IS6640
IS Planning and Strategy

Lecture 8 - Application Portfolio Approach

Reference –
Original: John Ward & Pat Griffiths, Strategic Planning for Information Systems, 1996, John Wiley & Sons.
Updates: Joe Peppard and John Ward, The Strategic Management of Information Systems: Building a Digital Strategy, 2016, John Wiley & Sons.

Courtesy: Prof Bernard Tan

Managing Applications Portfolio

- Key questions for management
- Key demand and supply issues
- Generic management strategies
- Evolution of management strategies
- Portfolio management strategies
- Portfolio management principles
- Portfolio management styles
- Portfolio management over time
- Portfolio management risks

Classifying Applications to Portfolio

BOX 8.2

Classifying the applications in the portfolio

An application is *Strategic* if it does or will a) create a clear competitive advantage for the business or b) enable the achievement of specific business objectives and/or critical success factors.

It is *Key Operational* if it does or will a) overcome known business disadvantages in relation to competitors or b) avoid known or foreseeable business risks becoming major problems in the near future or c) enable the organization to comply with legal and regulatory requirements (that affect its 'licence to operate').

It is *Support* if it does or will a) improve the productivity of the business and, hence, reduce long-term costs or meet general statutory requirements (that do not affect its licence to operate).

It is *High Potential* if the impact it could have is as yet uncertain but could be of a Strategic nature.

If the application seems to fit more than one definition, then it should be reassessed by splitting it into its major components or business functions performed and consider each of them in the same way. If this is not done, the risks of failure or the costs are likely to increase significantly due to the mixed objectives and the confusion that they can cause in how it is managed. For example, an Accounts Receivable system may consist of several business processes or sub-processes, some of which may be more business critical than others – bad-debt control may be key operational, whereas statement production is support. Although many applications are often provided via large packages (e.g. ERP or CRM software), the purpose of the analysis is still to classify the business activities that the package covers (e.g. order processing, purchasing), rather than the package itself. An ERP package can deliver applications in all quadrants, depending on the competitive positioning, the business strategy and the maturity of IS/IT development in the organization.

