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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





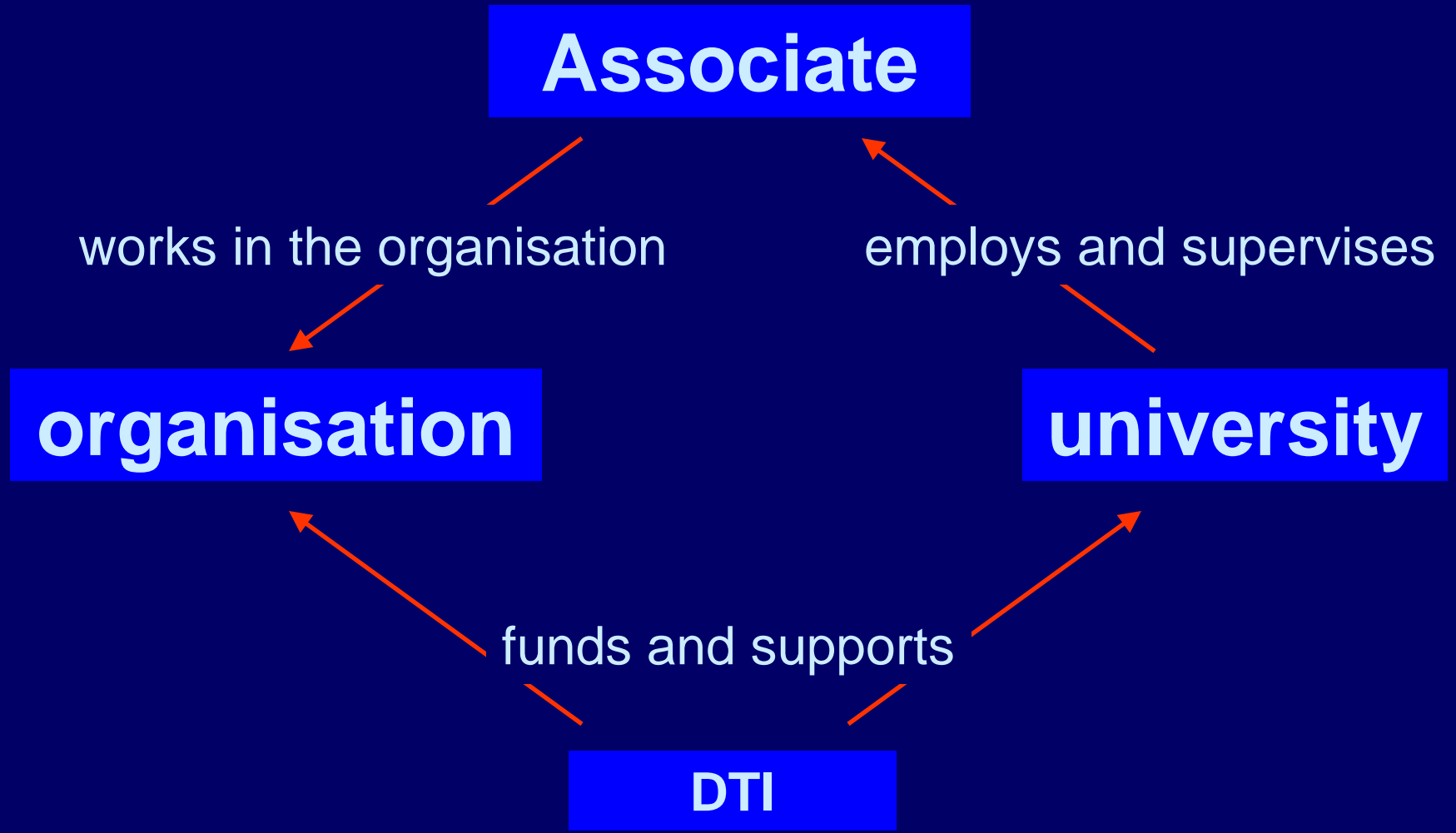
1. Background: relevant models and research questions



