

Application Portfolio

Arrianto Mukti Wibowo
amwibowo@cs.ui.ac.id

Materials taken from:

Wheelen, Thomas L. & J. David Hunger, *Strategic Management & Business Policy*

Ward, John & Joe Peppard, *Strategic Planning for Information Systems*

Laudon & Laudon, *Management Information Systems*



Agenda

- 3.1. Determine application portfolio from CSF-Balanced scorecard, value chain, value shop
- 3.2. Examples of several organizations' strategy & their application portfolio
- 3.3. Understand McFarlan matrix
- 3.4. Understand IS/IT Architecture



Strategy Development

- SWOT-TOWS method
- Competitive strategies & Cooperative strategies example
- Balanced Scorecard – CSF example
- Functional Strategies example



SWOT method

- Internal strategic factors:
 - Strength
 - Weaknesses
- External strategic factors:
 - Opportunities
 - Threats



TOWS Matrix

<p>Internal Factors</p> <p>External Factors</p>	<p>Strengths (S)</p> <p><i>List of strengths</i></p>	<p>Weaknesses (W)</p> <p><i>List of weaknesses</i></p>
<p>Opportunities (O)</p> <p><i>List of opportunities</i></p>	<p>SO Strategies</p> <p>Use strengths to take advantage of opportunities</p>	<p>WO Strategies</p> <p>Take advantage of opportunities by overcoming weaknesses</p>
<p>Threats (T)</p> <p><i>List of threats</i></p>	<p>ST Strategies</p> <p>Use strengths to avoid threats</p>	<p>WT Strategies</p> <p>Generate strategies that minimize weaknesses and avoid threats</p>



Maytag – Hoover Example

<p>Internal Factors</p> <p>External Factors</p>	<p>Strengths (S)</p> <ul style="list-style-type: none"> • <i>Maytag's quality culture</i> • <i>Experienced top management</i> • <i>Vertical integration</i> • <i>Employee relations</i> • <i>Hoover's international orientation</i> 	<p>Weaknesses (W)</p> <ul style="list-style-type: none"> • <i>Process oriented R&D</i> • <i>Distribution channels</i> • <i>Financial position</i> • <i>Global positioning</i> • <i>Manufacturing facilities</i>
<p>Opportunities (O)</p> <ul style="list-style-type: none"> • <i>Integration of EU</i> • <i>Demographics favor quality</i> • <i>Economic dev. in Asia</i> • <i>Opening of Eastern Europe</i> • <i>Trend toward superstores</i> 	<p>SO Strategies</p> <ul style="list-style-type: none"> • <i>Use worldwide Hoover distribution channel to sell Hoover & Maytag appliance</i> • <i>Find joint venture partners in Eastern Europe and Asia</i> 	<p>WO Strategies</p> <ul style="list-style-type: none"> • <i>Further improve quality</i> • <i>Reduce manufacturing cost and distribution cost</i> • <i>Emphasis superstore channel</i>
<p>Threats (T)</p> <ul style="list-style-type: none"> • <i>Increasing gov. regulations</i> • <i>Strong US competition</i> • <i>Whirlpool and Electrolux positioned for global economy</i> • <i>Japanese appliance company</i> • <i>New product advances</i> 	<p>ST Strategies</p> <ul style="list-style-type: none"> • <i>Acquire Raytheon's appliance in US to increase market share</i> • <i>Merge with a major Japanese home appliance</i> • <i>Sell off all non Maytag brands and strongly defend Maytag's US niche</i> 	<p>WT Strategies</p> <ul style="list-style-type: none"> • <i>Sell Dixie-Narco to reduce debt</i> • <i>Emphasize cost reduction to reduce break-even point</i>