Example Portfolio of a Manufacturing Company

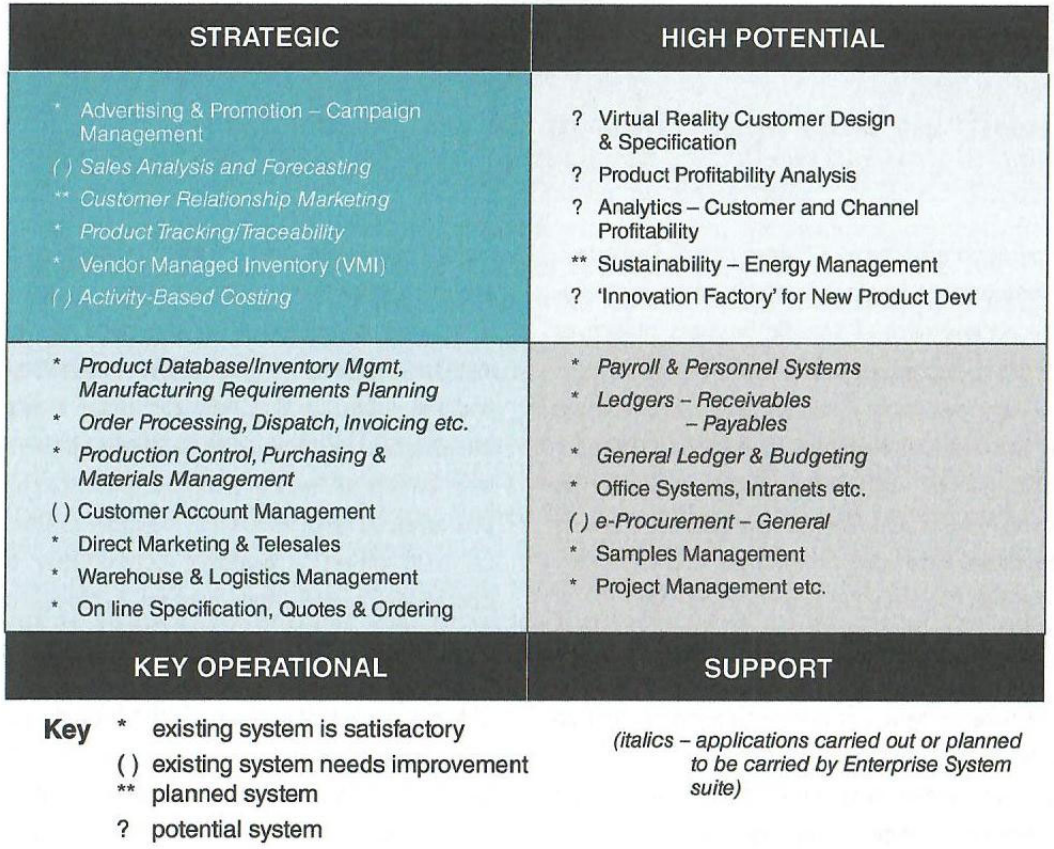


FIGURE 8.3 Example portfolio for a manufacturing company.

Reconciling Demand and Supply (Implementation) Issues in Portfolio

TABLE 8.2 Some key issues in the segments of the portfolio

	Driving forces	Critical requirements
High potential	◆ New business ideas or technological opportunities ◆ Individual initiative – owned by a 'product champion' ◆ Need to prove the value or otherwise of the idea or the capabilities of the technology	◆ Rapid evaluation of prototypes and avoid wasting effort/resources on failures ◆ Understand the potential benefits in relation to the business strategy ◆ Identify the best way to proceed – the next steps
Strategic	◆ Market requirements, competitive pressures or other external forces ◆ Business objectives, success factors and vision of how to achieve them ◆ Obtaining an advantage and then sustaining it through a combination of technology and business changes	◆ Rapid (even iterative) development to realize benefits within the window of opportunity ◆ Flexible system that can be adapted in the future as the business evolves ◆ Link to an associated business initiative to achieve changes and sustain commitment
Key operational	◆ Improving the performance of existing core processes and management activities ◆ Integration of data and systems to avoid duplication, inconsistency and misinformation ◆ Avoiding a business disadvantage, preventing a business risk or complying with industry legislation	◆ High-quality, long-life solutions and effective information management ◆ Balancing costs with benefits and risks – identify optimum balance of IT and business change ◆ Evaluation of options (including outsourcing) available, by objective feasibility study
Support	◆ Improved productivity/efficiency of specific business tasks ◆ General legislation ◆ Most cost-effective use of IS/IT funds and resources available	◆ Low cost, long-term solutions – often packaged software to satisfy most needs – compromise the needs to the software available ◆ Business Process Outsourcing (BPO) is an option ◆ Objective cost/benefit analysis to reduce financial risk and then control costs carefully

Keys Questions for Application Portfolio Investments (Linking Demand & Supply)

STRATEGIC	HIGH POTENTIAL
WHY do we want to do it in strategic terms? WHAT does the system need to do to gain the advantage? HOW best to do it?	WHY ? – not clear and/or WHAT? – not certain and/or HOW? – not yet known
Why? To improve performance and avoid disadvantage WHAT actually has to improve and by how much? HOW best to do it?	*Why?* To reduce costs by improving efficiency *What?* Of existing necessary tasks HOW best to do it?
KEY OPERATIONAL	SUPPORT

FIGURE 8.4 Key questions for application portfolio investments.

Application Portfolio Management (APM)

- Application portfolio management (APM) is a framework to optimize and manage all of an organization's technology stack and software-based services. The APM business process covers a range of services including inventory, business capabilities between assets, and lifecycle management.

