

# Turbulence – Competitive Business envt

3 powerful forces altered the business landscape

- Globalisation

- Competition in world markets
- Global workgroups
- Mgt and control in global marketplace

- Transformation of industrial economies

- Knowledge and information based economies

- Transformation of the enterprise

- Flattening, decentralization, location independence, collaborative work and teamwork

# What is an IS

- IS is an inter-related components working together to collect, process and output information to support an organization's decision making
- From a biz perspective, an IS is an org and mgt solution, to a challenge
- KKD's definition
  - Collect
  - Process
  - Output information to support decision making, coordination, control, analysis etc

# Why IS

- Information is everything (critical asset)
- IS have become essential for organizations in turbulent times
- To create competitive and efficient firms
- manage global corporations
- To deliver better products and services to customers in better ways

# Diagram of IS

# Formal vs informal, Computerized vs Manual

- Formal systems – structured methodologies to collect, process and output data. E.g. E-Bay' auction systems
- Informal e.g. office gossip network
- Computer-based IS
- Manual IS

# Business Perspective of IS

- All IS are organizational and mgt solutions to challenges posed by the envt
- Mgr must understand :
  - Organization dimension:
    - Organizations comprises of pple, processes, structures, SOPs, politics, cultures etc
  - Technology dimension
  - Management dimension:
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# Challenges to building an IS in Org

- Challenges to building and using IS in an org:
  - Designing systems that are competitive and efficient:
    - How can my IS be strategic
  - Understanding the systems requirements of a global business envt:
    - Need for IS to deal with multi languages, cultures, standards and reporting formats
  - Creating an information architecture and IT infrastructure that supports the organisation's goals
    - Challenges of computerization (phobias, job losses etc)
  - Determining the business value of IS
    - Investment justification in IS (ROI issues)
  - Designing systems that pple can control, understand and use in an ethical manner:
    - Illegal and unhealthy uses of IS

# Types of IS

- 3 organisational levels – strategic, management and operational

- Use the pyramid diagram

## 1. Strategic level systems

- ESS: E.g profit planning, personnel planning, 5-year budget forecasting, 5-year opnal plans etc

## 2. MIS level systems. E.g sales mgt, annual budgeting, inventory systems etc

## 3. DSS: cost analysis, sales region analysis

## 4. KWS: various workstations for engineering, graphic and managerial



# Types of IS contd

- Office systems
  - Word processing, document imaging etc
- TPS
  - Basic business systems serving the opns of the org
  - Example are payroll system, Order tracking, account payable, acct receivable, material movement control etc
  - Very central to an org business e.g Bank system going down or UPS tracking system not working

# TPS in details

## 5 Functional categories of TPS

- Sales/marketing: sales order system, market research systems
- Manufacturing/production systems: MRP, Purchase Order Processing,
- Finance/Accounting: AP, AR, cash mgt, budgeting
- HR: Payroll, employee record mgt, career path
- Other types: University reg system, transcript system, etc

# KWS

- KWS aid knowledge workers
  - Who are knowledge workers
  - Create new information and knowledge in the ent
- Office Systems aid data workers
  - Process rather than create information
  - Office systems improve productivity of data workers
  - Word processing, DTP, document imaging and digital filing

# MIS

- Loosely used
  - Study of info sys in business and mgt
  - Specific category of info sys serving mgt level functions
  - As a dept or function
- MIS summarizes the report on a coy's opn using data from TPS
- Uses data from internal and not external events
- Serves routine (weekly, monthly, quarterly etc) questions specified in advance and with predefined procedure for answering them
- Give example

# MIS from TPS databases

- Illustration of how MIS obtain data from TPSs or other corporate databases
- The illustration shows 3 TPS systems supplying summarized transaction data at the end of a time period to the MIS reporting system
- Mgrs gain access to organizational data thru MIS which provide them with appropriate reports
- Most MIS are inflexible and have little analytical power
- Use simple routines (summaries and comparisons as opposed to sophisticated math or statistical models)