- 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**

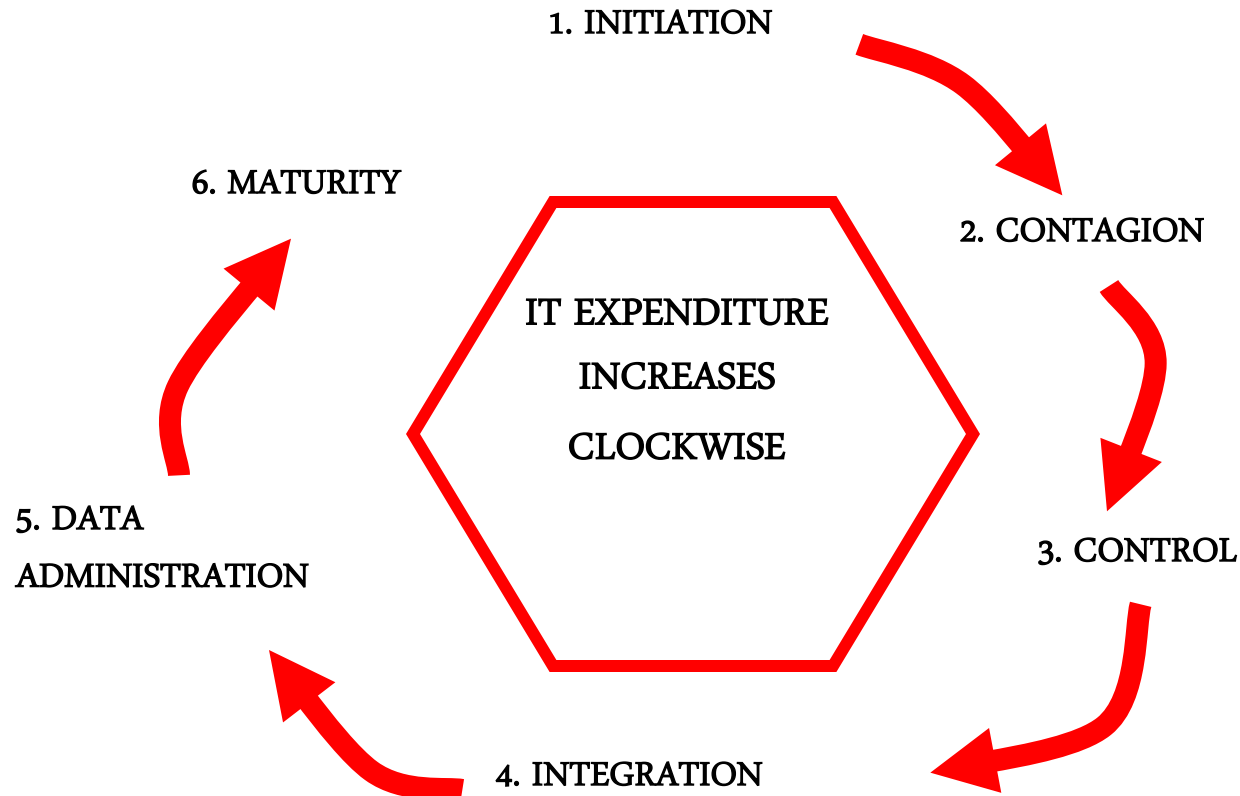
Creative

**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

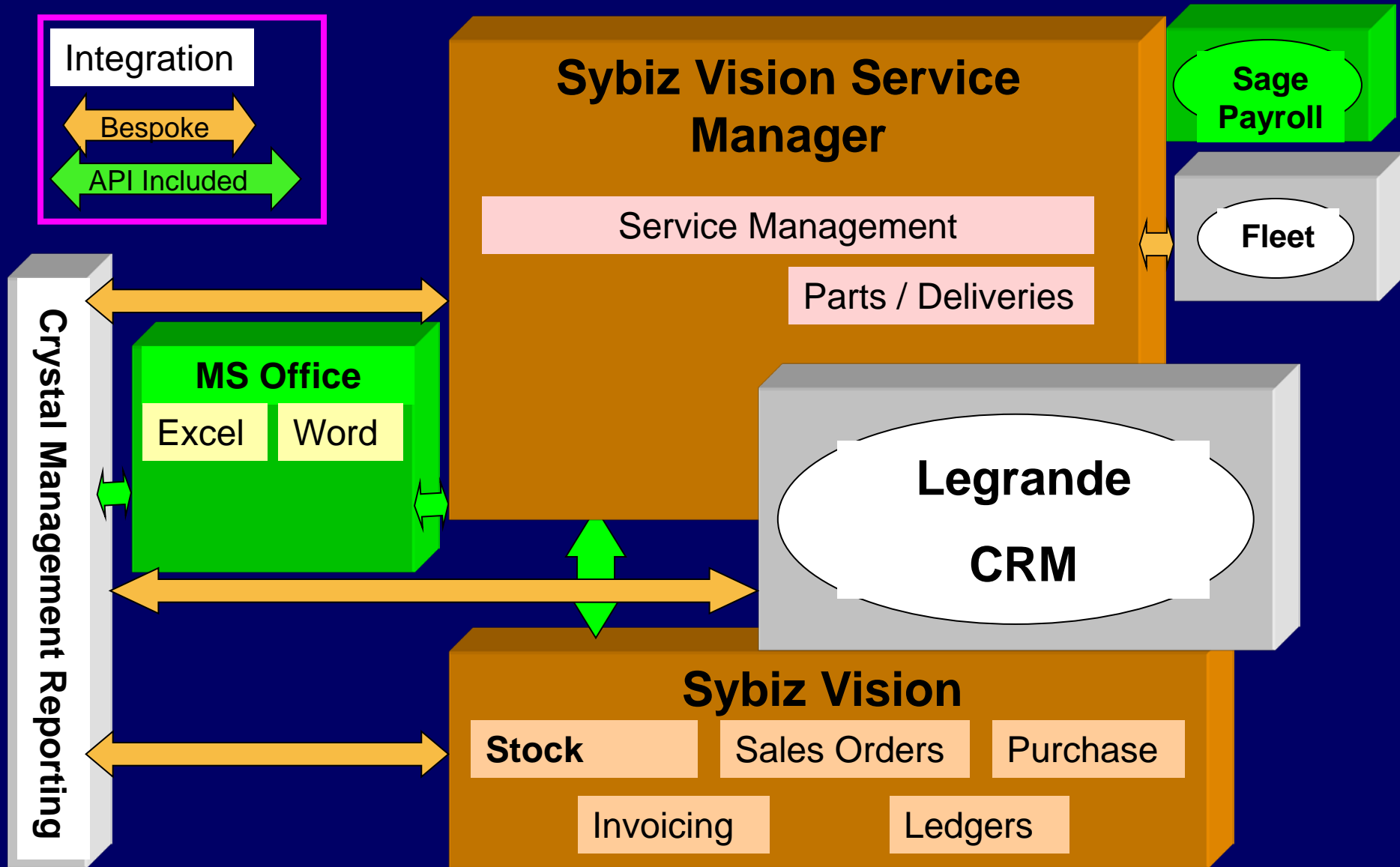
- 3 Integrated Enterprise Resource Planning (ERP) package from one vendor
- 4 New Point Solutions (especially CRM) plus upgrade of existing packages
- 1 Integration and improved reporting from current systems