- With APM, an organization's CIO, CTO and other decision makers can make more strategic investments with a better understanding of the total cost of ownership for each part of the portfolio. By using application portfolio management, an organization is supporting its digital transformation and business objectives in a smart and effective way.

- Managers and application professionals gain better insight into the organization's software applications with APM; it provides them with metrics to measure the business benefit for each. Using for example application performance management.

- Application performance management is a practice that uses software tools, data analysis and application management processes to help organizations optimize the performance, availability and user experience of business applications. (https://www.ibm.com/think/topics/application-performance-management)

Reference: https://www.ibm.com/think/topics/application-portfolio-management

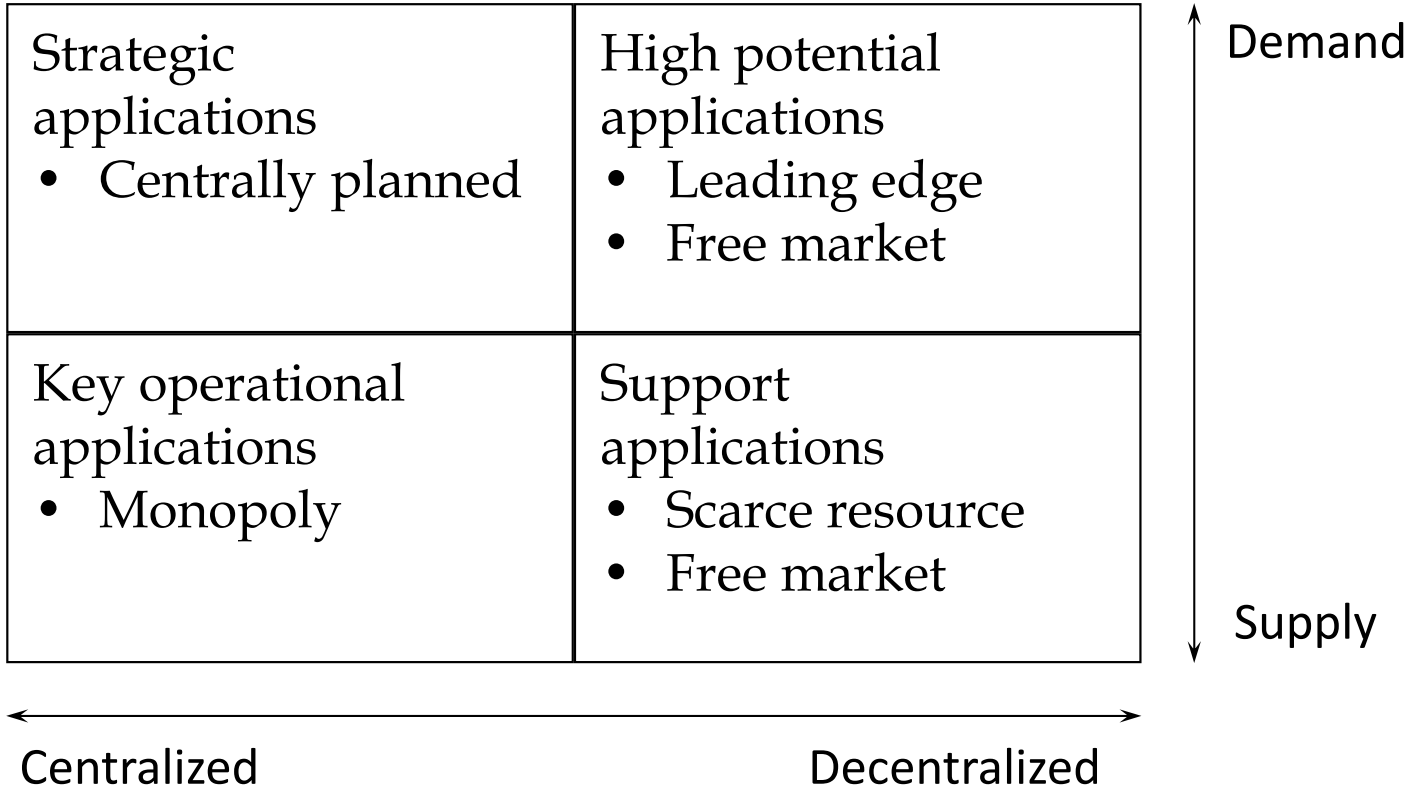
Application Portfolio Management

Steps to Application Portfolio Management

1. Create an inventory of applications
2. Define application lifecycles
3. Assess usage of applications
4. Establish and align business priorities
5. Maintain the process
6. Evaluate portfolio content

Reference: https://www.ibm.com/think/topics/application-portfolio-management

Portfolio Management Strategies



Generic Management Strategies

Strategy	Centrally planned	Leading edge
Rationale	• Central coordination of all requirements will produce better decisions	• Technology can create business advantages and risks are worth taking