# DSS

- Also serves mgt level of the org
- Helps mgrs make decisions that are unique, rapidly changing and not easily specified in advance, hence procedure for arriving at a soln may not be fully predefined
- Uses internal info from TPS and MIS, also bring in external info (eg stock prices, inflation, product prices of competition etc)
- Have more analytical power than MIS by design since they are built with a variety of models to analyse data, condense large amount of data into a form that can be analysed by decision makers
- Very interactive, users can change assumptions, ask questions and include new data sources
- Give example of Maersk voyage estimating system to develop bids for shipping contracts
- Given a customer delivery schedule and freight rate, which vessel should be assigned at what rate for max profit

# ESS

- Used to make decision and serves the strategic level of the firm
- Address non-routine, unstructured decisions requiring judgement, evaluation and insight b/c there is no agreed-on procedure for reaching a decision
- Only provides a generalized computing and communications envt and not a fixed systems capability
- Designed to incorporate external infor and also draws summarized info from TPS
- Employs graphics heavily and deliver pictorials at great speed
- While DSS are analytical, ESS use less analytical models and have easy to use GUIs
- Answers several what queries. E.g What business should we be in. Discussion on how ESS can answer the question
- Pictorial of ESS system showing internal and external in blocks and 3 workstations

# Systems from a Functional Perspective

- Sales and Marketing Systems
  - E.g Order processing, sales trend forecasting etc
- Manufacturing and Production Systems
  - E.g CAD (Knowledge level); Facilities location system (Strategic); CU planning (Mgt level)
- Finance and Accounting
  - AR, AP, GL, CM, FA etc
- HRIS
  - Payroll, HR, Pension, Career pathing, T&D etc



# Integration of IS

- Several IS are disparate and in deptal silos
- Integration is a challenge
- Integration is costly
- ERP tends to provide some form
- ERP has own challenges
- No right level of integration
- Systems integration is big business

# Overview of Mgt concepts and Principles

- Review of the microeconomic definition of the organization:
  - Inputs from the envt (capital, labour, info) are transformed by the firm thru business processes into products and services (outputs to the envt) which are in turn consumed by the envt to supply additional primary production factors as inputs in a feedback loop
  - Draw diagram
  - Input ---> Organizational (prodn process) ---> Output

# Organisation Structure and Culture

- Structure

- Max Weber in 1911 described orgs as bureaucracies and that all org have certain structural features:
  - Clear division of labour
  - Hierarchy
  - Explicit rules and procedures
  - Impartial judgements
  - Technical qualifications for positions
  - Maximum efficiency using limited resources
- Popular types include entrepreneurial (small startups), machine bureaucracy (mid-size manufacturing); divisionalized bureaucracy (GE, GM); Professional bureaucracy (law firms, hospitals); Adhocracy (small consulting firms)

# Organisation Politics

- Political resistance is one of the greatest difficulties in bringing about change esp introduction of new IS
- Most IS that bring about significant change in goals, procedures, productivity, and personnel are politically charged and will equally attract political oppositions
- Invite a member of class to describe a political influence on a new or on-going IS project

# Organization Culture

- Organizational culture has impact on IS as it is a powerful restraint on change
- Sometimes, a new IS may be the change needed to oppose an existing org culture
- Give example

# Business Processes

- Pick and describe activities and biz processes of
  - Manufacturing
  - Service (banks, consulting, real estate etc)
  - Government
  - Religious organizations

# Role of Mgrs in an org

- Managerial roles are expectations of the activities that mgr should perform in an org
- Mintzberg identified 10 roles categorized into 3
  - Interpersonal role: figureheads motivating, counselling, liason, among member of mgt and team
  - Informational: Nerve centre of the org performing information dissemination and spokesperson
  - Decisional: Allocate resources, resolves conflict, entrepreneurs, make decisions etc – most challenging

# Managerial Role and Supporting systems

- Interpersonal
  - Figurehead ==> No IS
  - Leader (interpersonal) =====> No IS
  - Liason =====> Electronic communication
- Informational
  - Nerve center =====>MIS
  - Disseminator (info) =====> Mail, office systems
  - Spokesperson (processing) =====> office systems
- Decisional
  - Entrepreneur ==> No IS
  - Disturbance handler ==> No IS
  - Resource allocator ==> DSS
  - Negotiator ==> No IS