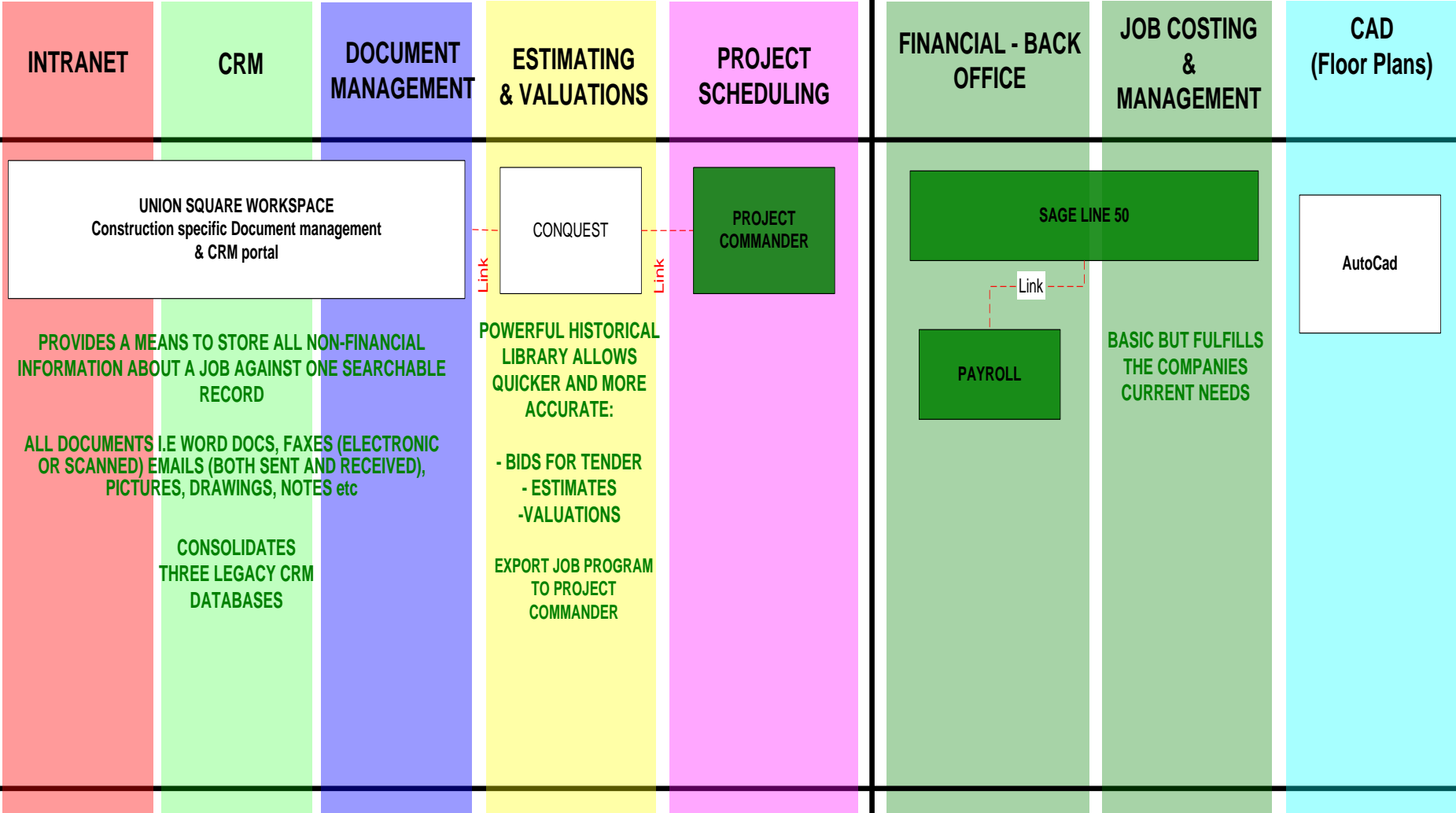
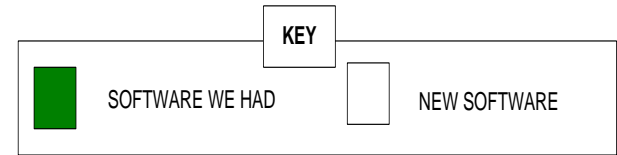
INFORMATION SYSTEMS IMPLEMENTED

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.