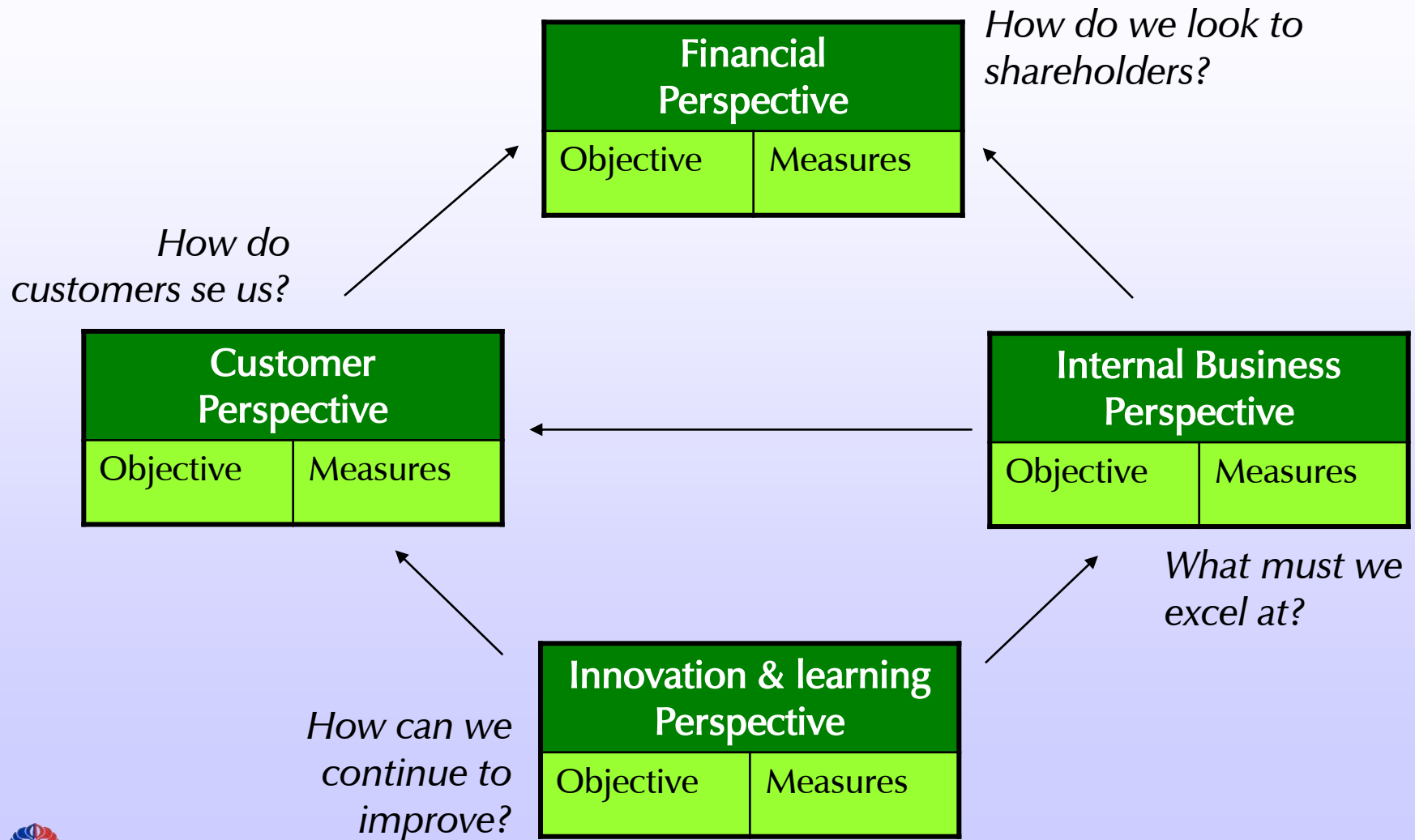


IS Strategies of Maytag-Hoover

Strategy	IS Application
<i>Use worldwide Hoover distribution channel to sell Hoover & Maytag appliance</i>	An efficient global supply chain management (SCM) system – may cooperate with global carriers.
<i>Further improve quality</i>	Quality monitoring system, decision support system
<i>Reduce manufacturing cost and distribution cost</i> <i>Emphasize cost reduction to reduce break-even point</i>	Accurate cost accounting information system Efficient & effective SCM
<i>Emphasis superstore channel</i>	SCM with on-line EDI links to superstore's inventory system
<i>Acquire Raytheon's appliance in US to increase market share</i> <i>Merge with a major Japanese home appliance</i>	Common financial reporting system



Balanced Scorecard



Notes on BSC

- Was developed to 'balance' the common but might be misleading indicator: financial reports
- The important thing is the measurement!
- Less focused on external factors
- Suggested to be used after business strategy defined
- BSC can be used to define activities/programs (not explained today)



Rockmart's Critical Success Factors (CSF)

- Small number of easily identifiable operational goals
- Shape by industry, manager & environment
- Believed to assure firm's success
- Used to determine organization's information requirements