Organizational requirements	• Knowledgeable top management • Integrate IS and business planning	• Commitment of resources and funds • Innovative management and strong technical skills
Role of IS	• Provide resources to match business demands	• Push forward boundaries of technology usage
Role of users	• Identify applications to meet business needs	• Use technology and identify the advantages

Generic Management Strategies

Strategy	Free market	Monopoly
Rationale	• Market makes the best decisions and users are responsible for business results	• Information is a corporate good and an integrated resource for users to employ
Organizational requirements	• Knowledgeable and accountable users • Willingness to duplicate efforts with loose budget control	• Acceptance of policy on single sourcing • Good forecasting of resource usage
Role of IS	• Profit oriented to achieve a return on resources	• Satisfy requirements of users and non-directive in IS usage
Role of users	• Identify, source, and control applications development	• Understand business needs and present them to obtain resources

Generic Management Strategies

Strategy	Scarce resource
Rationale	• Information is a limited resource and its development must be clearly justified
Organizational requirements	• Tight budget control of all IS expenses • Policies to control and justify IS usage
Role of IS	• Control costs to optimize use of limited resources
Role of users	• Identify and justify applications using costs and benefits

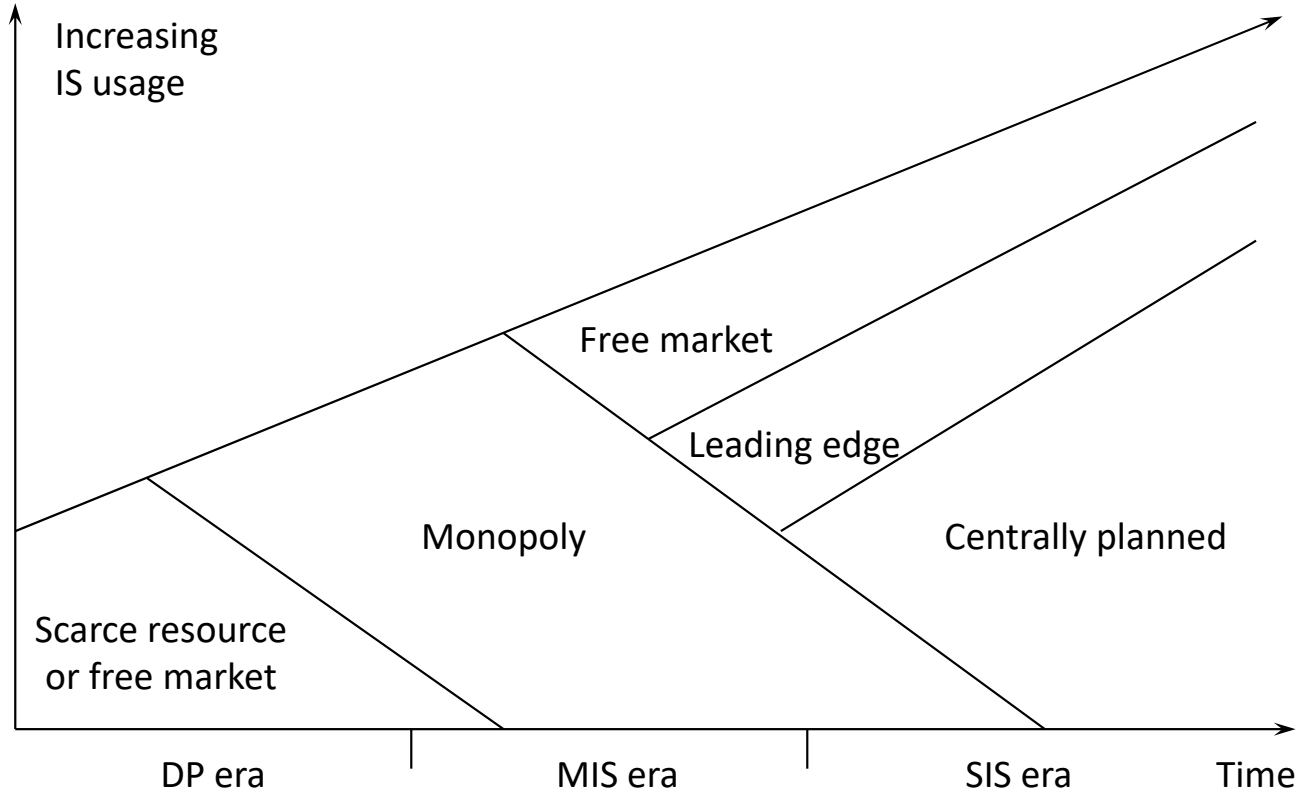
Summary - Rationale & Requirements for General Strategies