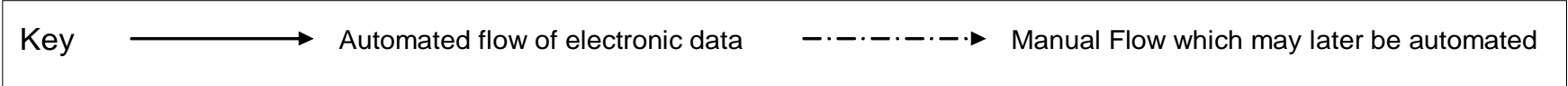
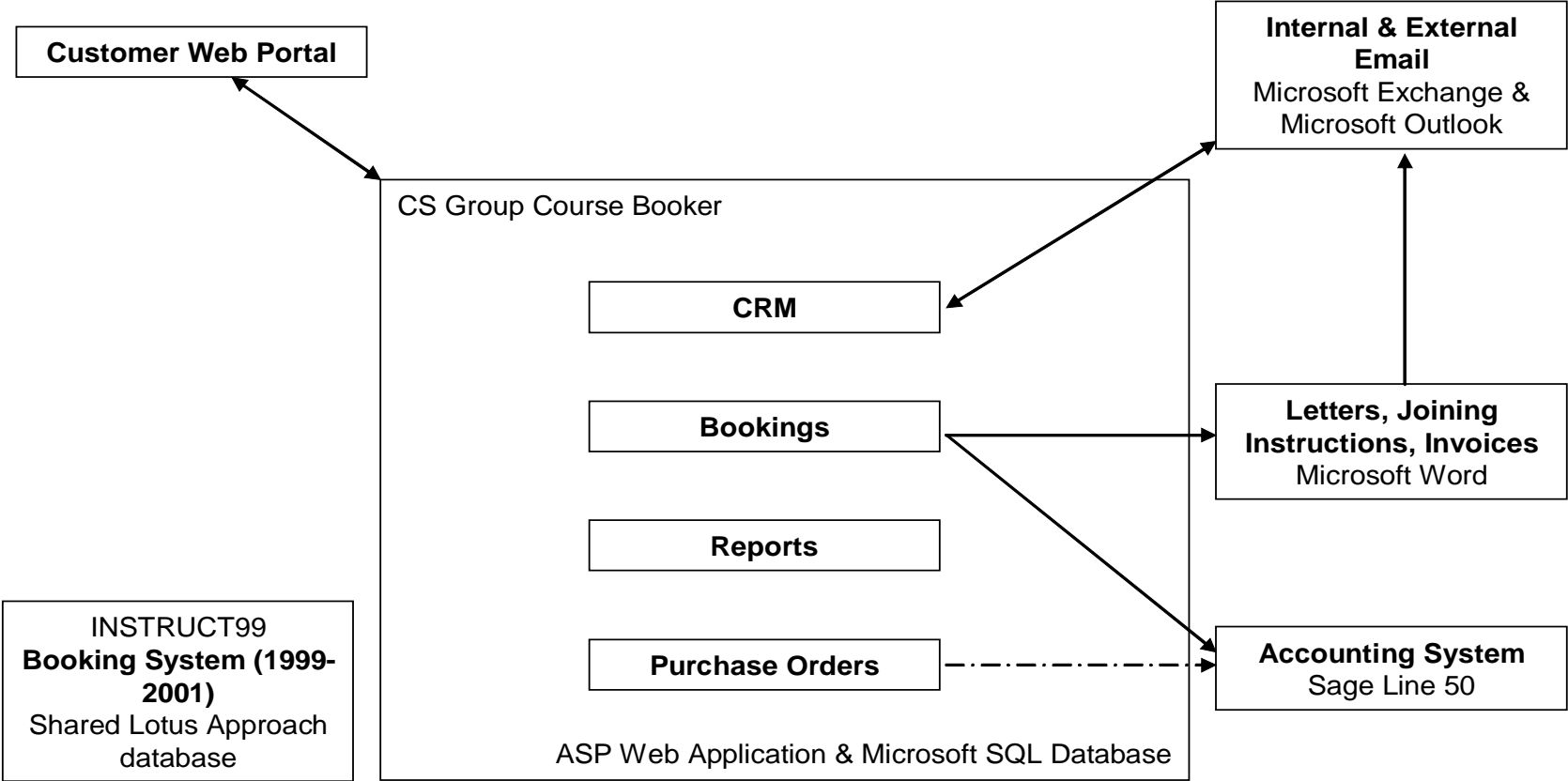
Equipment Company: 2 New Point Solutions + Upgrades + Enhanced Reporting