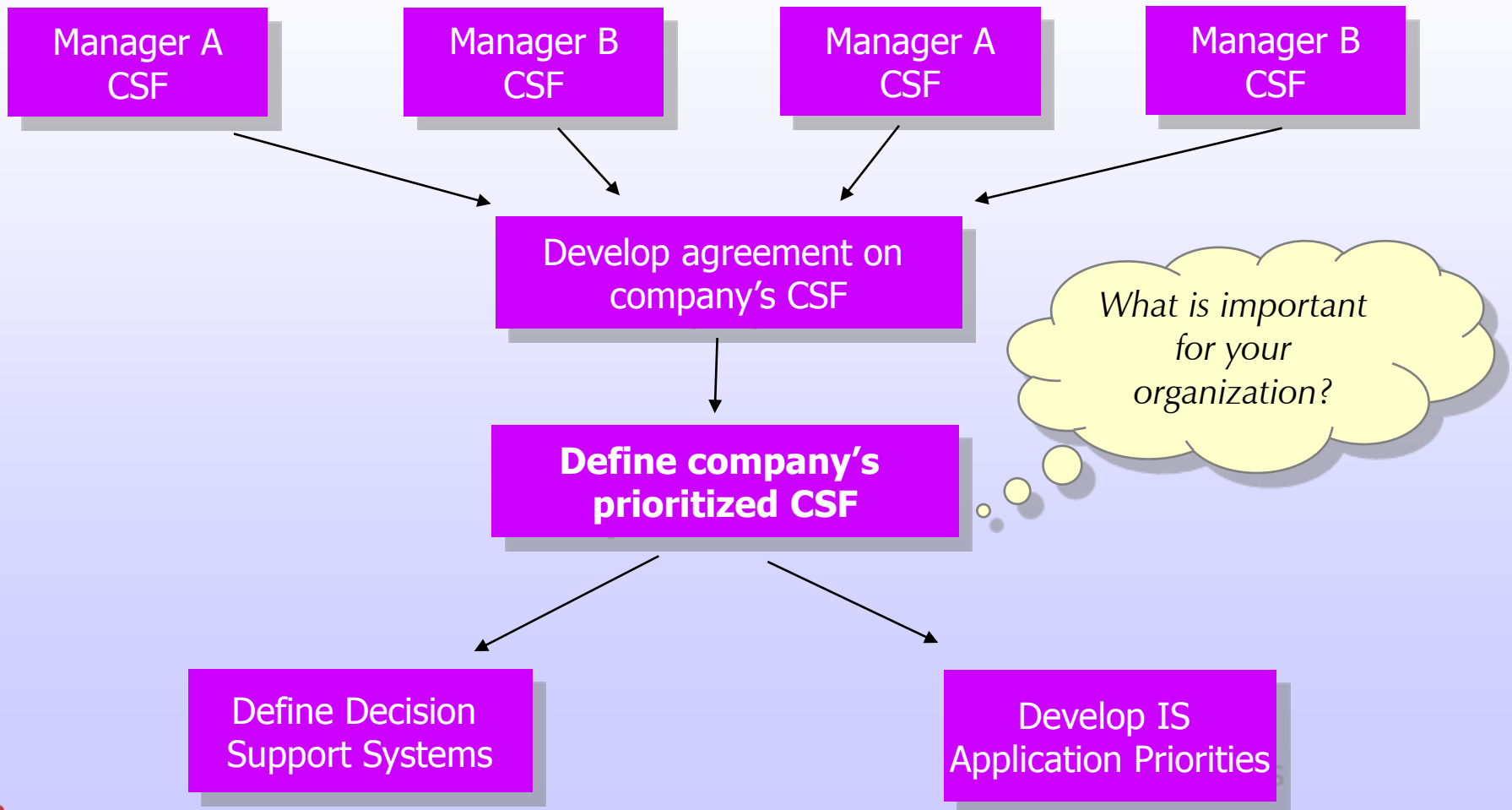
Critical Success Factors & Goals

EXAMPLE	GOALS	CSF
PROFIT	EARNINGS/SHARE	AUTOMOTIVE INDUSTRY:
CONCERNS	RETURN ON INVESTMENT	STYLING
	MARKET SHARE	QUALITY DEALER SYSTEM
	NEW PRODUCT	COST CONTROL
		ENERGY STANDARDS
NONPROFIT	EXCELLENT HEALTH CARE	REGIONAL INTEGRATION WITH OTHER HOSPITALS
	MEETING GOVERNMENT REGULATIONS	EFFICIENT USE OF RESOURCES
	FUTURE HEALTH NEEDS	IMPROVED MONITORING OF REGULATIONS

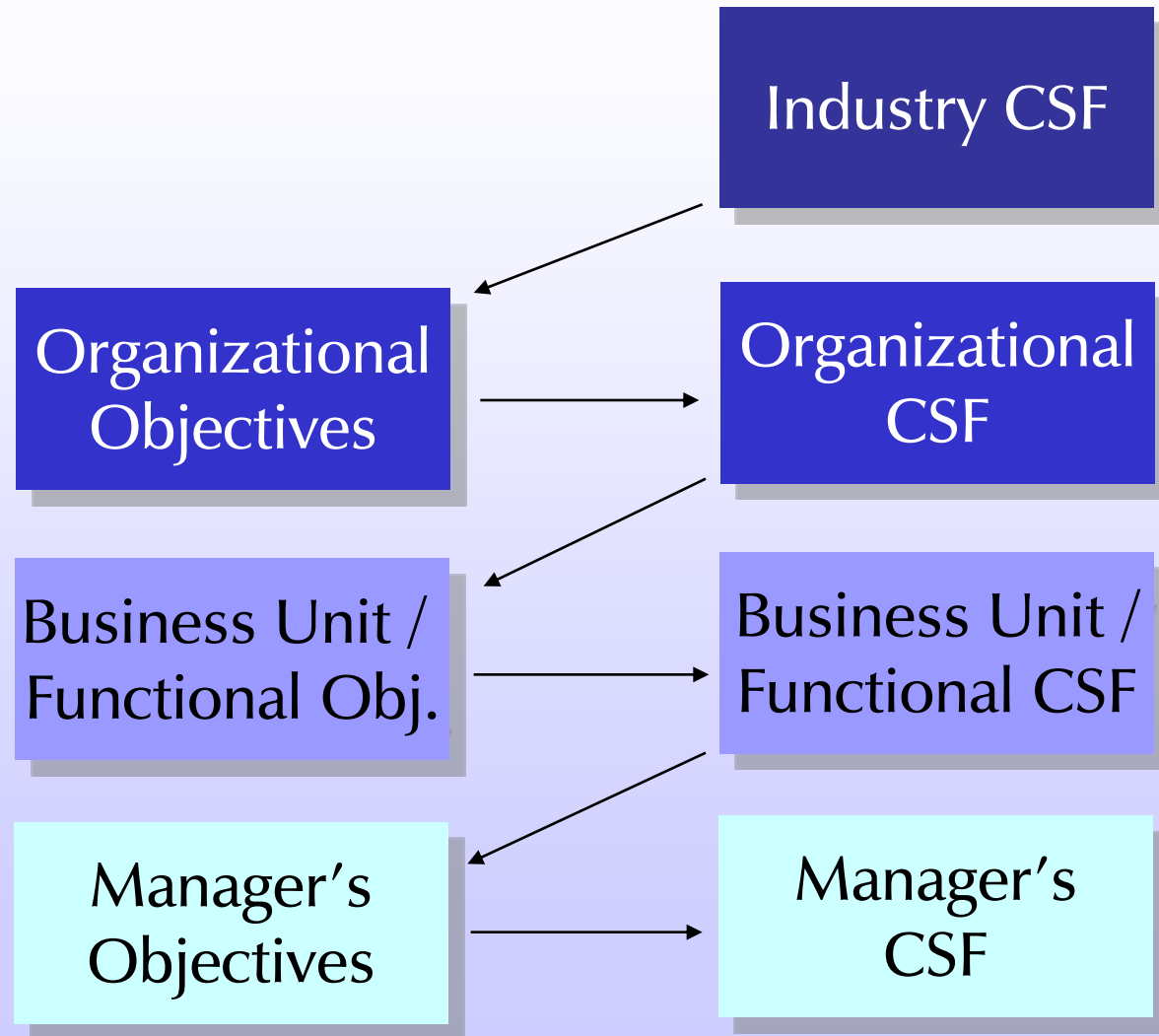
CSF should also include quantifiable objectives!