# Info Systems Services

- IS dept is the formal organizational unit responsible for the IS function in the org
- IS dept comprises of
  - IT infrastructure
    - Hardware
    - Software, Networks
    - Data Storage
  - IS Specialists
    - CIO, Mgrs, Analyst, Designers, Programmers, Network specialists, Dbase administrators, Clerical

# Management Theories and IS

- These economic and behavioral theories explain how changes in IT has affected org.
- Economic theories:
  - Microeconomic model of firm: IT as a factor of production, which can be substituted for labor and capital. Hence in the microeconomic model of firm, IT should result in decline in middle level mgrs and clerical workers as IT subs for labor
  - Transaction cost theory: IT helps firms contract in size by reducing transaction cost. Transaction costs are costs incurred in locating and communicating with distant suppliers, monitoring contract compliance, buying insurance etc. Firms tried to reduce transaction costs by getting bigger e.g Ford Motors. Draw diagram T1 and T2
    - IT thru networks can help firms reduce market participation costs. Eg. By using computer links to external suppliers, Chrysler sourced >70% of its parts from outside. GE also reduced staff from 400K to 230K and revenue went up by 150%

# How IT affect Organizations

- IT reduces internal mgt cost
  - Agency theory: This theory views firms as nexus of contracts among self interested individuals rather than as a unified profit maximizing entity. Employers employ agents (employees) to perform work on his behalf. Agents must be monitored and supervised otherwise they will pursue their own interests rather than the interest of the owner. As firms grow in size, agency cost increases b/c more resources are required for coordination.
  - IT can reduce agency cost by allowing mgrs to acquire and analyse infor more efficiently and reduce overall mgt costs (e.g coordination cost by SOP or inventory control system)
  - Draw diagram A1 and A2

# How IT affect Org

- Behavioral theories
  - Uses theories from sociology, psychology and pol science to describe behaviour of firms. Little evidence of impact of IS using behavioural theories
    - IT can impact hierarchy of decision making thru MIS and intranet to send infor from up to down or vice versa. Flat organization
    - IT can make teams more effective via, performance mgt systems, VC, etc
    - Since IT changes the org structure and culture, there are often resistance to them. Use diamond diagram of task, pple, structure, tech. All four must change at once
    - See <http://www.durodoye.blogspot.com/> for mgt decision problem

# IS Project Management

- Next class
- BLOG URL - <http://infosys-741.blogspot.com/>
- STOP

# INFORMATION SYSTEMS PROJECT MANAGEMENT

- Describes how info sys are conceived, built and installed with attention to
  - Organisational design
  - BPR
  - Organization change
- Establishing the business value of information systems
- How to ensure that new systems are linked to org's business plans and info requirements

# Linking info systems with Business Plans

- Business vision cascaded into objectives and plans
- Once specific projects have been selected within the overall strategic plan, an info system plan is developed
  - An info sys plan is a roadmap indicating the direction of systems devt, the rationale, the current situation, the mgt strategy, the implementatn plan and the budget

# Info Sys Plan

## 1. Statement of corporate goals

- Purpose of the plan
  - Overview of plan contents
  - Changes in firm's current situation
  - Firm's strategic plan
  - Current business structure (Key business challenge)
  - Key business processes (editorial (print & web), production (web and print), IT, sales and marketing, finance and audit, etc)
  - Mgt strategy (Mgt's response to key issue with IT)
- 2. Strategic business plan
    - Current situation (rising acquisition cost, production cost, distr, readership, ad revenue)
    - Current business organization
    - Changing environments (your readers are changing, are u?)
    - Major goals of the business plan



# Info Sys Plan Contd

- 3. Current systems
  - Major systems supporting business functions and processes
  - Major infrastructure capabilities
    - Hardware
    - Software
    - Database
    - Telecommunications and internet
  - Difficulties meeting business requirements
  - Anticipated future demands

## what does Pressmart do?



- Delivers your magazine on multiple distribution channels
- Pay-as-you-go hosted service
- You supply pre-press pages
- Pressmart manages production, hosting, delivery, subscriptions, ads & analytics

