What is application portfolio – Propose and analysis of all existed, planned and potential application into 4 categories based on assessment of current and future business importance of application.

Why application portfolio – To ensure that all application are managed successfully and deliver expected contribution.

4 categories –

Strategic – Application that is critical to maintain future business strategy and bring to future business success. Strategic application support organization in providing competitive advantages. Must rapid development to meet business objective. Must flexible system that can be adopted in future as business evolves.

Example: Customer relationship management, sales forecasting, market analysis.

High potential – Application that may be important for organization to achieving future success. Mainly consist of new business idea or technological which may create opportunity to gain future advantages against competitor, but yet unproven. Rapid evaluation of prototype and avoid wasting resource on failure.

Example: Data warehouse, product profitability analysis.

Key operational – Application on which the organization currently depends for success. Application with balancing cost with benefits and business risks. Sustain existing business operation and helping to avoid any disadvantages.

Example: Production control, order processing, material purchasing. (ATM for bank)

Support – Valuable application but not critical to business success. Most effective cost and resource among information system. Improve business efficiency and management effectiveness but do not provide competitive advantages.

Example: Human resources, budget, payroll management.

Enterprise System:

- Collect data from different firm functions and store data in single central database for use in nearly all firm business activity.
- Resolves problem of fragmented, redundant data and system.
- Integrate key business process of entire firm into single software system that enables information flow seamlessly through organization.
- Helps coordination of daily activities, operational efficiency, efficient response to customer order, and provide valuable information for improving management decision making.
- Challenge to enterprise application
    - i) Highly expense to purchase and implement
    - ii) Require fundamental changes on technology, business process and organization,
    - iii) Require data standardization ,management and cleansing.
- Next generation enterprise system
    - i) make application flexible, web enabled
    - ii) open source application
    - iii) integrates multiple application to deliver seamless experience. Example order to cash process

Supply chain management system (SCM) – Supply chain (network of organization and processes for purchase raw material, process them into product and distributing the product)

- An enterprise software help manage firm relationship with complicated supply chain with many supplier
- Share information about orders, production, inventory level, delivery of product and service.
    - i) Upstream supply chain – organization and process for managing relationship with firm supplier, supplier suppliers.
    - ii) Downstream supply chain – organization and process for delivering product to customers.

- What SCM helps firm – Track status of order, check inventory availability and monitor inventory level, reduce transportation, warehousing cost, Plan production based on actual customer demand, rapidly communication changes in product design.
- Business value of SCM – match supply to demand, reduce inventory level, improve delivery service, increase sales, reduce supply chain cost, speed product time to market.
- Problems in supply chain and its effect
    i) Untimely information cause waste of company operating expenses.
    ii) Uncertainty can cause manufacturer keep safety stock(lack of flexibility in supply chain) and bullwhip effect(inaccurate information that cause minor fluctuation for a product demands(participant slightly overstock related inventory because of "just in case") across entity in supply chain which create excess inventory for distributor, manufacturer and supplier)
- 2 types of supply chain management system
    i) Supply chain planning system – demand planning(determine how much product a business need to satisfy customer needs), optimize resources, establish inventory level
    ii) Supply chain execution system – manage flows of product through distribution center and warehouse.
- Global supply chain issue – global supply chain needs greater geographical distance and time difference. More complex price issues (local taxes, transportation). Foreign government regulations.
- Hence, internet help companies to manage their global supply chain and production issue.
- Push Based Model(build to stock) – schedule based on best guesses of demand
- Sequential supply chain – information and materials flow sequentially from company to company
- Pull based model(demand driven) – customer order trigger event in supply chain
- Concurrent supply chain – information flows in much direction simultaneously among member of supply chain network.

- Supply chain management system facilitates customer response, allowing business driven more by customer demand. From push based sequential model to pull based concurrent model.

Customer relationship management system (CRM)

- Use information system to coordinate all business process interaction with customers in sales, marketing and service.
- What CRM do – Capture and integrate customer data from all over the organization, Provide a single place to analyze data about customer, Distribute customer information to various system and customer touch points across enterprise, provide single enterprise view of customers.
- modules of CRM

i) Sales force automation – sales outlook and contact information, sales quote generation capabilities

ii) Customer service – assigning and managing customer service request

iii) Marketing – capturing customer data, scheduling and tracking direct marketing mailing or email.

