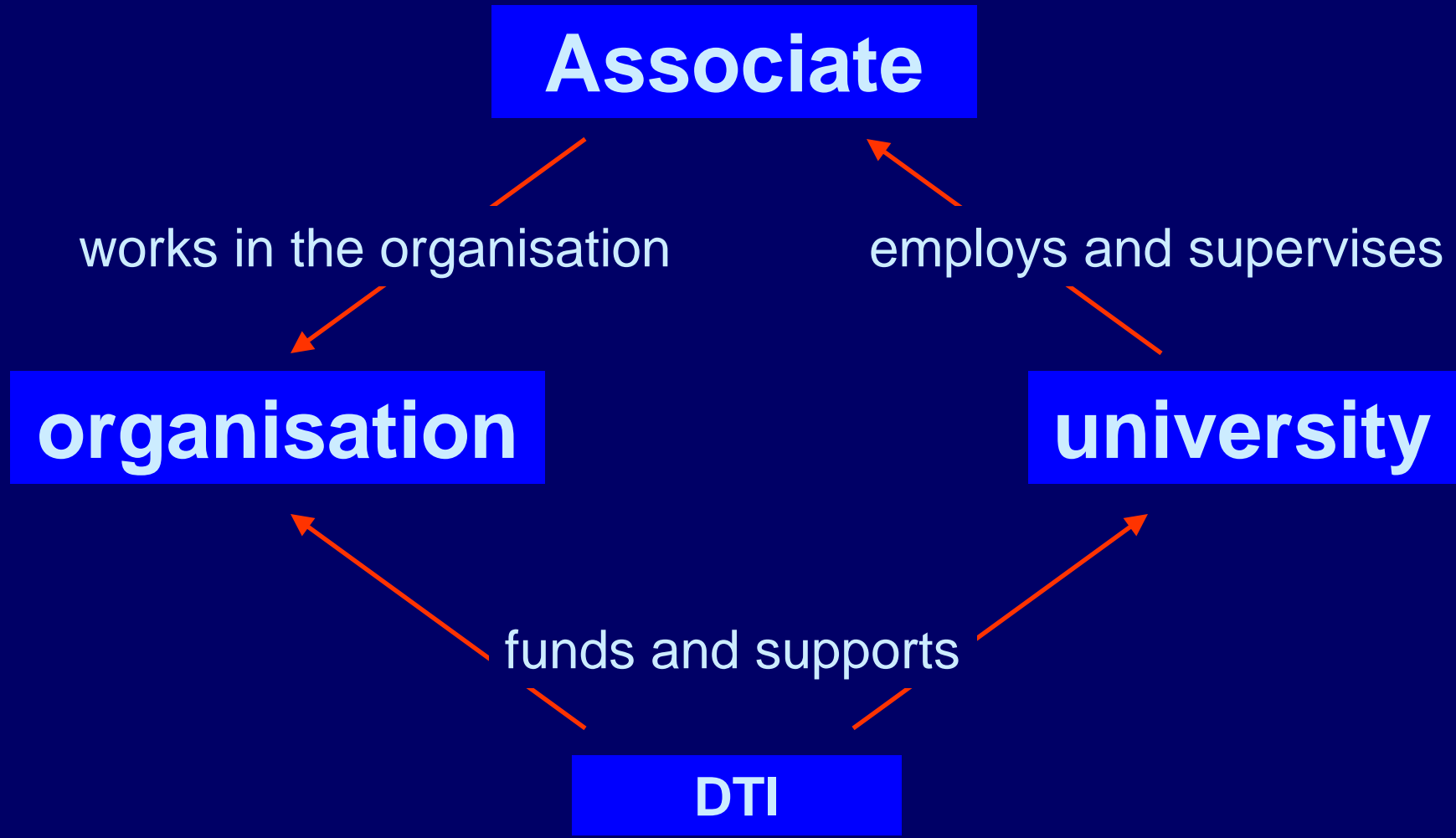
# 1. Background: relevant models and research questions



- 2003-2007, 8 companies developed and implemented new IS strategies
- These projects were implemented through the Knowledge Transfer Partnership (KTP) scheme, which funds project managers from the University to lead major change projects.
- Companies were growing – business plan targets typically aimed to double turnover and profits over 5 year horizon.
- Upgrading or replacing information systems was seen as key to sustained growth.
- Turnover at start of projects varied from £1.4m to £27m; current staff levels vary from 28 to 270



# The Knowledge Transfer Partnership (KTP) scheme



# IS Strategy Formulation

(after Earl)