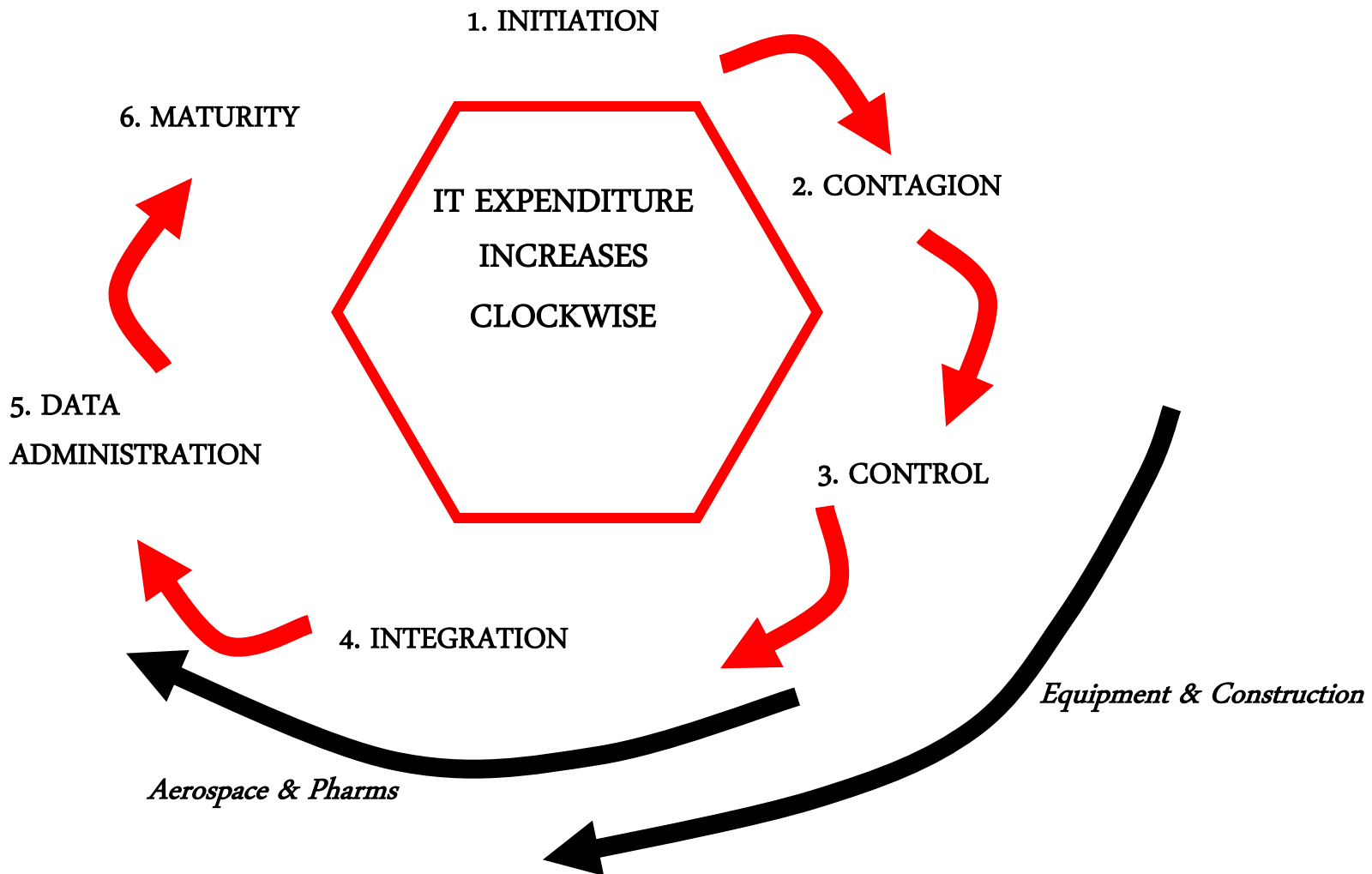
Final Selection



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

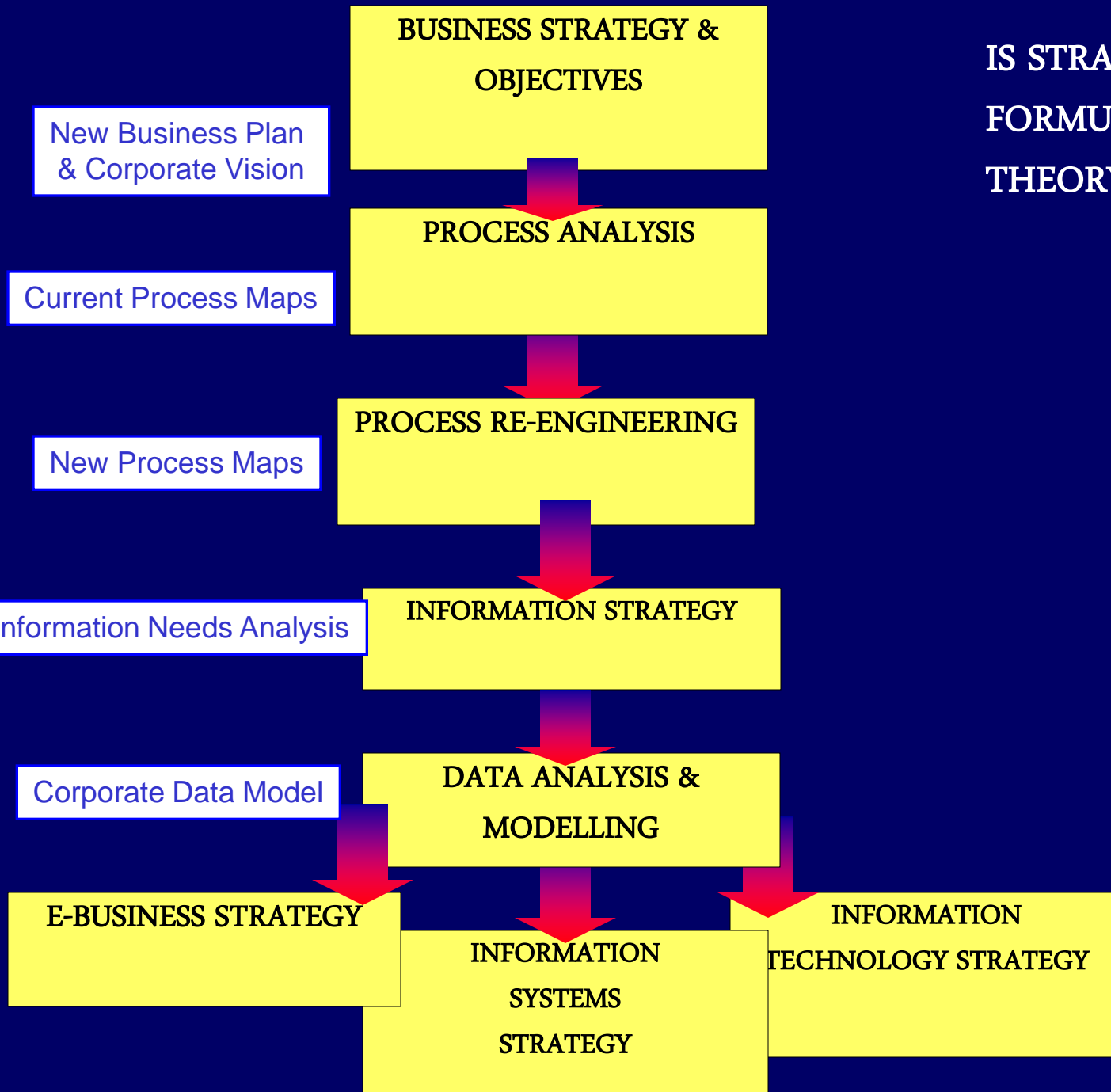