# Info Sys Plan

## 4. New Developments

- New Systems project
  - Project Description
  - Business rationale
  - Application's role in strategy
- New infrastructure capabilities required
  - Hardware
  - Software
  - Database
  - Telecommunications and Internet

# Info Sys Plan

- 5. Mgt Strategy

- Acquisition plans (e.g ePaper acquisition plan or ASP mode)
- Milestones and timings (phasing, web, ePaper, Mobile)
- Organization re-alignment (ABC, BPA alignment,
- Internal reorganisation (web office, Editor Online, etc) helpdesk setup
- Mgt controls (3 options for mobile, helpdesk arrangement etc
- Major training initiatives (Pressmart training, web officer training,
- HRM strategy (managing IT staff, managing shift opns,
- Communication strategy
- Project Management concepts and tools

- Implementation Plan

- Anticipated difficulties in implementation plan (uploading, cyber attacks, etc
- Progress report (how often, contents, who to write, distribution etc

# Info Sys Plan Contd

## 6. Budget Requirements

- Requirements (resource (item) listing
- Potential savings
- Financing
- Acquisition and implementation cost

# Info Sys Plan

- Potential Impact and Benefit
  - Benefits of the system
    - Go where readers go
    - Deliver where readers need it
    - Pulls precious new search traffic
    - Discover new readers (thru sharing and blogging etc)
    - Unlimited shelf life
    - 360 degrees fulfilment process (from reading to payment)
  - Impact and implications
  - Business Value of the IS
    - NPV
    - Payback
    - ROI
    - PAT etc

## Establishing Organisational Info Requirements

- Organisations need short and long term info requirements to do an info sys plan
- 2 Methodologies for establishing the info requirements of an organisation are:
  - Enterprise analysis (Business Systems Planning)
  - Strategic analysis (Critical Success Factor)

# Business Systems Planning

- Information can be obtained by looking at the org in terms of units, functions, processes, & data elements
- Developed by IBM in the 60s believes that a thorough understanding of the org can give its info requirements
- Method is to do an info needs and seeking behaviour study by:
  - Asking mgrs how they get and use info, where they get info, data needs, what are their objectives, how they make decisions etc
  - Data elements are then organised into logical application groups (groups of data elements that supports related sets of org processes (Data matrices)
  - Matrix shows what infor are required to support a particular process, who creates the data and who uses it
- Weaknesses of business systems planning include:
  - The enormous amount of data is expensive to collect and analyze
  - Most data/info are collected from snr mgrs and little from lower level staff
  - Focus on existing infor rather than new approaches on how biz should be conducted



# Business Systems Planning diagram

- Processes on the y axis
  - Hire to Fire: Selection, Induction, Perf evaluation, Training, Reward and recognition, Career pathing
- Data classes on the x axis (for HR processes)
  - Candidate profile, job specs, org manuals, appraisal forms, policies and procedures, performance evaluation minutes etc
    - Identify Creators of data and Users of data
- 
- Demand Creation to payment collection
  - Demand creation, sales, payment, after sales support
- Data Classes
  - Psychological and sociological profiling of potential customers, product knowledge documentations, price list, product features, payment systems, notice slips, contact info leaflets etc

# Strategic Analysis or CSF

- An org info requirements are determined by a small no of CSFs of mgrs and if these goals are attained, the firm's success is guaranteed (See Rockart 1979)
- CSFs are shaped by industry, firm, manager, and envt (regulatory, stakeholders etc)
- Strategic in that it is broader compared to BSP
- A premise is that there is a small number of objectives that mgrs can focus to achieve org goals
- Principal method used for data collection is interview with top mgrs to identify goals and resulting CSFs and personal CSFs are aggregated to form the firm's CSF
- The new IS is then built to deliver info on these CSFs

# Example is my thesis

- Ask class to map the long list with business goals:
  - New product development
  - Customer Service Excellence
  - Improved market share
  - Enhanced business performance
  - Improved compliance

# CSF

- Advantages

- Takes into account the envt which is critical to the org cos mgrs considers who envtal analysis shape their info needs
- Particularly suitable for the development of DSS and ESS
- Unlike enterprise analysis, focus org attention to how info should be handled

- Shortcomings

- Aggregation process is not structured to derive a clear company pattern
- Confusion among interviewers and interviewees btw individual and organizational CSFs
- Biased towards top mgrs cos they are the ones interviewed
- Does not guarantee that the fast dynamics of changing requirements of envt and mgrs are adequately addressed.