- Business value of Customer relationship management – increase customer satisfaction, effective marketing, reduce customer stop using or purchasing the company product, reduce direct marketing cost.
- Helps firms identify high value customers.
- Types of CRM

i) Operational CRM – customer facing application such as sales force automation, call center and customer service support, and marketing automation

ii) Analytical CRM – analyze customer based on data warehouse populate by data output from operational CRM application. Calculate Customer lifetime value

Enhancing decision making

- Improving hundred or thousands of decision can adds up become large annual value in business.
- Type of decision
    - i) Unstructured – Decision maker must provide judgment, evaluation to solve problem. Done By senior management level. Example: Decide long term goal, approve capital budget, decide entrance or exit from market.
    - ii) Semi Structured - Only part of problem has clear answer provided by accepted procedure. Done By Middle management level. Example: develop departmental budget, design marketing plan.
    - iii) Structured decision – repetitive and routine, involve definite procedure for handling so do not have to treated the each time as new. Done by operational management level. Example restock inventory, determine special offer to customer.
- GIS(Geographic information system) – DSS that use visualization technology to analyze and display data in form of digitized map. For decision required knowledge about geographic distribution of people or other resources. Example: help local government calculate emergency response time of natural disasters.
- of decision makers. Increasing meeting size.
- Decision support system

i) Management information system(MIS) – Helps monitor and control business by providing information on firm current performance and provide answer for routine question with predefined procedure.

ii) Decision support system(DSS) – support unstructured and semi structured decision making by using external information from MIS and TPS.

- Model driven decision support system – voyage estimating system
- Data driven decision support system – business intelligence application, data mining to analyze large pool of data.

iii) Executive support system – give senior management level an overview of their company. Focus on important performance indication. Integrate data from different functional system.

- Enable senior management level to review more data in less time with greater clarity. Improve management performance. Monitor activities of lower unit and review their performance.

iv) Group decision support system(GDSS) – interactive system to facilitate solution of unstructured problems by group. Provide a group with electronic environment for collective decision making.

Information System strategy – define organization requirement or demand for information system to support overall business strategy. Define investment and changes required to achieve benefit.

- Why IS strategy plan

i) Major corporate change – new owner, management team which alter Information system roles to matching new needs of new business

ii) External competitive opportunities or threat – emerge of new market or new product

iii) Evolution change in Information system – information system experience evolutionary change.

- Process of developing IS strategic plan

i) Capturing business environment issue and challenge using SWOT, Porter Five Force model. To understand industry structure and success criteria.

ii) Analyze existing IS and consider its potential and performance.

iii) Review firm business strategic plan.

iv) Identify generic strategic to deal with competitive force the firm should adopt to achieve mission, vision and objective. Example: low cost leadership, product differentiation, focus on market niche, strengthen customer and supplier intimacy.

v) Evaluate existing operation with perspective to 6 reason why invest IT on organization. (Operational excellence, new product, customer and supplier intimacy, improve decision making, competitive advantages, survival)

vi) Recommend IS strategic plan that use various information system align to business plan. Plan include, Transaction processing system, management

information system, decision support system, customer relationship management system, supply chain management system, enterprise system.

vii) Summarise future information system requirement according to application portfolio(support, key operational, strategic and high potential)

IS strategy documents

i) Purpose of IS strategy – for example key change in business

ii) Overview of business strategy – objective and critical success factor and analysis of competitive force(SWOT)

iii) Further detail of critical success factor and new information system opportunities.

iv) Summary of opportunities and issues.

v) Review of current application – portfolio and status. Resource implication and available.

vi) Future application portfolio – resource and cost estimate of the investment of the application

vii) Issue arising from IS strategy – things require senior management level attention

Role of information system in business(Why IS)

i) Operational excellence- improve efficiency results high profits. IS helps improve efficiency and productivity.

ii) New product, service and business model

iii) Customer and supplier intimacy – customer who being served well will become repeat customer and purchase more. Close relationship with supplier result in low cost.

iv) Improve decision making – real time data improve ability of manager to make decision. Update manager with real time data on customer feedback.

v) Competitive advantages – having advantages over competitor by charging less for superior product and better response and performance.

vi) Survival – to keeping up with competitor. Example introduction of ATM

IS from functional perspective

i) Sales and marketing

ii) Manufacturing and production

iii) Finance and accounting

iv) Human resources

IS from constituency perspective

i) Transaction processing system – perform and record daily routine and transaction to conduct business. Serve operational management level. Source of data to other system

ii) Management information system

iii) Decision support system

iv) Executive support system

Knowledge management system – support process for create, store and apply knowledge. Collect internal knowledge and link to external knowledge. Managing digital knowledge object.

Porter Five force

i) Competitive rivalry within industry –

ii) Threat of new entrant –

iii) Bargaining power of customer

iv) Bargaining power of supplier

v) Threat of substitute –

Buyers	Increase switching costs Categorize buyer
Suppliers	Avoid switching costs Backward integration
New Entrants	Entry barriers Entry deterrents
Substitution	Relative price-performance Enhance product features
Rivalry	New basis of competition Shared IT (collaborate to lower cost)