CSF Methodology



CSF Levels



BSC-CSF Example:

Manufacturing Company of Electrical Product

- Imported components
- Orders tend to be unique for specific customer, now using stock strategy
- Problems:
 - Cost for components acquisition
 - Cost of finished goods
 - Long delivery time



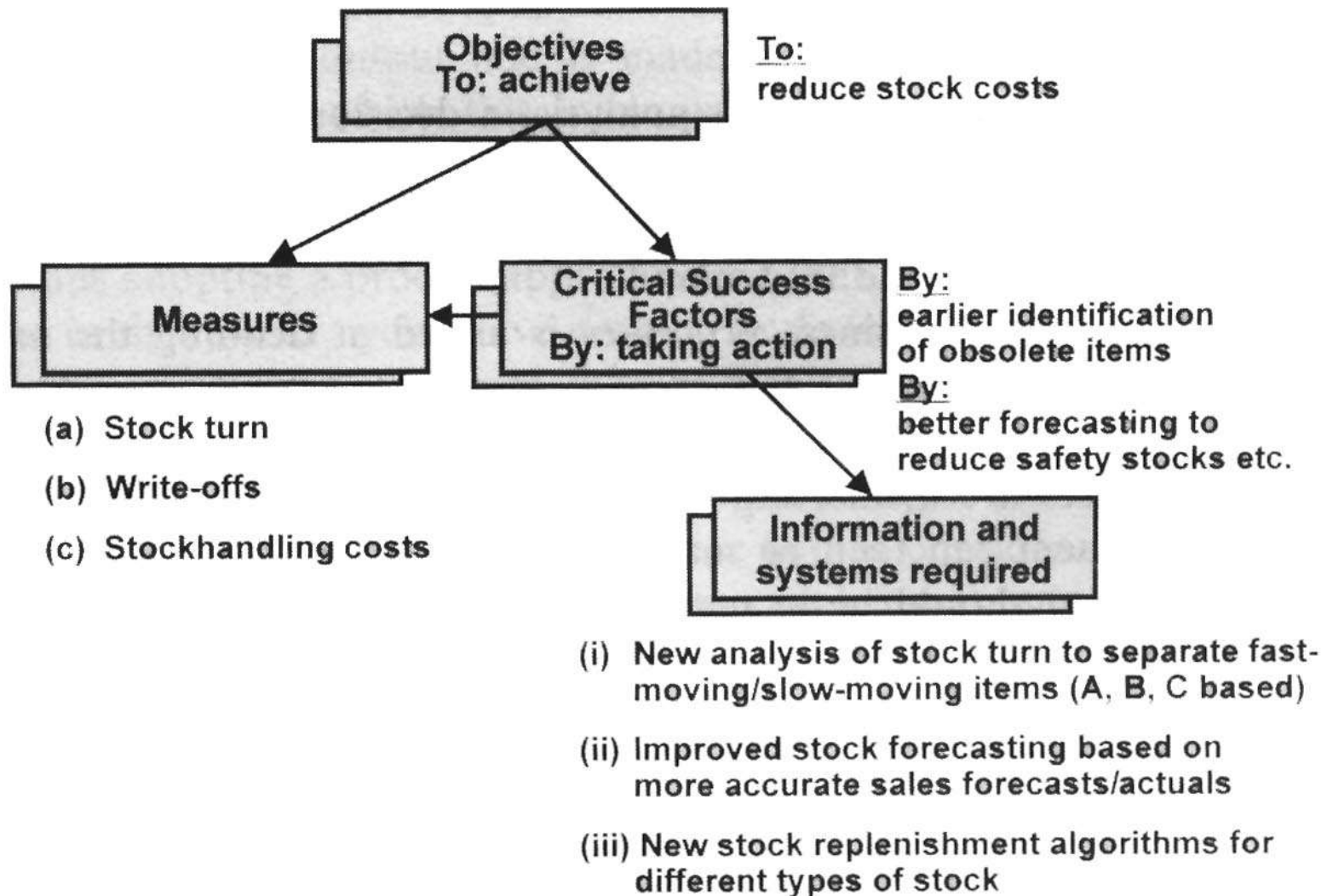
Objectives	Financial	Measures
- To reduce stock costs		(a) Stock turn (b) write-offs (c) Stockhandling costs
- To increase product profitability		(a) Product margins (b) Gross profit

Objectives	Customer	Measures
- To increase responsiveness		(a) Order to delivery lead time (b) Enquiry response time
- To be more price competitive		(a) Benchmarks versus competitor prices (b) Customer value/price perception

Objectives	Internal	Measures
- To provide fast-track service to best customers		(a) Reduced lead time to specific customers (b) Customer satisfaction
- To remove interface costs/delays with agents		(a) Cost of rework (b) Number of referrals

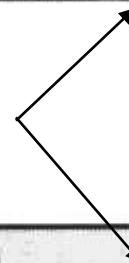
Objectives	Innovation	Measures
- To reduce new product lead times by 30%		(a) Design to sale time (b) No slack in elapsed time
- To find new channel to reach SME customers		(a) New channel exists (b) Number of options reviewed/tested





Financial perspective			
Objectives	Measure(s)	Action (CSF)	IS Needs
- <u>To reduce stock costs</u>	a) Stock turn b) Write offs c) Stockhandling costs	- <u>By</u> earlier identification of obsolete items - <u>By</u> better forecasting to reduce safety stocks	i) New stock turn analysis (ABC) ii) Improved sales and stock forecasting iii) New stock replenishment algorithms