TABLE 8.3 Rationale and requirements for generic strategies

	Centrally planned	Leading edge	Free market	Monopoly	Scarce resource
Management rationale	Central coordination of all requirements produces better decision making	Technology can create business advantages and risks are worth taking	Market makes the best decisions and users are responsible for business results Integration is not critical	Information is a corporate good and an integrated resource for users to employ	Information is a limited resource and must be used efficiently
Organizational requirements	Knowledgeable and involved senior management Integrated planning of IS/IT within the business planning process	Commitment of funds and resources Innovative IS/IT management Strong technical skills	Knowledgeable users Accountability for IS/IT costs at business or functional level Acceptance of duplicated efforts	User acceptance of the philosophy Policies to enforce single sourcing Good forecasting of resource usage	Tight budgetary control of all IS/IT expenses Policies for controlling IS/IT and users
IT role	Provide services to match the business demands by working closely with business managers	Push forward boundaries of technology use on all fronts	Competitive: (and possibly a profit centre) – intended to achieve a return on its resources	To satisfy users' requirements as they arise, but non-directive in terms of the uses of IS/IT	Make best use of limited resources by tight cost control of operations and projects Financially justify infrastructure investments
Line managers' and users' role	Identify the potential of IS/IT to meet business needs at all levels of the organization	Use the technology and identify the business advantages it offers	Identify, source and control IS/IT developments and (some) operations	Understand needs and present them to central utility to obtain resources	Identify financial benefits and cost-justify projects

Source: After Parsons.

