Developing your Information Systems for Growth

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The Park Campus
University of Gloucestershire
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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

- **Associate**
  - works in the organisation
  - employs and supervises

- **organisation**

- **university**

- **funds and supports**

- **DTI**
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

1. INITIATION
2. CONTAGION
3. CONTROL
4. INTEGRATION
5. DATA ADMINISTRATION
6. MATURITY

IT EXPENDITURE INCREASES CLOCKWISE

Source Nolan, 1979
RESEARCH QUESTIONS

- 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?
2. Research findings
Typical Systems Status in SMEs

- 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
<table>
<thead>
<tr>
<th>Company Sector</th>
<th>Staff</th>
<th>IS Strategy type</th>
<th>Systems/Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>180</td>
<td>Top down</td>
<td>Syteline ERP from Infor</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>270</td>
<td>Top down</td>
<td>EFACS ERP from Excel</td>
</tr>
<tr>
<td>Roof Manufacture</td>
<td>55</td>
<td>Top down</td>
<td>EFACS ERP from Excel</td>
</tr>
<tr>
<td>Construction</td>
<td>75</td>
<td>Top down/Inside out</td>
<td>Union Square CRM+Conquest Estimating+ Sage upgrade</td>
</tr>
<tr>
<td>Equipment Assembly &amp; Sale</td>
<td>45</td>
<td>Bottom-up/Inside out</td>
<td>Vehicle Tracking system (Tracker) +Sybiz Vision</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Financials/Service upgrade + new CRM (Legrand)</td>
</tr>
<tr>
<td>Construction</td>
<td>40</td>
<td>Top down/Inside out</td>
<td>InfoView CRM + VPN + wireless technologies</td>
</tr>
<tr>
<td>Training Services</td>
<td>28</td>
<td>Top down/Bottom-up</td>
<td>Course Booker CRM + webportal + Sage Financials upgrade</td>
</tr>
<tr>
<td>Office Systems Design &amp;</td>
<td>48</td>
<td>Bottom-up</td>
<td>Upgrade Goldmine CRM and Sage Financials + Bespoke</td>
</tr>
<tr>
<td>Installation</td>
<td></td>
<td></td>
<td>Reports &amp; Interfaces in VBA + Improve data.</td>
</tr>
</tbody>
</table>
Equipment Company: 2 New Point Solutions + Upgrades + Enhanced Reporting
Construction Co: 3 New Point Solutions + Upgrades

Final Selection

INTRANET

CRM

DOCUMENT MANAGEMENT

ESTIMATING & VALUATIONS

PROJECT SCHEDULING

FINANCIAL - BACK OFFICE

JOB COSTING & MANAGEMENT

CAD (Floor Plans)

UNION SQUARE WORKSPACE
Construction specific Document management & CRM portal

PROVIDES A MEANS TO STORE ALL NON-FINANCIAL INFORMATION ABOUT A JOB AGAINST ONE SEARCHABLE RECORD

ALL DOCUMENTS I.E WORD DOCS, FAXES (ELECTRONIC OR SCANNED) EMAILS (BOTH SENT AND RECEIVED), PICTURES, DRAWINGS, NOTES etc

CONSOLIDATES THREE LEGACY CRM DATABASES

CONQUEST

POWERFUL HISTORICAL LIBRARY ALLOWS QUICKER AND MORE ACCURATE:

- BIDS FOR TENDER
- ESTIMATES
- VALUATIONS

PROJECT COMMANDER

EXPORT JOB PROGRAM TO PROJECT COMMANDER

SAGE LINE 50

PAYROLL

BASIC BUT FULFILLS THE COMPANIES CURRENT NEEDS

AutoCad

KEY

SOFTWARE WE HAD

NEW SOFTWARE
Training Services Co: New CRM & Booking System + Web Portal + Enhanced Reporting (Crystal)
Progress on Nolan’s 6 stage model