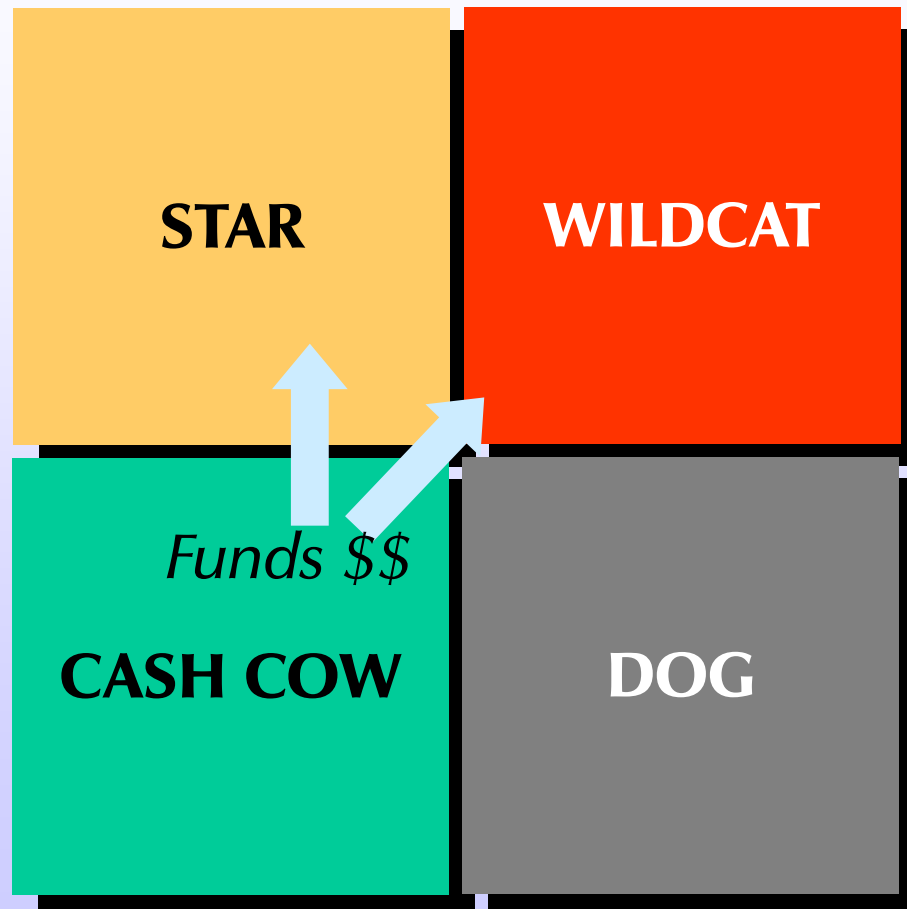
Required IS Applications



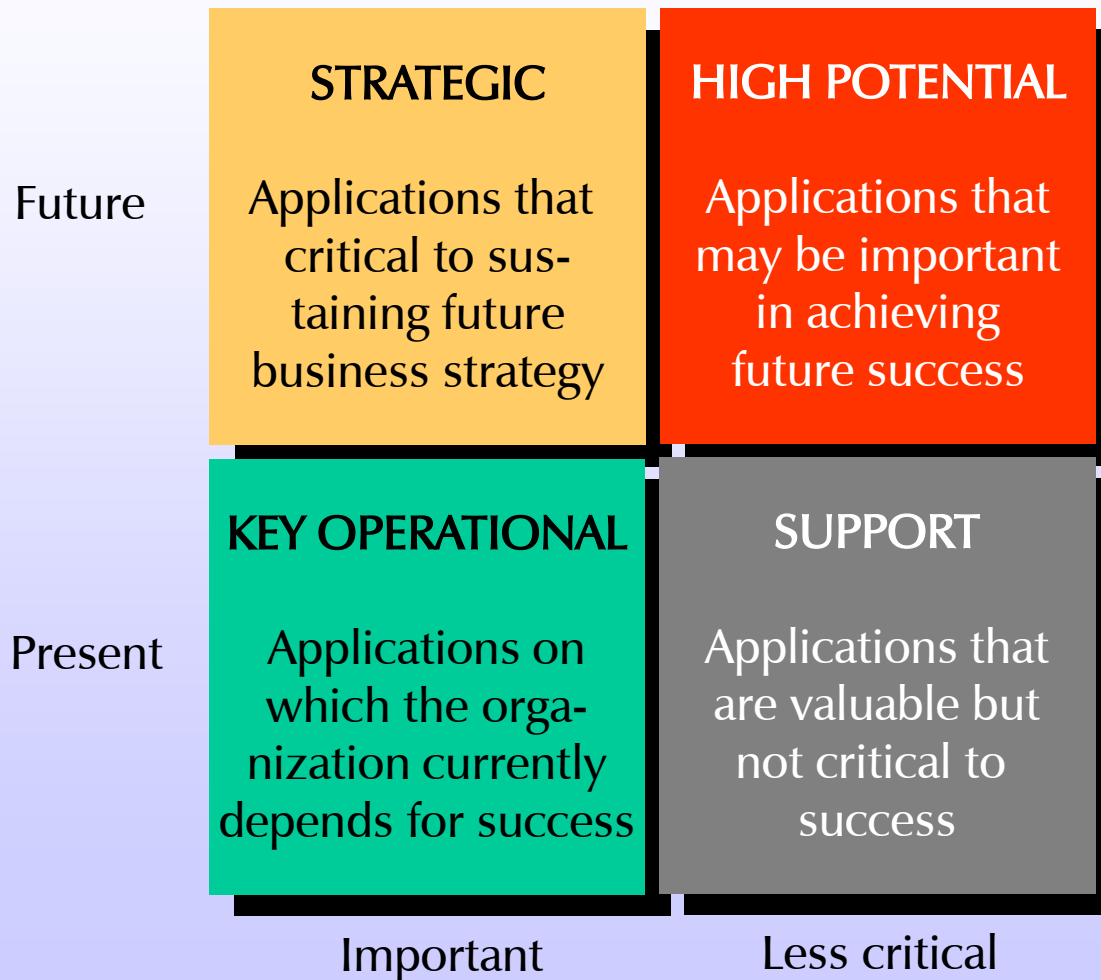
Customer perspective			
Objectives	Measure(s)	Action (CSF)	IS Needs
- <u>To increase responsiveness</u>	a) Order to delivery lead time b) Enquiry response time	- <u>By</u> identifying causes of all late deliveries - <u>By</u> informing customers in advance of problems - <u>By</u> tracking all enquiries/ progress daily	i) New accurate measure of all order/delivery times ii) Analysis of all types of delivery failure iii) New/dynamic customer/order monitoring system to instigate action iv) New enquiry recording/tracking process and system