**DATA ANALYSIS &
MODELLING**

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

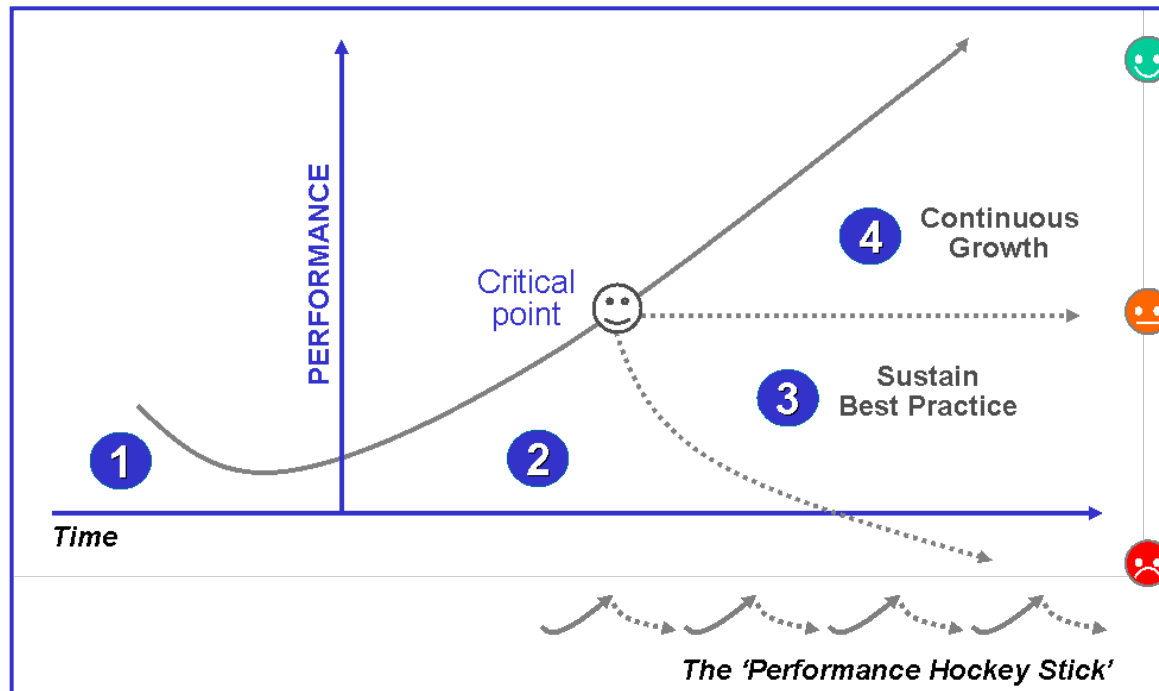
* Forecasts tbc