*Top Down*

**Business Plans  
& Goals**

*Analytical*

**Deduction of  
IS needs by  
methodology.  
Identification  
of CSFs**

*Bottom up*

**Current  
Systems**

*Evaluative*

**Surveys &  
Audits of  
current  
investments  
in IT/IS to  
see if they  
can be  
improved.**

*Inside Out*

**IT/IS  
Opportunities**

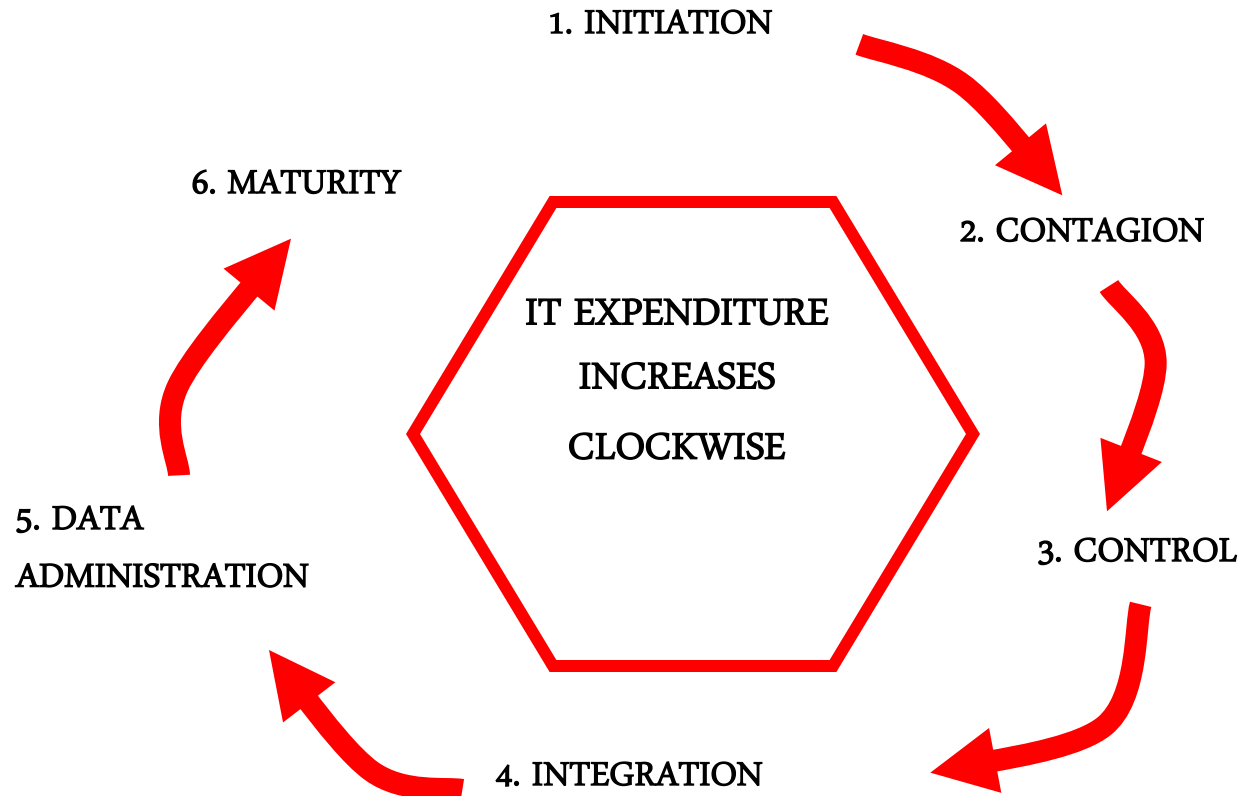
*Creative*

**Identify  
Opportunities  
offered by new  
IT/IS  
capabilities**

**STRATEGIC PLAN OF INFORMATION SYSTEMS APPLICATIONS**



# Nolan's 6 stage model of the growth of the IS/IT function over time





# RESEARCH QUESTIONS



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- How has IS strategy been developed and how does this relate to Earl's model?
- What were the main software packages selected and are there any obvious similarities?
- Where do the case studies fit in terms of Nolan's model?
- What do the cases tell us regarding IS strategy development and implementation?





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## 2. Research findings



- Some packages/point solutions installed in past 5 years:
  - Sales order processing, invoicing, ledgers (eg Sage)
  - CRM (eg Goldmine)
- Poor integration, with several versions of customer and product data.
- Lack of a clear database strategy – a mix of old databases (Foxpro, Btrieve, Access 97) and more modern (SQL)
- Some end-user databases and spreadsheets
- Management information difficult to extract; data inconsistencies





## IS Strategy: 3 Main Solutions

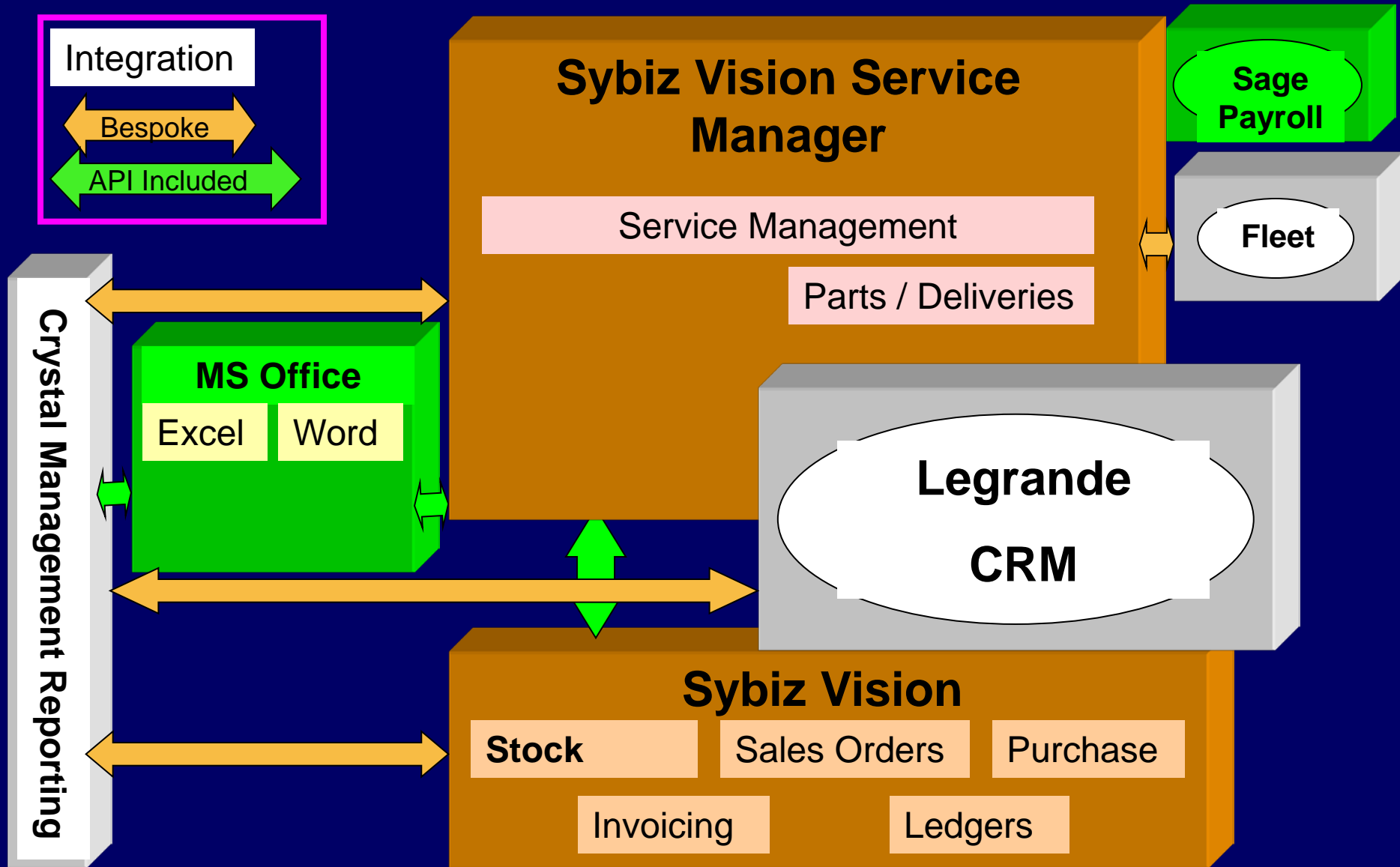
- 3 Integrated Enterprise Resource Planning (ERP) package from one vendor
- 4 New Point Solutions (especially CRM) plus upgrade of existing packages
- 1 Integration and improved reporting from current systems