Understanding the Boston Consulting Group (BCG) Matrix



The IS Application Portfolio



Closely related and derived from "McFarlan Matrix"

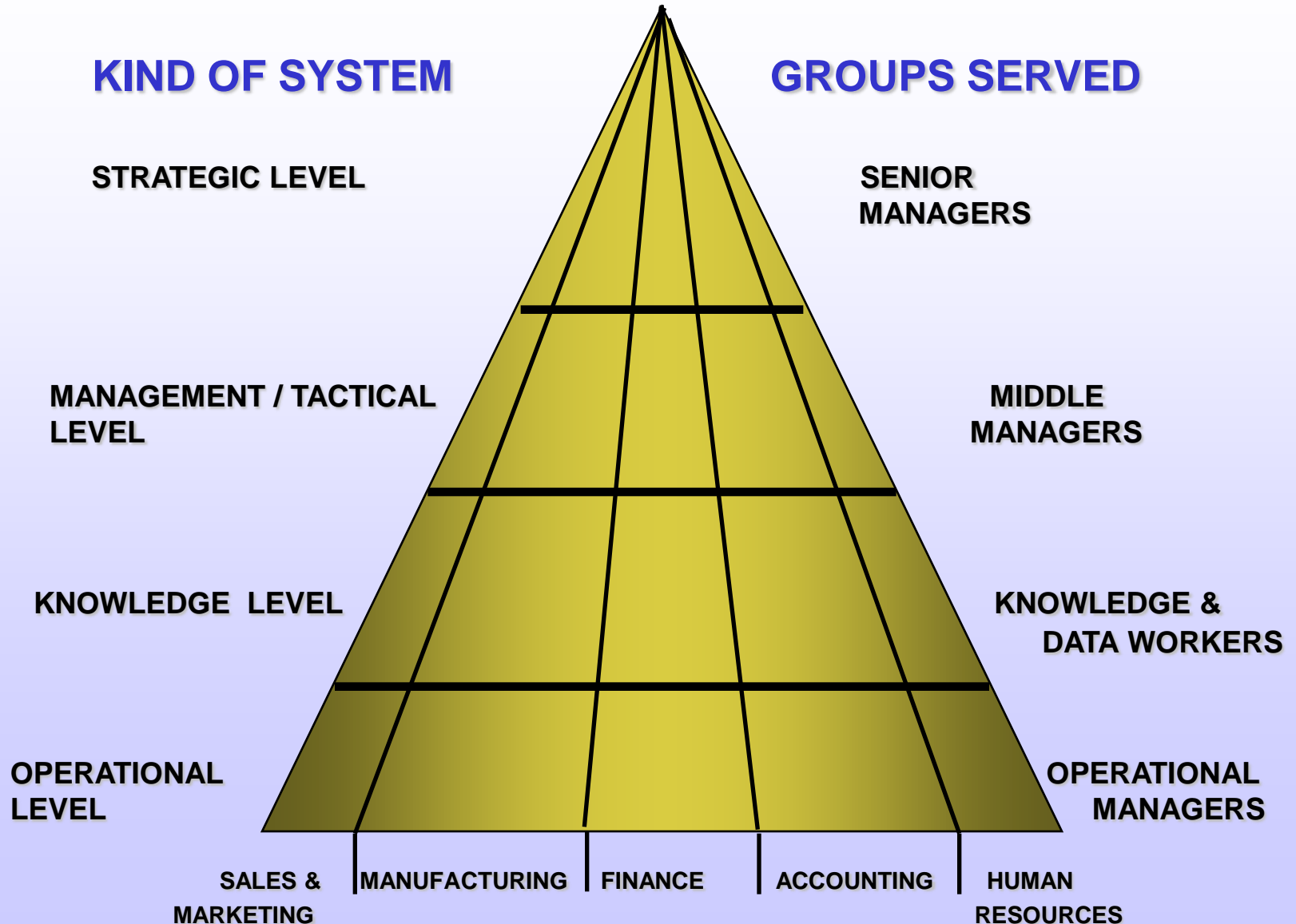


Fill the Application Portfolio Matrix For BI...!

- | | |
|----------------------------|--------------------------------|
| 7. Risk Management | 8. Performance Management |
| 9. Economy Analysis | 16. Supervision |
| 20. Monetary Management | 17. Examination |
| 21. Fiscal Indicators | 18. Rural Banking |
| 22. External Indicators | 19. Financial System |
| | 14. Finance |
| 23. Real Sector Indicators | 13. Logistics |
| | 26. Security Settlement (SSSS) |
| 15. Human Resources | |