# Process for CSF

- Mgr 1      2      3      4CSFs
- Aggregate and analyse individual CSFs
- Develop agreement on coy CSFs
- Define Coy CSFs
  - Define DSS and Dbases
  - Use CSFs to develop info system priorities

STOP

# Info Sys Devt & Org Change

- IS as powerful instruments for org change enabling:
  - Global networks
    - International division of labour
    - Global reach of firms
    - Cost of global coordination decline
    - Transaction costs decline
  - Enterprise Networks
    - Collaborative work and teamwork
    - Dispersed task forces are dominant work groups
    - Agency cost decline
    - Business processes are changed

# Info Sys Devt & Org Change

- IS as powerful instruments for org change enabling:
  - Distributed Computing
    - Empowerment: Individuals and workgroups now have info to act and take decisions
    - Business processes are redesigned and streamlined
    - Mgt costs decline
    - Hierarchy and centralization decline
  - Portable computing
    - Virtual org: Work is no longer tied to geographic locations
    - Knowledge and info can be delivered anywhere they are needed
    - Real estate is less essential and org costs decline

# Info Sys Devt & Org Change

- IS as powerful instruments for org change enabling:
  - GUI
    - Accessibility: Everyone in the org can access info and knowledge
    - Workflows can be automated and all can contribute from remote locations
    - Org costs decline as work moves from paper to digital images, docs, and voice



# Info Sys Project Planning, Implementation and Control

- Managing Change in IS Project Management:
  - The introduction or alteration of an information system has a powerful behavioural and organizational impact. It transforms the way various individuals and groups interact. Changes in the way information is defined, accessed and used to manage the org's resources often lead to new distributions of authority and power. This internal organisational change breeds resistance and opposition and can lead to the demise of an otherwise good system.
  - A large percentage of information systems fails to deliver benefits or solve the problems for which they are intended because the process of organisational change associated with systems building was not properly addressed. Successful systems building requires careful planning and change mgt .

# Information Systems Implementation

- Implementation Success and Failure:  
Managerial and organizational Factors
  - Whether systems are successful or not depends on a number of Managerial and organizational Factors such as role of user, degree of management support, manner in which the systems project manages complexity and risk and the management of the implementation process itself all have profound impact on systems outcome
- User involvement and influence:
  - Heavy user involvements affords the user to mould system according to their priorities and bus requirements.
  - Been active participants affords them to be react +vely to the completed system
  - Communication problems are a major reason why users are driven out of implementation process or why users req are not properly incorporated
  - Users and info systems professionals often have different backgrounds, interests priorities and sometime goals. - User-designer communication gap
  - While the user is looking for the best way to get the problem solved, the info prof is looking for sophisticated tech solns in which hardware or software efficiency is optimized at the expense of ease of use or org effectiveness

# User-Designer Comm gap

- User concerns

- Will the system deliver the info I need for my work?
- How quickly can I access the data
- How easily can I retrieve the data
- How much clerical work do I need to enter the data into the system
- How will the opn of the system fit into my daily business schedule

- Designer Concerns

- How much disk storage space will the master file consume
- How many lines of program will it take to perform the function?
- How can we cut down on CPU time when we run the system?
- What is the most efficient way of storing this piece of data
- What DBMS should we use

# 2. Mgt Support

- Mgt Support
  - Perceived +vely by users and tech once mgt support is there
  - Funding dimension
  - Org changes to implement or amend/realign new processes or changes
- Level of Complexity & Risk
  - Sysytems differs dramatically in their complxity, scope, size, org and tech components
  - Some systems are more likely to fail cos they carry a higher risk than others
  -