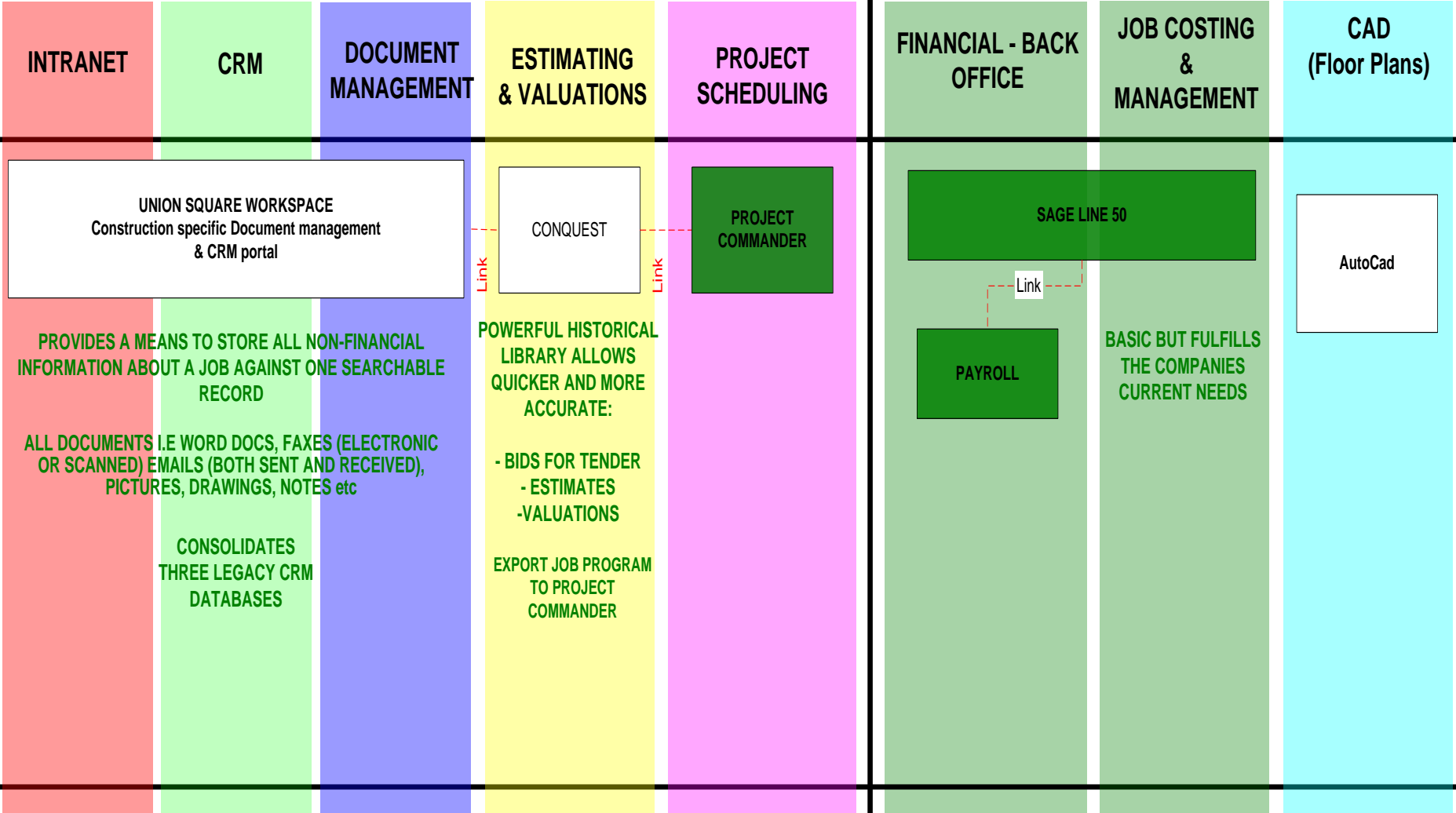
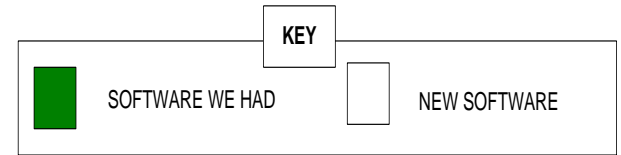
# INFORMATION SYSTEMS IMPLEMENTED

Company Sector	Staff	IS Strategy type	Systems/Software
Aerospace	180	Top down	Syteline ERP from Infor
Pharmaceuticals	270	Top down	EFACS ERP from Excel
Roof Manufacture	55	Top down	EFACS ERP from Excel
Construction	75	Top down/Inside out	Union Square CRM+Conquest Estimating+ Sage upgrade
Equipment Assembly & Sale	45	Bottom-up/Inside out	Vehicle Tracking system (Tracker) +Sybiz Vision Financials/Service upgrade + new CRM (Legrand)
Construction	40	Top down/Inside out	InfoView CRM + VPN + wireless technologies
Training Services	28	Top down/Bottom-up	Course Booker CRM + webportal + Sage Financials upgrade
Office Systems Design & Installation	48	Bottom-up	Upgrade Goldmine CRM and Sage Financials + Bespoke Reports & Interfaces in VBA + Improve data.