Laudon's Organization Level & Functions



Types of Information Systems

Executive Information Systems

Strategic Level Systems

5 yr budget forecast

Profit planning

5 yr sales forecast

MIS / DSS

Management / Tactical Level Systems

Sales analysis

Production scheduling

Cost analysis

Annual budgeting

Pricing analysis

Knowledge Work System & Office Systems

Knowledge Level Systems

Word processing

Documents imaging

Workflow app

Spread-sheets

Analyst workstations

Transaction Processing Systems

Operational Level Systems

Order tracking

Machine control

Payroll

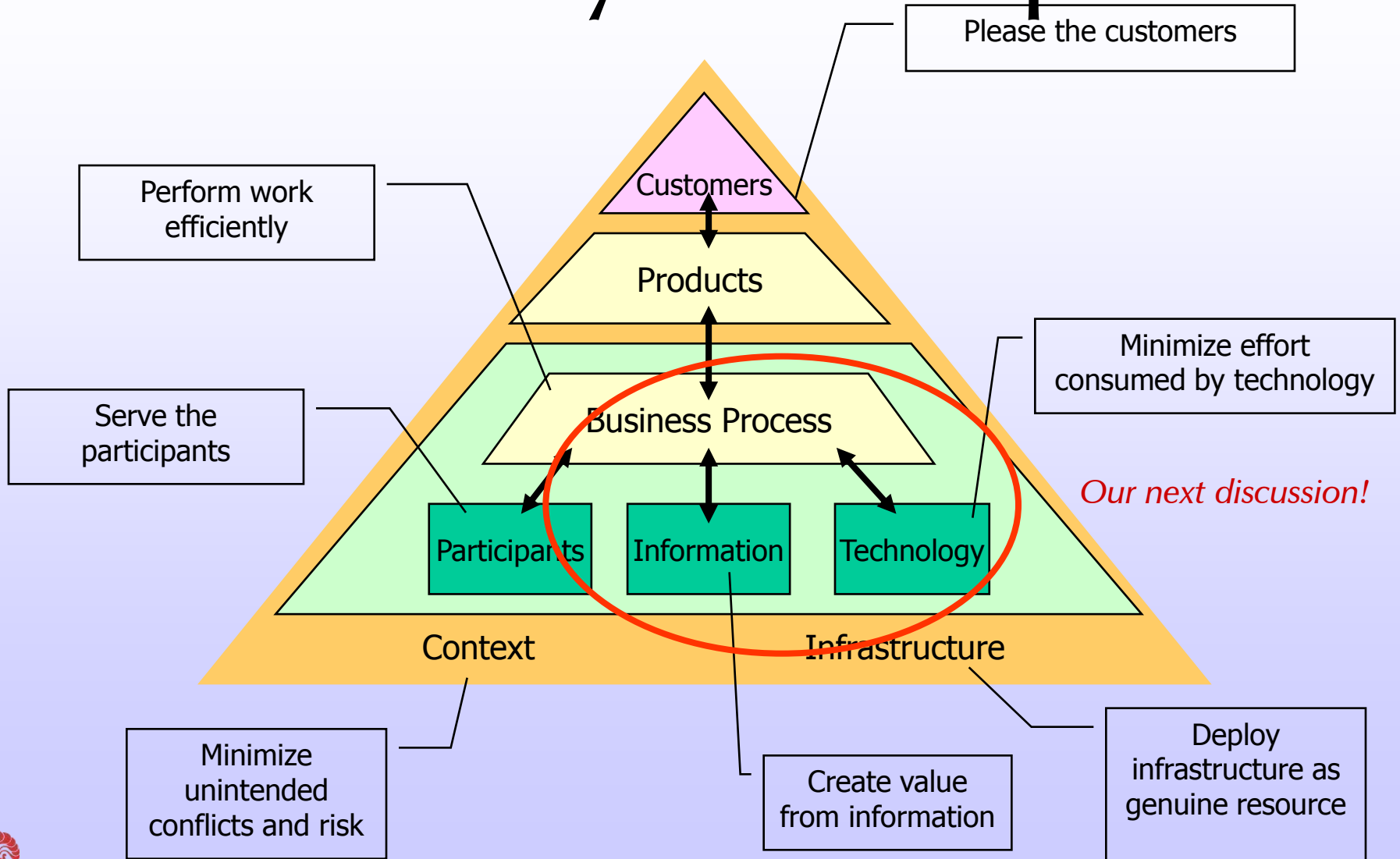
AR/AP