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



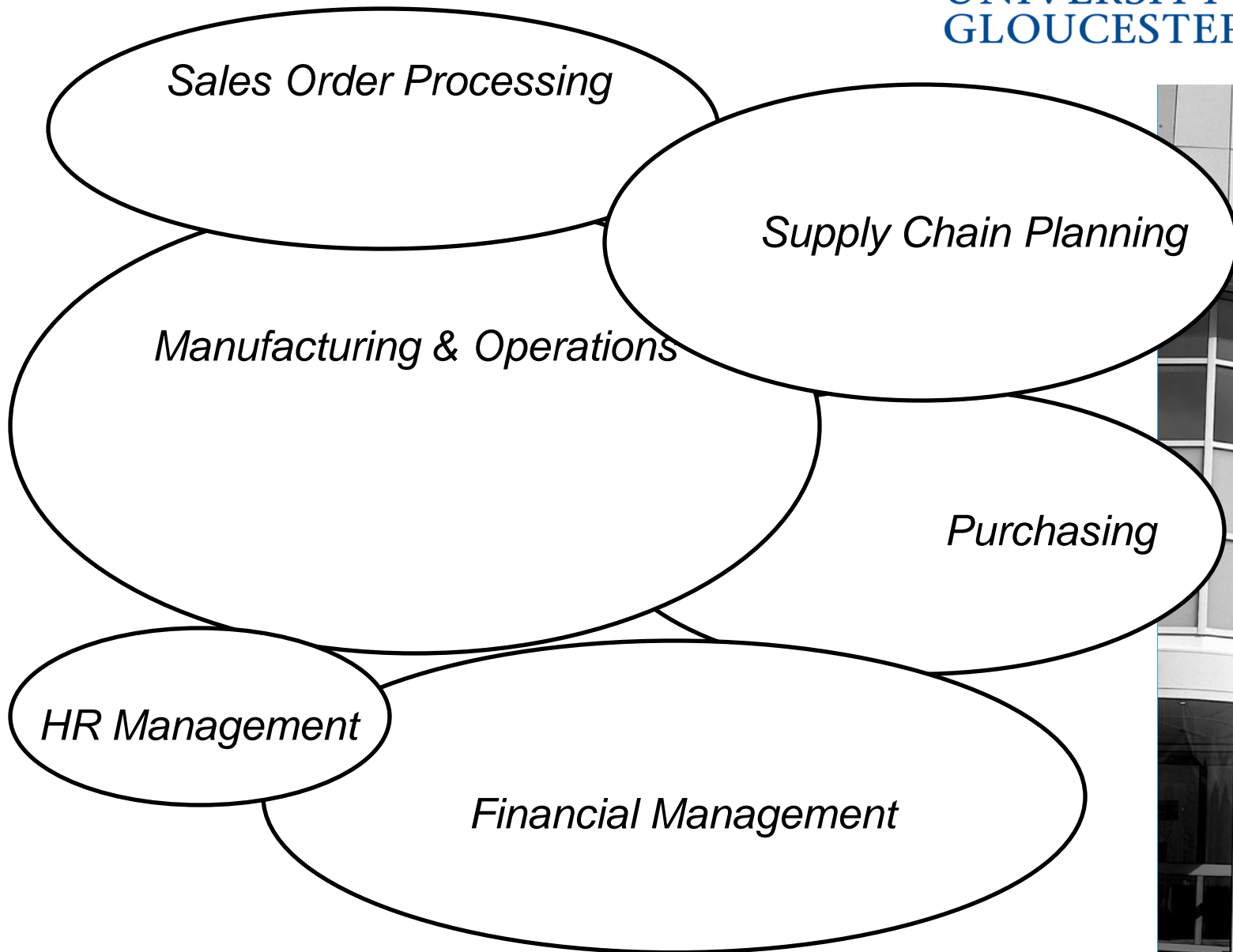
Typical Business Performance in 5 Year Plan