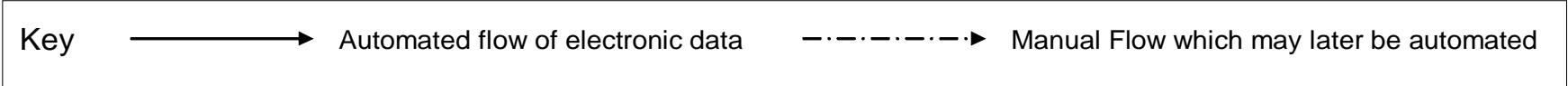
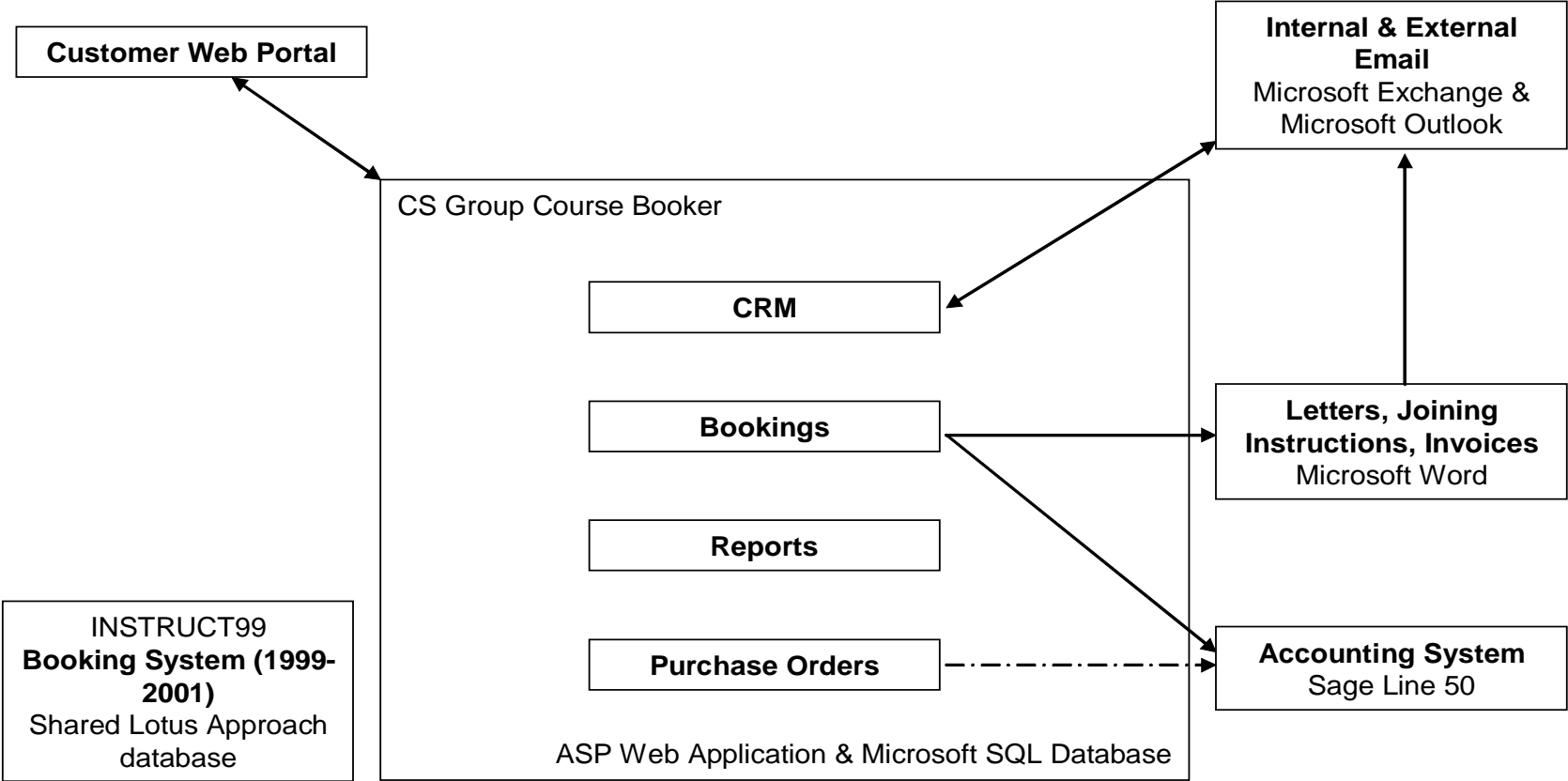
# Equipment Company: 2 New Point Solutions + Upgrades + Enhanced Reporting