Evolution of Management Strategies



Portfolio Management Principles applied to Application Portfolio

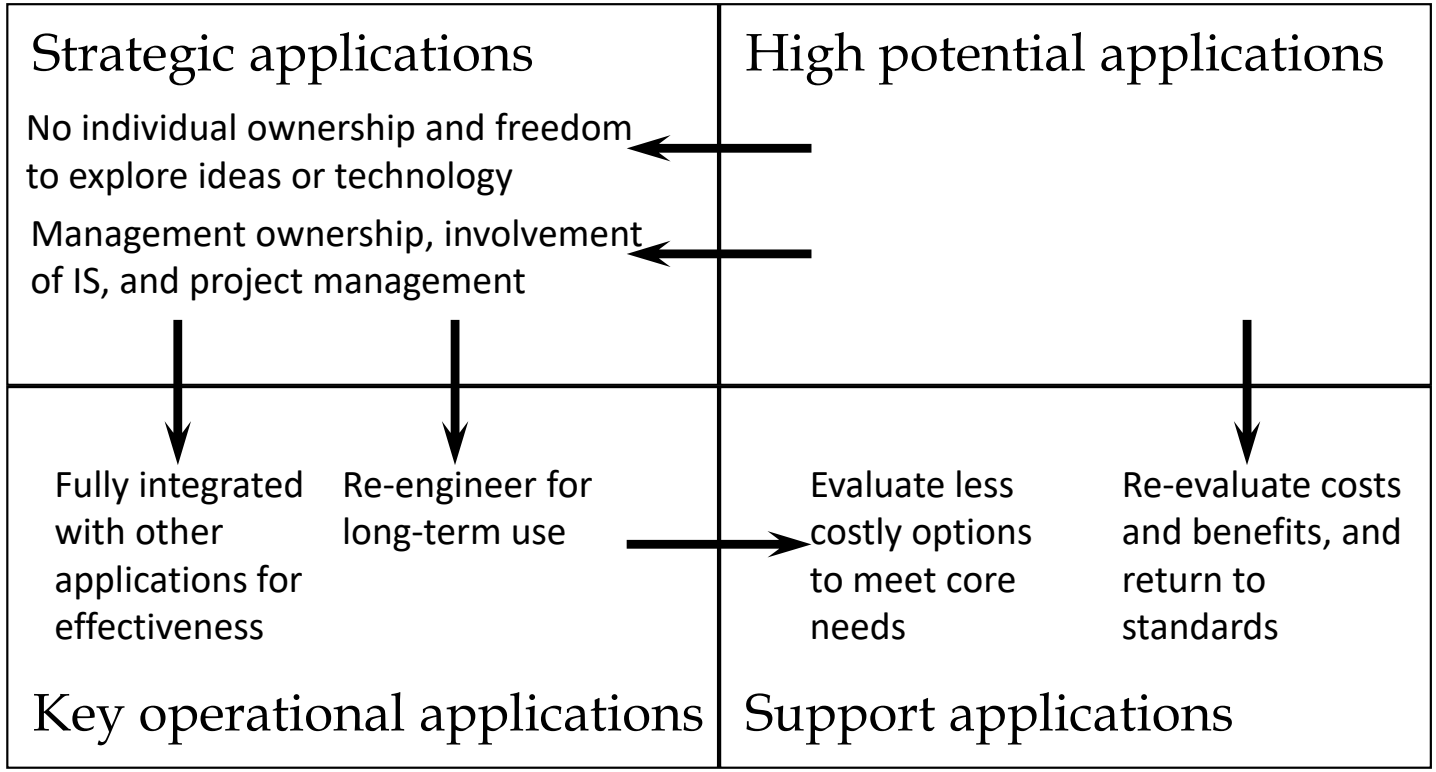
STRATEGIC (Stars)	HIGH POTENTIAL (Wildcats)
• Continuous innovation • Vertical integration • High value-added *(Developer)*	• Process research and design • Minimal integration • Cost control *(Entrepreneur)*
• Defensive innovation • Effective resource utilization • High quality *(Controller)*	• Disinvest/ Rationalize • Efficiency • Sustain quality *(Caretaker)*
KEY OPERATIONAL (Cash cows)	SUPPORT (Dogs)

FIGURE 8.6 The business/application portfolio matrix.