- 3 key dimensions that influences the level of project risk (McFarlan, 1981)
  - Project Size: the larger the project in terms of Naira spent, size of implementation staff, time allocated for implementation, no foorg units affected etc, the higher the risk cos of coordination and mgt of so many things
  - Project Structure: Highly structured projects run a much lower risk than those whose requirements are relatively undefined, fluid, and constantly changing. When requirements are clear and straightforward, outputs and processes can be easily defined
  - Experience with Tech: Familiarity of project team and info sys staff with hardware, software, networking tech or DBMS affect project risks
- The higher the level of risk, the more likely the implementation efforts will fail

# Project Management of Info Systems

Not all aspect of the Implementation process can be easily controlled or planned (Alter and Ginzberg 1978). However, the chances for the system success can be increased by anticipating potential Implementation problems and applying appropriate corrective strategies. Strategies also have been devised for ensuring that users play an appropriate role throughout the Implementation period and for managing the organizational change process. Various project management, requirements gathering, and planning methodologies have been developed specific categories of problems.

- Increasing user involvement

The level of user involvement should vary depending on both the development methodology user and the project's risk level. Tools to involve users-external integration tools-consist of ways to link the work of the implementation teams to users at all organizational levels. For example, users can be made active members or leaders of systems development project teams or placed in charge of system training and installation.

## – Overcoming User Resistance

Systems development is not entirely rational process. Users leading design activities have used their position to further private interests and to gain power rather than to promote organizational objectives (Franz and Robey, 1984). Participation in implementation activities may not be enough to overcome the problem of user resistance. The implementation process demands organizational change. Such change may be resisted because different users may be affected by the system in different ways. Some users may welcome the new system because it brings changes they perceive as beneficial to them, whereas, other may resist these changes because they believe the shifts are detrimental to their interest (Joshi, 1991).

If use is voluntary, users may avoid it, if mandatory, error rate will go up, disruptions, even sabotage. Implementation strategy must avoid counterimplementation

- **Counterimplementation**

- A deliberate strategy to thwart the Implementation of Information System or an innovation in an organization
- Strategies to overcome user resistance:
  - User participation (elicit commitment and improve design)
  - User education (training)
  - Management coercion (edits, policies, SOPs)
  - User incentives
- Important to deal with any pending org issues (eg salary)



- Managing technical complexity
  - Project with high level of technology benefits from internal integration tools - project management techniques that help the Implementation team operate as a cohesive unit.
  - Key issues include:
    - High admin and tech experience
    - Team and project meetings (frequency and composition and minutes distribution)
    - Outsource skills not resident in the org

# IS Project Planning and Control Tools

- Large projects will benefit from the use of formal planning and control tools. With project management techniques such as PERT (Program Evaluation and Review Technique) or Gantt charts, a detailed plan can be developed.
  - PERT lists specific activities that make up a project, their duration and the activities that must be completed before a specific activity can start
  - A Gantt chart visually represents the sequence and timing of different tasks in a development project as well as their resource requirements. Gantt charts do not show dependencies or ordering of projects or impact of one task behind schedule on another task
- These project management can help managers identify bottlenecks and determine the impacts problems will have on project completion times. Standard control techniques can be used to chart project progress against budget and target dates, so that deviations can be spotted and the implementation can make adjustments to meet their original schedule. Periodic formal status reports against the plan will show the extent of progress

# PM Software Tools

- Features capabilities for defining and ordering tasks, assigning resources to tasks, establishing starting and ending dates to tasks, tracking progress, and facilitating modifications to tasks and resources. They create Gantt and PERT charts
- MS Project is widely used and when used with MS Office Project Server and SharePoint, it can be highly collaborative
- EasyProjects.NET and Vertabase are web-based PM tools

# Controlling Risk Factors

- One way implementation can be improved is by adjusting the project mgt strategy to the risk level inherent in each project. Thus, projects with little structure may involve users fully at all stages, whereas more formal projects may need to adjust user involvement according to the project phase. User participation may not be appropriate in some situations. For example, users may react -vely to a new design even though its overall benefit outweighs its drawbacks. Some individual may stand to loose power (or money) as a result of design decisions (Robey and Markus, 1984) so that participation in design may actually increase resentment and resistance.
- Project using complex, new tech are riskier and require emphasis on internal integration tools. Large projects can reduce risk by increasing the use of formal planning and control tools