# Final Selection

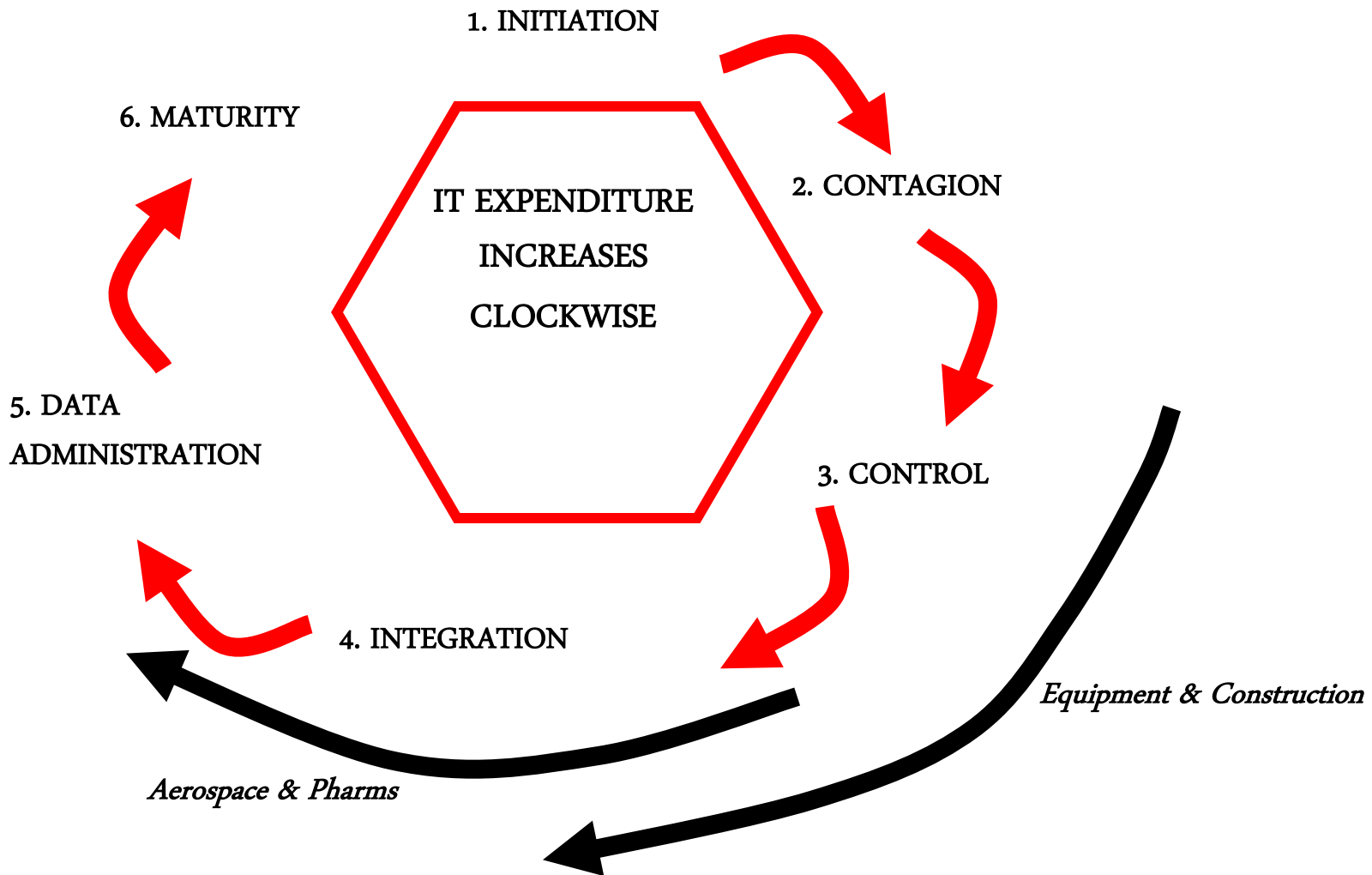


# System Diagram – New





# Progress on Nolan's 6 stage model





### 3. A process for IS strategy development and implementation



**IS STRATEGY  
FORMULATION -  
THEORY**

**BUSINESS STRATEGY &  
OBJECTIVES**

**New Business Plan  
& Corporate Vision**

**PROCESS ANALYSIS**

**Current Process Maps**

**PROCESS RE-ENGINEERING**

**New Process Maps**

**INFORMATION STRATEGY**

**Information Needs Analysis**

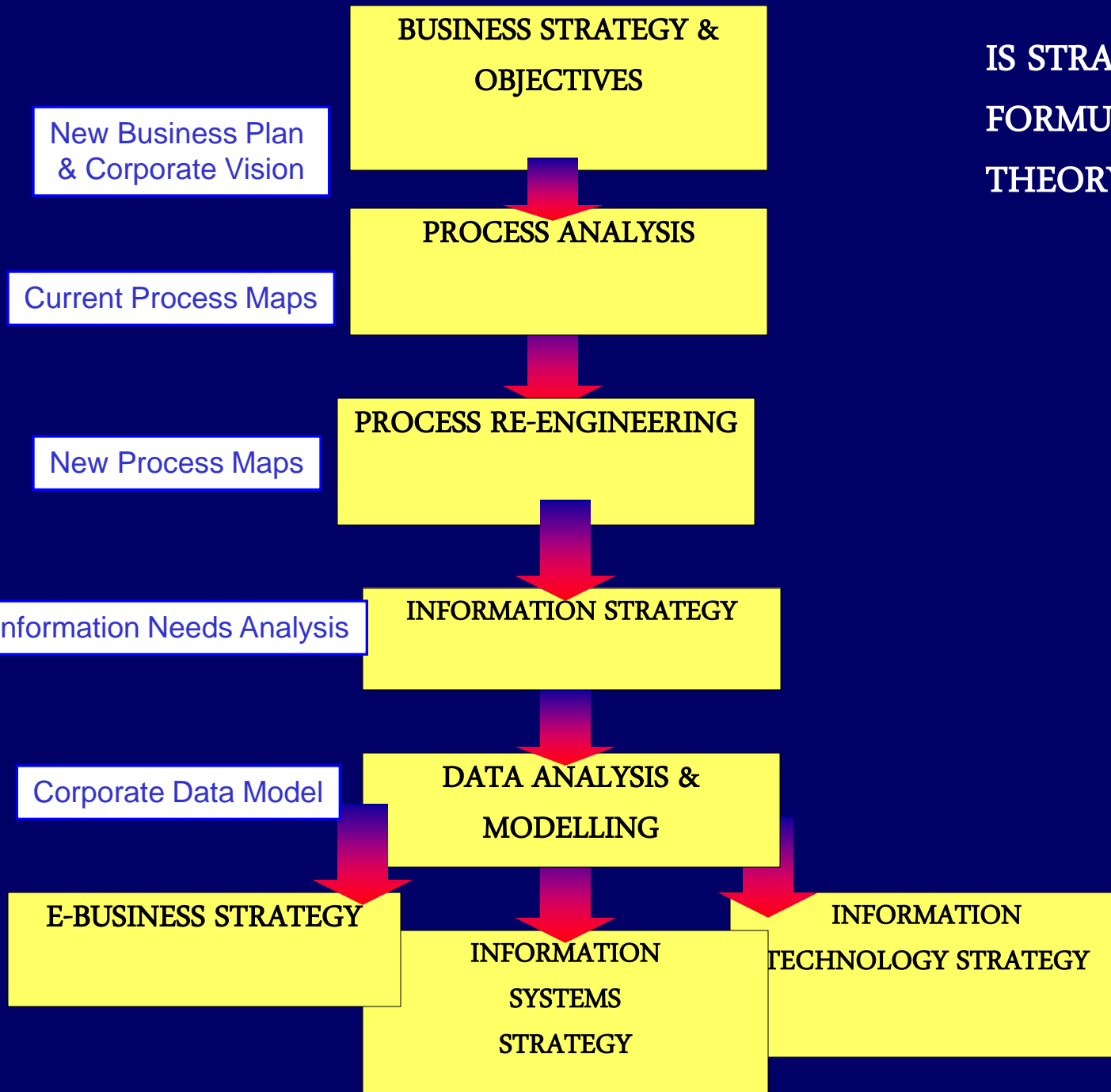
**DATA ANALYSIS &  
MODELLING**

**Corporate Data Model**

**E-BUSINESS STRATEGY**

**INFORMATION  
SYSTEMS  
STRATEGY**

**INFORMATION  
TECHNOLOGY STRATEGY**





- To do all this can take years
- Apply common sense – a lot is already in place
- Flexible application of tools and methods