1. INITIATION
2. CONTAGION
3. CONTROL
4. INTEGRATION
5. DATA ADMINISTRATION
6. MATURITY

IT EXPENDITURE INCREASES COUNTERCLOCKWISE

Aerospace & Pharms

Equipment & Construction
3. A process for IS strategy
development and implementation
IS STRATEGY FORMULATION - THEORY

BUSINESS STRATEGY & OBJECTIVES

PROCESS ANALYSIS

PROCESS RE-ENGINEERING

INFORMATION STRATEGY

DATA ANALYSIS & MODELLING

E-BUSINESS STRATEGY

INFORMATION SYSTEMS STRATEGY

INFORMATION TECHNOLOGY STRATEGY

New Business Plan & Corporate Vision

Current Process Maps

New Process Maps

Information Needs Analysis

Corporate Data Model

New Business Plan

Corporate Vision

Current Process Maps

New Process Maps

Information Needs Analysis

Corporate Data Model
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
<table>
<thead>
<tr>
<th>Company Sector</th>
<th>Staff</th>
<th>Turnover Increase (£m)</th>
<th>Annual Profit Increase from IS (£K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>180</td>
<td>27 → 40</td>
<td>90</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>270</td>
<td>5.6 → 10.7</td>
<td>720</td>
</tr>
<tr>
<td>Roof Manufacture</td>
<td>55</td>
<td>6.8 → 7.4</td>
<td>66*</td>
</tr>
<tr>
<td>Construction</td>
<td>75</td>
<td>4.8 → 6.5</td>
<td>74</td>
</tr>
<tr>
<td>Equipment Assembly &amp; Sale</td>
<td>45</td>
<td>2.9 → 3.8</td>
<td>134*</td>
</tr>
<tr>
<td>Construction</td>
<td>40</td>
<td>12.2 → 31.7</td>
<td>950</td>
</tr>
<tr>
<td>Training Services</td>
<td>28</td>
<td>1.4 → 2.0</td>
<td>200*</td>
</tr>
<tr>
<td>Office Systems Design &amp;</td>
<td>48</td>
<td>6.9 → 11.0</td>
<td>800</td>
</tr>
<tr>
<td>Installation</td>
<td></td>
<td></td>
<td>* Forecasts tbc</td>
</tr>
</tbody>
</table>
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

- Sales Order Processing
- Supply Chain Planning
- Manufacturing & Operations
- Purchasing
- HR Management
- Financial Management
Step 2. Map current information systems and allocate them to business processes
What systems are used?

- Telesales Telemarketing System (Access)
- Sales Force Contact Management System
- Sales Forecasting System (Excel)
- Warehouse Stock Control
- Despatch & Delivery Tracking
- Invoicing System (Sage)
- Telesales Telemarketing System (Access)
- Order Entry System
- MPS MRP
- Bill of Materials Explosion (Excel)
- Raw Materials Inventory (DBase4)
- Purchasing System
- Sales Ledger (Sage)
- Purchase Ledger (Sage)
- HR/Payroll

INFORMATION SYSTEMS PORTFOLIO
White – package
Grey – bespoke/in-house
Black - manual
Step 3. Undertake Red-Amber-Green (RAG) analysis of current systems

Green – Technically and strategically sound
Amber – Possibly replace
Red – In need of replacement
<table>
<thead>
<tr>
<th>BUSINESS OBJECTIVE</th>
<th>CSF</th>
<th>INFORMATION REQUIREMENT</th>
<th>SYSTEMS IMPLICATION</th>
</tr>
</thead>
</table>

1. **STRUCTURED INTERVIEWS**

2. **ANALYSE, PRIORITISE, FEEDBACK**

3. **INFORMATION SYSTEMS PLAN**
Step 4. Identify key data issues
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:

- BUDGET LIMITATIONS
- IT SKILLS SHORTAGE
- DEALING WITH LEGACY SYSTEMS
- SUPPLIERS 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
Maximise User Involvement in IS Delivery

- 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

- 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