Double Turnover and Profit over a 5 year period



Main Business Processes

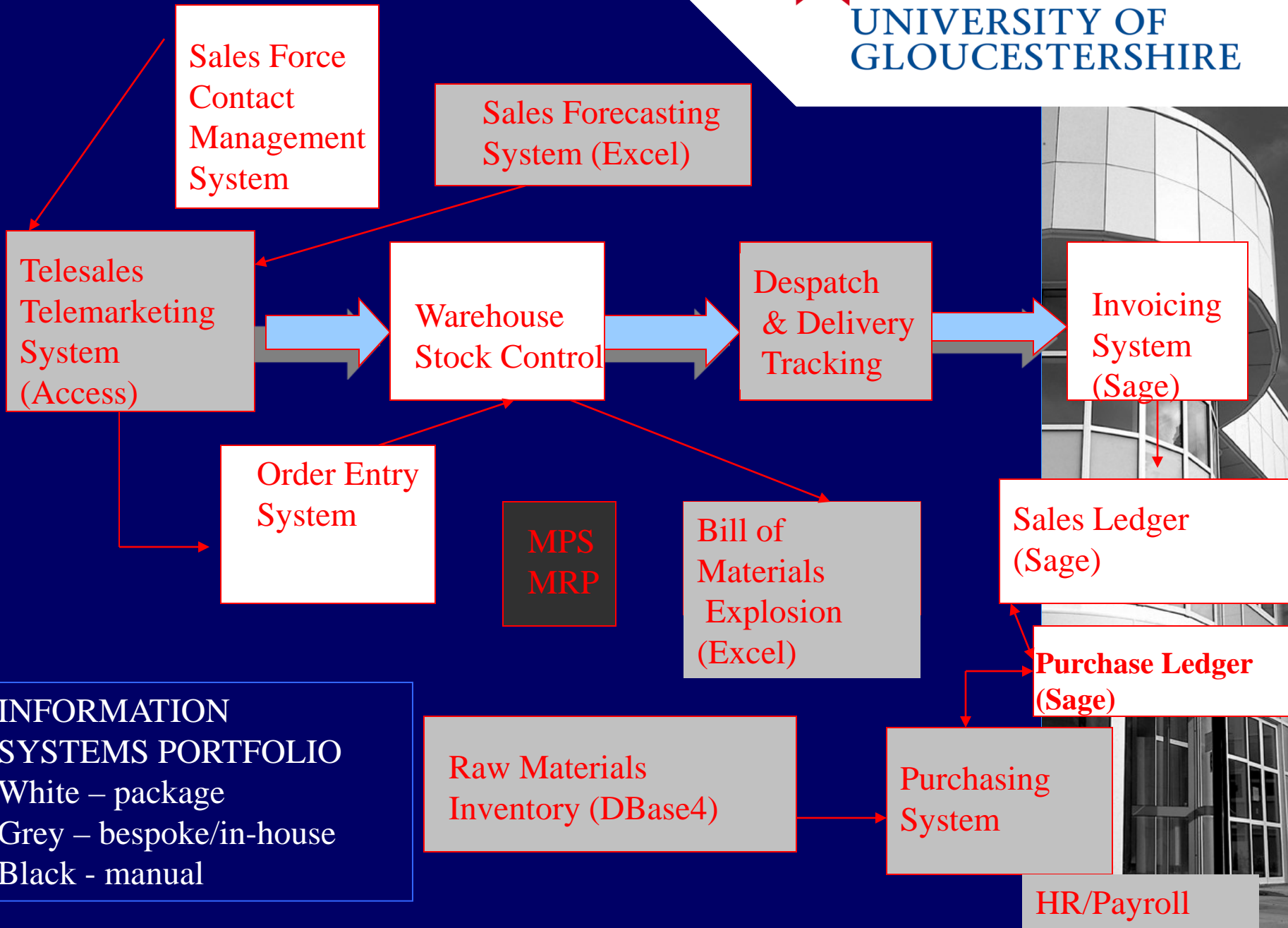




Step 2. Map current information systems and allocate them to business processes



What systems are used?



Sales Order Processing

Telesales/
Telemarketing

Customer Contact
Management

Order Entry

Supply Chain Planning

Warehouse Stock
Control

Master Production Scheduling

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

1. STRUCTURED
INTERVIEWS



2. ANALYSE, PRIORITISE,
FEEDBACK



3. INFORMATION SYSTEMS PLAN

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



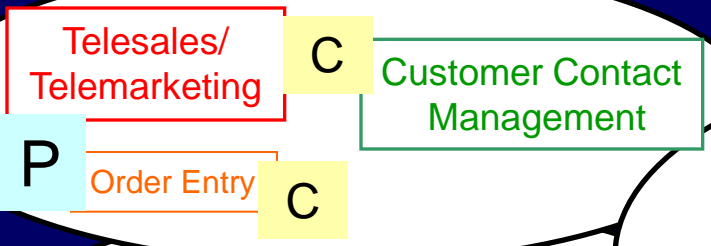


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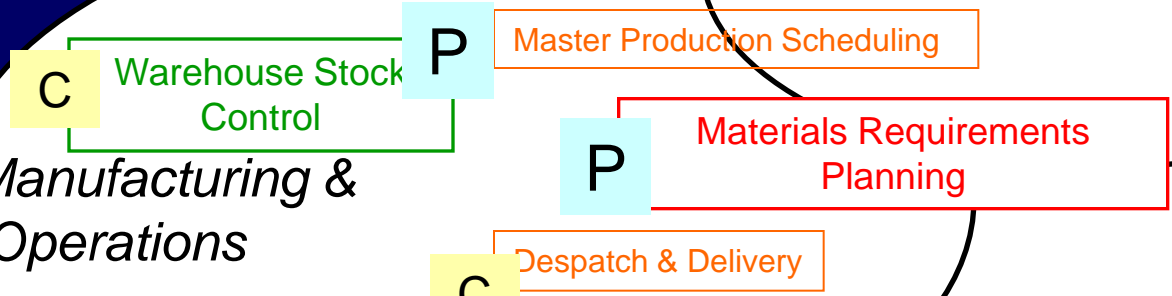
Step 4. Identify key data issues



Sales Order Processing



Supply Chain Planning



Manufacturing & Operations



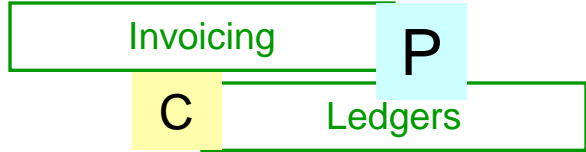
Purchasing



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)





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)





4. Checklist for IS strategy development



IS Strategy Development

- 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