# IS STRATEGY DEVELOPMENT & IMPLEMENTATION PROCESS

1

**UNDERSTAND BUSINESS PLAN &  
IDENTIFY MAIN BUSINESS PROCESSES**

2

**MAP CURRENT INFORMATION SYSTEMS &  
ALLOCATE SYSTEMS TO PROCESS AREAS**

3

**UNDERTAKE RED-AMBER-GREEN (RAG)  
ANALYSIS FOR CURRENT SYSTEMS**

4

**IDENTIFY KEY DATA ISSUES – CUSTOMER,  
PRODUCT (data quality, multiple maintenance)**

5

**IDENTIFY SOFTWARE PACKAGE OPTIONS**

6

**DEVELOP A BUSINESS CASE FOR EACH  
OPTION & PRESENT TO BOARD**

7

**DRAW UP & EXECUTE PHASED IMPLEMENTATION PLAN  
EMPLOYING COMMON SENSE PROJECT MANAGEMENT**



# INFORMATION SYSTEMS IMPLEMENTED

Company Sector	Staff	Turnover Increase (£m)	Annual Profit Increase from IS (£K)
		27 → 40	
Aerospace	180	5.6 → 10.7	90
Pharmaceuticals	270	6.8 → 7.4	720
Roof Manufacture	55		66*
		4.8 → 6.5	
Construction	75		74
		2.9 → 3.8	
Equipment Assembly & Sale	45		134*
		12.2 → 31.7	
Construction	40		950
		1.4 → 2.0	
Training Services	28		200*
		6.9 → 11.0	
Office Systems Design & Installation	48		800