Aligning Management Styles to the Portfolio

Strategic applications (developer) • Seeks organizational goals • Accomodates risks	High potential applications (entrepreneur) • Achieves personal goals • Takes risks
Key operational applications (controller) • Seeks lasting quality solutions • Reduces risks	Support applications (caretaker) • Seeks immediate efficient solutions • Avoids risks

Portfolio Management Over Time

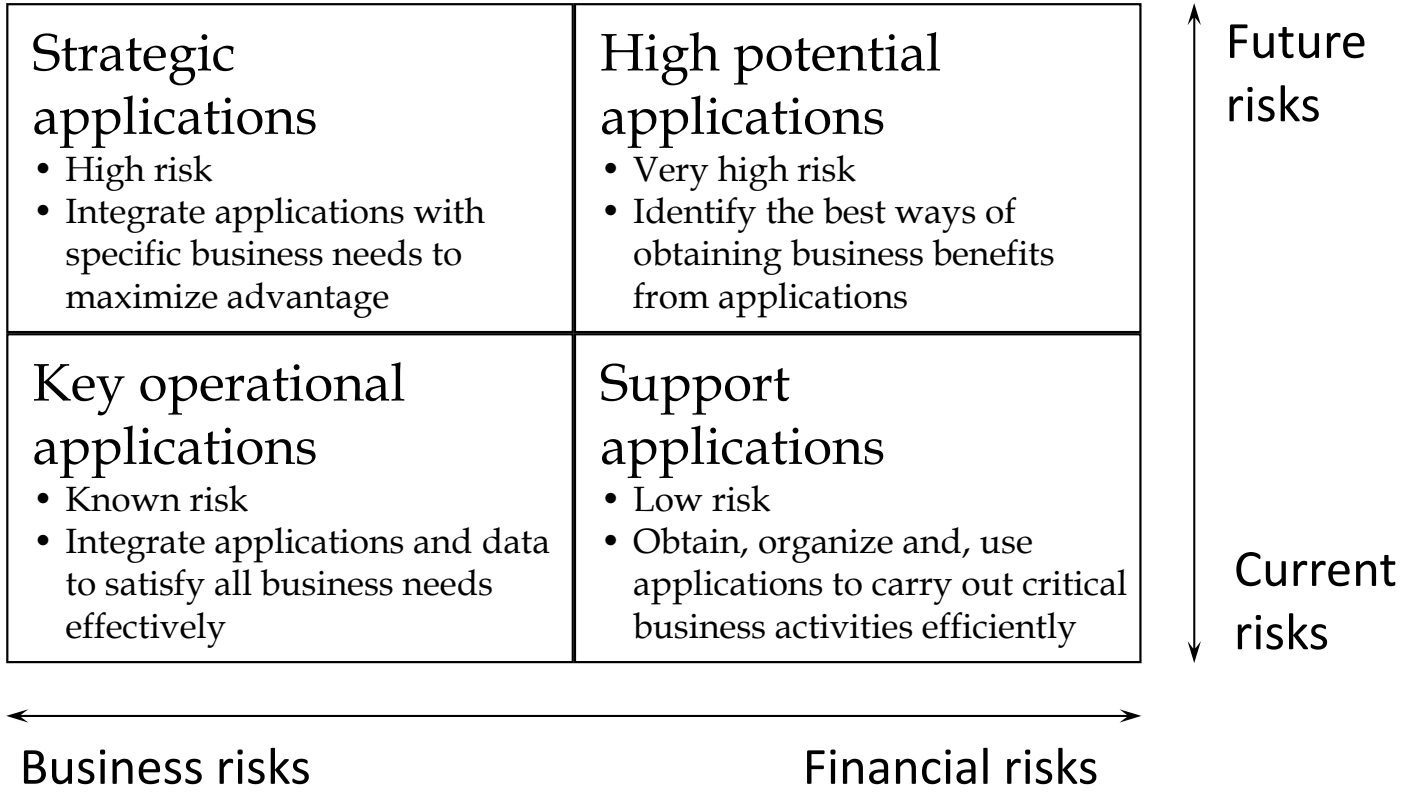


Managing Application Developments

TABLE 8.5 Some key aspects of managing application developments

	Critical requirements	Application development: key aspects
High potential	◆ Rapid evaluation of prototypes and avoid wasting effort/resources on failures ◆ Understand the potential benefits in relation to the business strategy ◆ Identify the best way to proceed – the next step	◆ Prototypes and pilots to test performance, scalability and user acceptance. Independent – low integration. ◆ Evaluate potential benefits and how to achieve them through low cost, iterative developments – maybe multiple, competing pilots. ◆ Acquire new skills/transfer knowledge from outside expertise.
Strategic	◆ Rapid (even iterative) development to realize benefits within the window of opportunity ◆ Flexible system that can be adapted in the future as the business evolves ◆ Link to an associated business initiative to achieve changes and sustain commitment	◆ Dedicated joint IS/IT and user development teams using Agile methods to share knowledge and create new business processes. ◆ RAD and GUI tools to produce and test pilots for functionality and performance. Design for future adaptation. ◆ Executive sponsorship and senior management leadership of the team.