Employee records

Securities Trading



Alter's Work System Principles



Architecture model

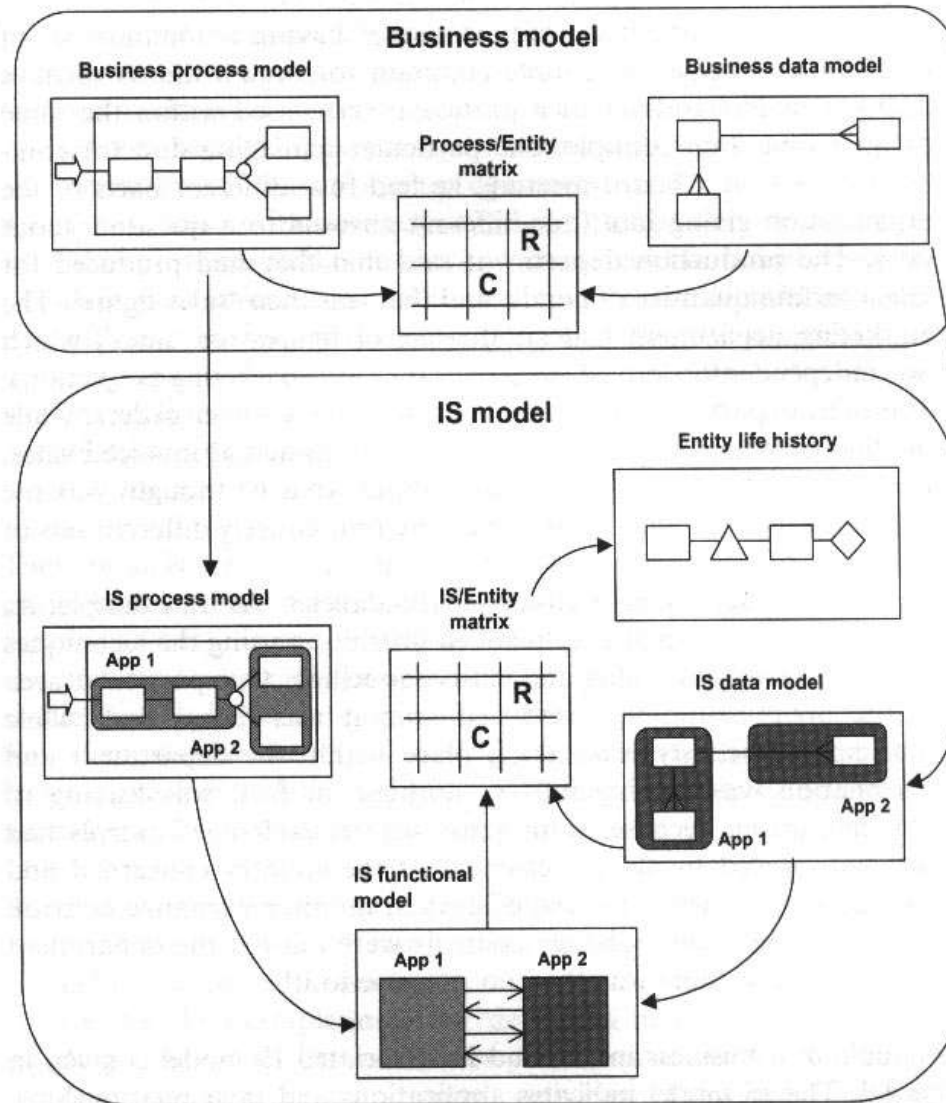
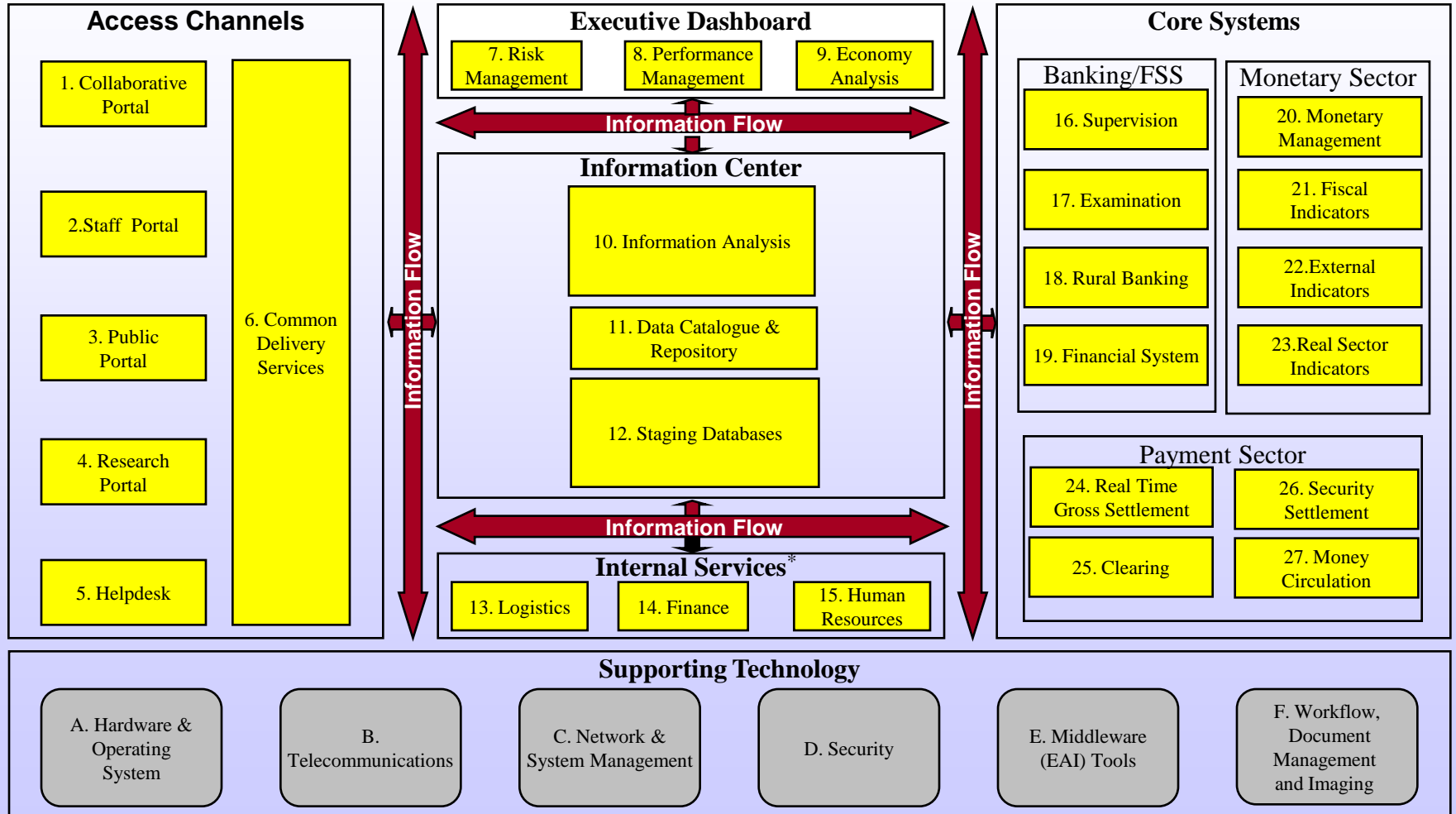
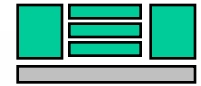


Figure 4.3 An example of an architecture model, comprising a business and an IS model (source: M. Cook, 'Architecture models', working papers, Glaxo Wellcome Operations, 1995)



IS/IT Architecture of A Central Bank

Business Application and Supporting Technology



Note: * As this is a high-level architecture, not all Directorates are represented (eg. Legal, Internal Audit, Archiving, Planning etc.)