# Project Management

- What is the importance of project management?
- Poorly managed projects end up
  - Cost overruns
  - Time slippage
  - Technical shortfalls impairing performance
  - Failure to obtain anticipated benefits
- How badly are projects managed?
  - 29% of all tech projects are completed on time, budget with all features (Standish Group Consultancy; Levinson 2006)
  - Btw 30-40% of all software projects are 'runaway' projects

# PM Objectives

- A project is a planned series of activities for achieving a specific business objective
- IS projects may include
  - Devt of new systems
  - Enhancement of existing systems
  - Upgrade/replacement of firms IS infrastructure
- PM refers to the application of knowledge, skills, tools and techniques to achieve specific targets within specified budget and time constraints
- PM activities include project planning, assessing risk, estimating resources required organising work, acquiring human and material resources, assigning tasks, directing activities, controlling project execution, reporting progress and analysing results

# PM Objectives

- PM must deal with 5 major variables
  - Scope: what is or not included in a project
  - Time: Amount of time required to complete a project
  - Cost: Time multiplied by cost of human resources. Also include h/w, s/w and work spaces, telecoms. Hence need for a budget
  - Quality: How well the end results satisfies the obj. IS quality metrics include improved organisational performance, accuracy and timeliness of information produced and ease of use
  - Risk: Potential problems that will threaten the success of a project. May impact time, budget or prevent accomplishment of the project altogether

# Mgt Structure for IS projects

- Use the pyramid (snr mgt; middle mgt; opnal mgt)
  - Corporate strategic planning group
  - IS steering committee
  - Project mgt
  - Project team



# Selecting Projects

- The main driver should be the firms strategy
- IS plan is used to identify the IS that will deliver the most business value. The plan serves as a roadmap indicating the direction of systems devt (purpose of the plan), the rationale, current systems etc
- 3 major approaches
  - CSF
  - Portfolio analysis
  - Scoring models

# Portfolio Analysis

- Quadrant
  - Benefit on y and Risk on x
  - Q1: High benefit, high risk: Cautiously examine
  - Q2: Low benefit, high risk: Avoid
  - Q3: Low risk, high benefit: Identify and develop
  - Q4: Low benefit, low risk: Routine projects e.g
- Firms where portfolio analysis is aligned with business strategy have been found to have superior returns on their IT objectives and better alignment of IT and business obj and better organisation-wide coordination of IT investments (Jeffrey and Leliveld, 2004)

# Scoring Models

- A scoring model is useful for selecting projects where many criteria must be considered. It assigns weights to various features of a system and then calculates totals. Eg selection of 2 ERPs
- The most important outcome of a scoring model is not the score, but agreement on the criteria used judge a system
- For example, ERP selection can use these criteria
  - Order processing  $W=4$ ; Score=67 ERP score =  $4 \times 67$
  - Online order entry  $W=3$ ; Score =76
  - Inventory mgt (4 criteria)
  - Warehousing ( 3 criteria)
    - Derive total score

# IS cost and Benefits

- Does a particular IS delivers sufficient returns to justify its costs?
  - Cost (h/w, s/w, telecoms, services, personnel)
  - Tangible benefits: can be quantified and assigned a monetary value. Eg. Reduced workforce, reduced facility cost, lower opnal cost, increased sales
  - Intangible benefits: Not immediately quantified but can lead to quantifiable benefits in the long run. E.g. more info, improved decision making, higher client satisfaction etc
- Concept of TCO: Measures cost of IS projects beyond initial cost e.g open source CMS vs proprietary CMS solutions

# Understanding the business value of information systems

- Does a particular IS investment produce sufficient returns to justify its costs?
  - 1. Cost benefit ratio
  - 2. Net Present Value
  - 3. ROI
- Limitations of financial models (not able to measure intangible benefits)
- Non financial and strategic considerations
  - Portfolio analysis
  - Scoring models