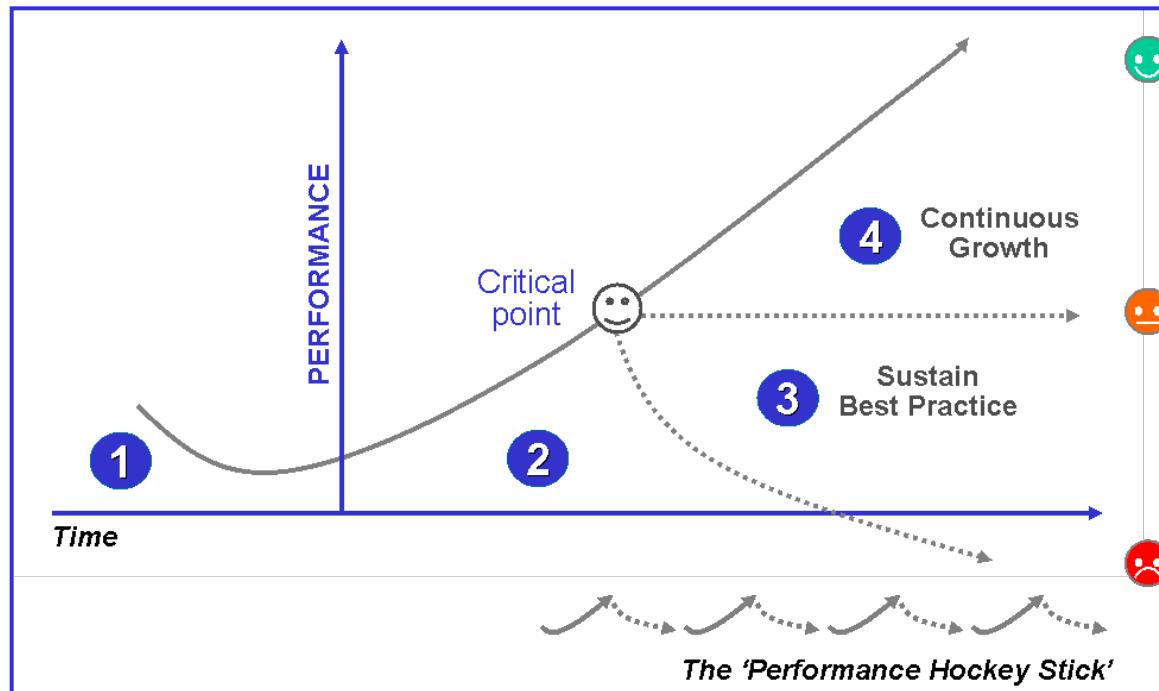
\* Forecasts tbc



# Step 1. Understand the corporate Business Plan and identify business processes



# Typical Business Performance in 5 Year Plan

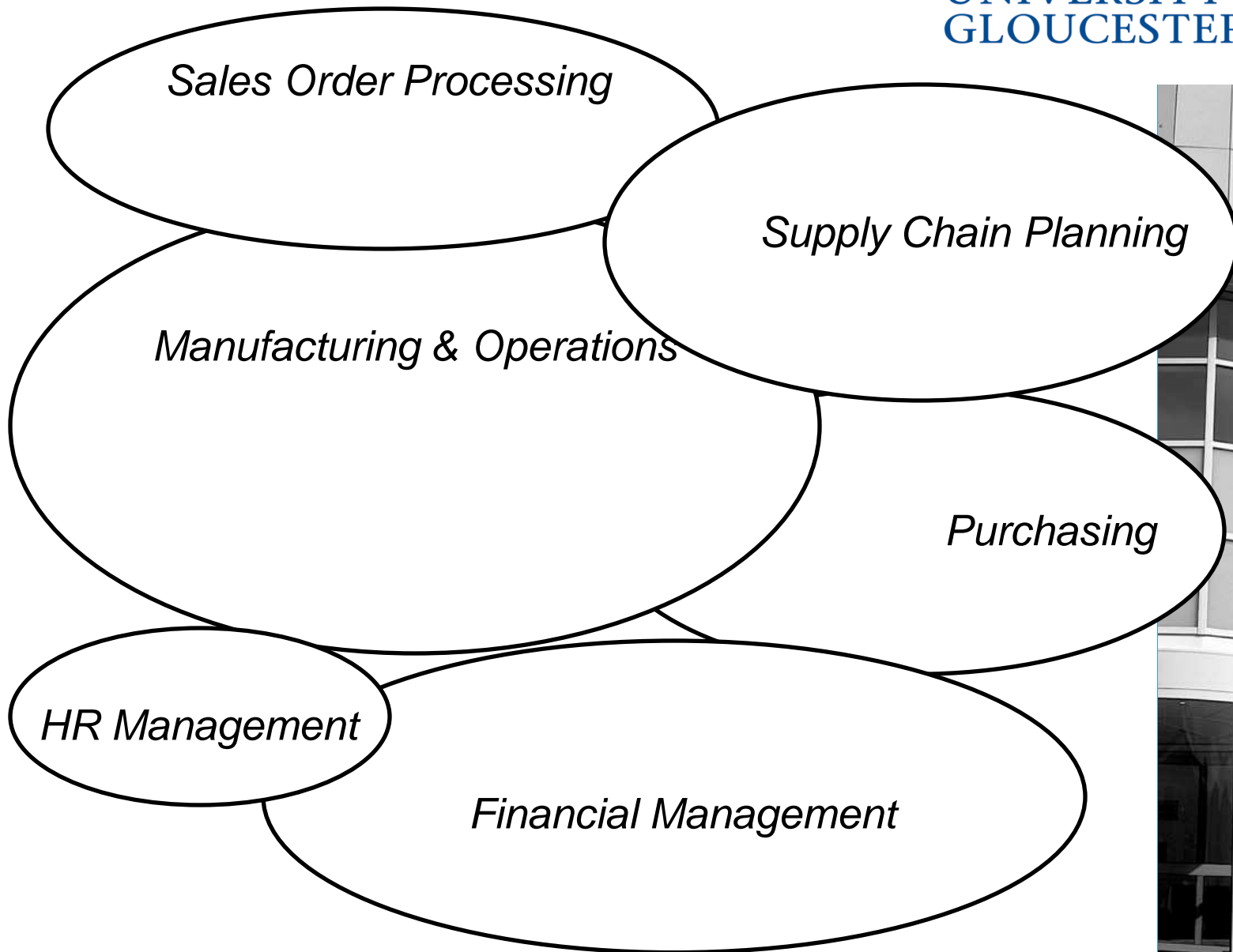


**Double Turnover and Profit over a 5 year period**





# Main Business Processes

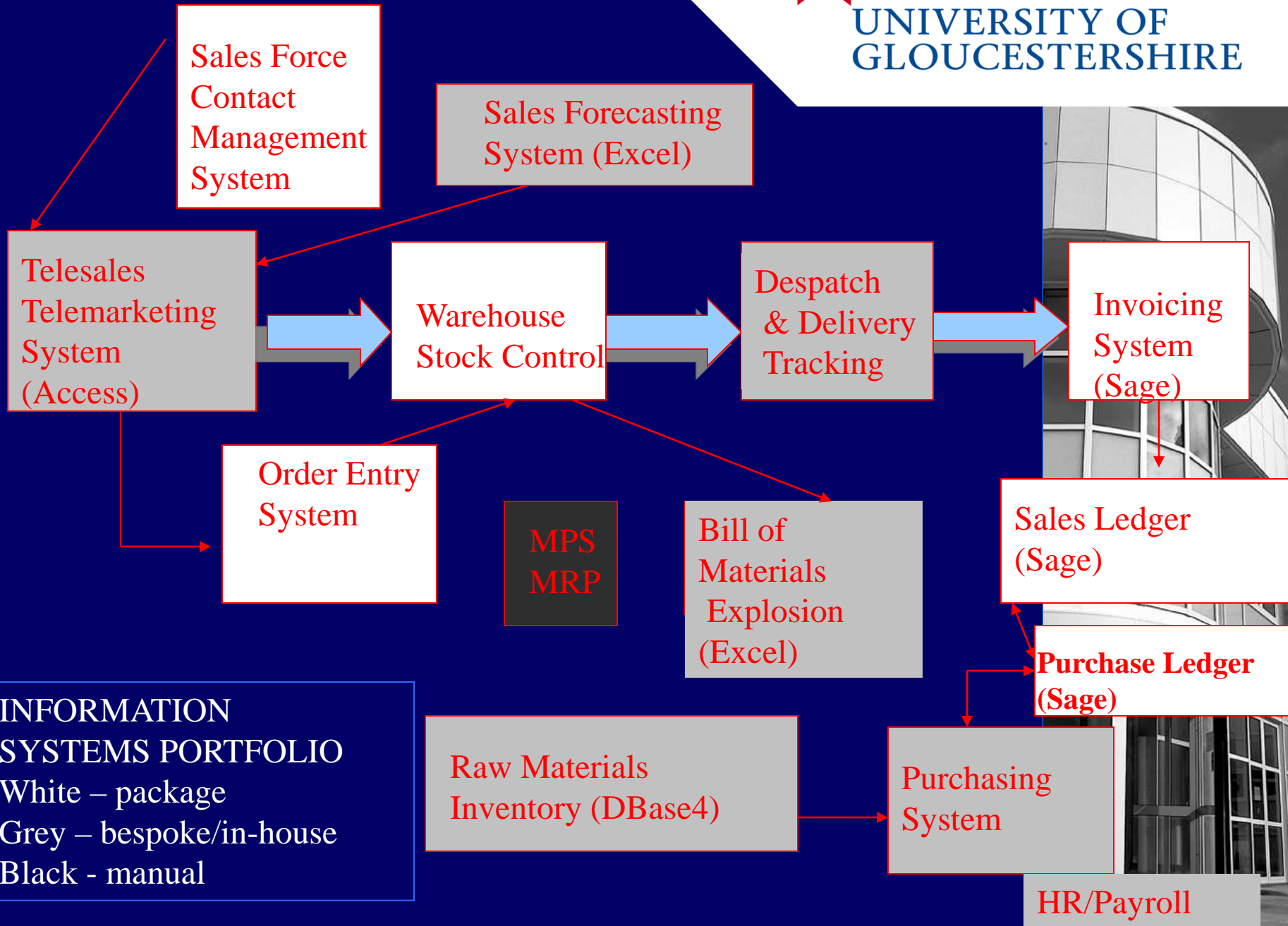




## Step 2. Map current information systems and allocate them to business processes



# What systems are used?





*Sales Order Processing*

Telesales/  
Telemarketing

Customer Contact  
Management

Order Entry

*Supply Chain Planning*

Master Production Scheduling

Warehouse Stock  
Control

Materials Requirements  
Planning

*Manufacturing &  
Operations*

Despatch & Delivery

Stores Inventory Control

*Purchasing*

Purchasing

HR/Payroll

*HR Management*

Invoicing

*Financial  
Management*

Ledgers





## Step 3. Undertake Red-Amber-Green (RAG) analysis of current systems

Green – Technically and strategically sound

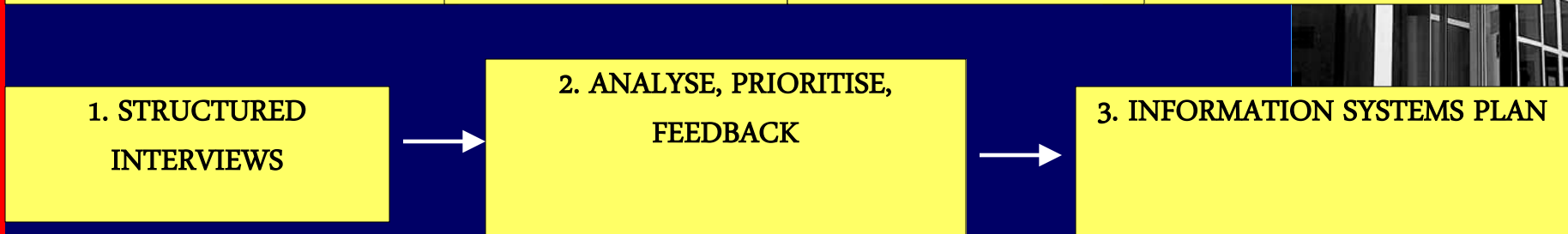
Amber – Possibly replace

Red – In need of replacement



# INFORMATION SYSTEMS STRATEGY DEVELOPMENT: INTERVIEW SENIOR MANAGERS

BUSINESS OBJECTIVE	CSF	INFORMATION REQUIREMENT	SYSTEMS IMPLICATION



*Sales Order Processing*

Telesales/  
Telemarketing

Customer Contact  
Management

Order Entry

*Supply Chain Planning*

Master Production Scheduling

Warehouse Stock  
Control

Materials Requirements  
Planning

*Manufacturing &  
Operations*

Despatch & Delivery

Stores Inventory Control

*Purchasing*

Purchasing

HR/Payroll

*HR Management*

Invoicing

*Financial  
Management*

Ledgers



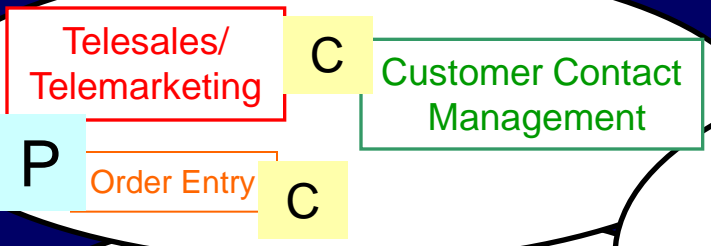


## Step 4. Identify key data issues

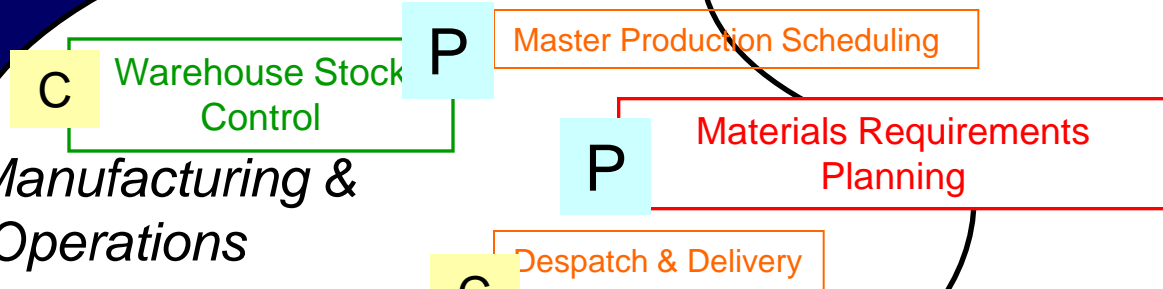




*Sales Order Processing*



*Supply Chain Planning*



*Manufacturing & Operations*



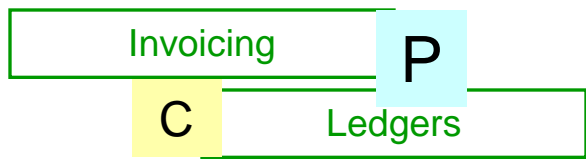
*Purchasing*



*HR Management*



*Financial Management*



C = customer data maintenance

P = product data maintenance