Key operational	◆ High-quality, long-life solutions and effective information management ◆ Balancing costs with benefits and risks – identify optimum balance of IT and business change ◆ Evaluation of options (including outsourcing) available by objective feasibility study	◆ SSADM and Project Management methodologies, process redesign and apply corporate information management standards and policies. ◆ Use industry-specific packages with minimum customization, but integrated with other systems. Strict specification and change control processes. ◆ Combined IS/IT and business team: select for performance of core processes and application reliability as well as functionality and costs.
Support	◆ Low cost, low risk, long-term solutions – often packaged software to satisfy most needs – compromise needs to the software available ◆ Process and IS outsourcing is an option ◆ Objective cost/benefit analysis to reduce financial risk and then control costs carefully	◆ Design procedures to use software package efficiently. Interface not integrated. No customization. ◆ Take advantage of the external capabilities available – and used successfully by others. ◆ User makes final selection of package, using package checklist to ensure compliance with IT strategy.

Portfolio Management Risks



Portfolio Management in Multi-Business Unit Organization

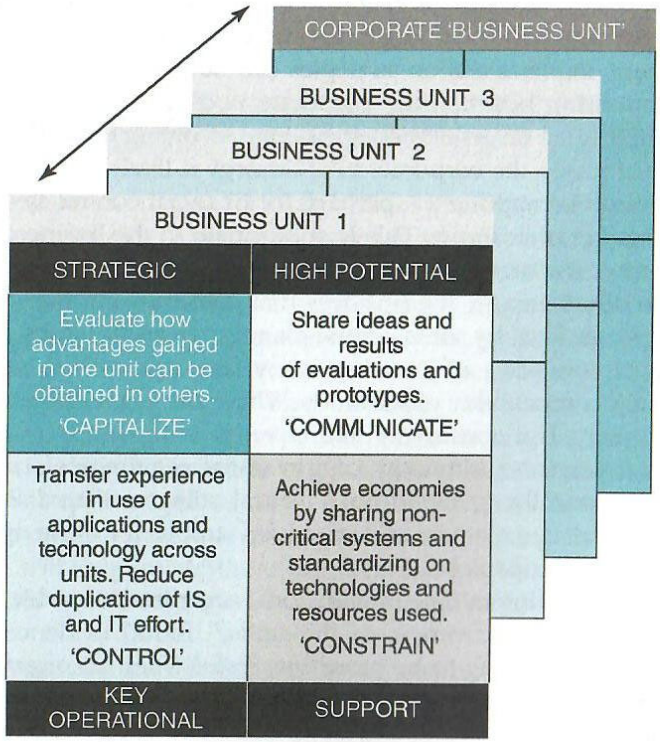


FIGURE 8.8 Portfolio management in a multi-business unit organization.

Class Activity

- Discuss a possible Application Portfolio of a company of your choice
- In reference to Slide 4 (Figure 8.3 – Example Portfolio of a Manufacturing Company)