# Step 5. Draw up options for systems replacement



# Options include:

Implement a new ERP system (major change in line with business vision)

SELECTIVE SYSTEMS REPLACEMENT and  
UPGRADES (Point solutions)

MINOR AMENDMENTS (make the best of what you have)





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## **Step 6. Develop business cases for different options**



# Step 7. Implement the selected option - and be aware of possible problems:



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- BUDGET LIMITATIONS
- IT SKILLS SHORTAGE
- DEALING WITH LEGACY SYSTEMS
- SUPPLERS FAILING TO MEET DEADLINES
- IMPLEMENTING ORGANISATIONAL CHANGE
- USERS CHANGING THEIR MINDS
- INVOLVEMENT OF SENIOR MANAGERS
- LACK OF INTEGRATION WITH BUSINESS STRATEGY

Source: National Computing Centre Survey of IT Decision-Makers 2001



- Steering Group/Working Party representation
- Project Manager/User Manager
- User ownership of systems modules
- Process ownership
- Systems Testing
- System Training
- System Administration
- Manuals and Support Materials
- Newsletters and Communication materials (eg Intranet, E-mails)





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## 4. Checklist for IS strategy development



# IS Strategy Development



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- Get IT/IS referred to in the company Business Strategy or Business Plan (and get Board representation if possible)
- Work with the senior management team to identify information requirements
- Take a holistic, all inclusive approach to strategy development
- Maximise user involvement, sponsorship and ownership





# IS Strategy Checklist



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- Know and understand the new technologies & incorporate them into your strategy as appropriate (pilot and trial them)
- Don't take risks with technology choices
- Document your strategy and update it annually (or more regularly if appropriate)
- Know your senior management and understand their perspectives

