

1. Introduction to the Business Organisation

- a) **Organisation:** can be defined as a **socio-technical system** whereby people work coherently to accomplish specific goals that evolve from the organisation's purpose.
- i. From a systems approach, organisations are **Open Systems**; they interact with the surrounding environment.
 - ii. An organisation's **Purpose** leads logically to a vision and a mission statement of the way in which the organisation plans to realise its stated purpose.
 - iii. For instance, the purpose underlying a software vending organisation is to sell software but the vision of the software vendor may be to become the most profitable company in the software industry.
 - iv. **Goals** (or aims): are general statements that chart the course of a business organisation
 - v. **Objectives:** More specific statements, usually with quantifiable components and time scales that are derived from the goals. *Eg. To increase sales by 100% in the following year.*
 - vi. **Business Organisation** has a set of **goals and objectives** to be achieved. Hence, a business organisation should be structured in the most effective and efficient way to fully utilise its resources – capital, human resources, knowledge in products and services, and both external and internal information – to achieve its strategic goals.
 - vii. Organisations can be **structured** in many ways and there are many ways in which communication networks can operate within them (and communication is the “Glue” that holds an organisation together).
 - viii. The **Structure** of an organisation is usually depicted by its **organisation chart**, which identifies its management structure according to the organisational units, location, functions and their reporting relationships.
 1. **Centralised Organisation** (tall structure): Decision-making authority is usually tightly controlled by top management, but decision making itself is often delegated to middle or lower management who are constrained by often exhaustive policy and procedure packages.
 2. **Decentralised Organisation** (flat structure): Decision making is often delegated to middle-level or lower-level management, but this does not mean that the top management does not make decisions. In fact, coordinating decision making in flat organisations is essential, as no part can become “Greater” than the whole. Decisions in the units of a decentralised organisation must be kept in line with the purpose, vision, mission, goals and objectives of the organisation as a whole.
- b) **Business Function:** Are the basic building blocks of a business enterprise and that they exist in various organisational structures. A Business Function is a **group of activities and processes** for supporting a specific part of the mission of the enterprise, and each activity or process is usually supported by a set of **procedures**.
- i. **Marketing** is a functional area that performs marketing research to identify and determine what products and services customers want.
 - ii. **Human resources** is a functional area that provides services in support of business functions such as recruitment, selection, training, appraisal and promotion of staff.
 - iii. **Finance** is a functional area responsible for financial accounting, management accounting, corporate finance and investment management.
 1. **Financial accounting** section undertakes responsibilities in bookkeeping, maintenance of audit trails, and preparation of trial balances, balance sheets and profit and loss statements.
 2. **Management Accounting** undertakes all tasks relating to management reporting of labour and material costing, allocation of overhead expenditure, job and process costing, cost-volume-profit analysis, budgeting, variance analysis, capital investment decisions and organisation controls.
 - iv. **MIS** is a functional area responsible for the development, maintenance and smooth running of computer systems that capitalise on information technology to achieve organizational objectives.
 - v. **Sales** department sells whatever products and services the business organisation offers.
 - vi. **Production** is a functional area responsible for production operations and quality assurance.
 - vii. **Purchasing** is a functional area responsible for the sourcing, supply and logistics of goods and raw materials that meet the stipulated cost, quality and inventory policy requirements while matching the production schedule.

c) Management Process & Business Process Re-Engineering:

- i. **Management Process:** Procedures that make up the basic duties of a business manager. There are four basic management process, namely,
 1. **Planning:** The decision of who is going to do what by when, or what is going to be done when by whom, depending on whether the management style is process-oriented or product-oriented. The resulting business plan (or a draft) should include:
 - a. Plan objectives;
 - b. Core activities (tasks) and procedures;
 - c. Initiatives and requirements; and
 - d. Key performance indicators and appraisal methods.
 2. **Organising:** Organising is deciding what task is to be achieved by when. This process includes obtaining necessary resources like finance and equipment, and organising and scheduling each facet of the plan. It is usually required to break tasks into smaller units (the sub-tasks) and allocate sub-tasks to capable individuals with definite completion dates.
 3. **Directing:** Following the organising stage, the activities of the plan are carried out in the directing stage. The managers implement or execute the plan as it was organised, and resources and personnel are deployed according to the pre-determined time sequence. The process leader (who may not be the functional manager) leads, motivates, delegates and coordinates in order to complete the process.
 4. **Controlling:** The process of setting a standard, measuring the actual performance, and reviewing the variance, which is the difference between the actual and the standard. If the variance is beyond the pre-defined tolerance level, some adjustments or remedial actions must be arranged. The standard could be a capital budget, sales volume or defect level.
- ii. **Business Process:** A set of logically related tasks performed to achieve a defined business outcome. We can identify business processes in an organisation by using **Value Chain Model**. BP has two characteristics:
 1. It has **customers** (internal or external); and
 2. It **crosses functional boundaries** (it communicates between functions through its inputs and outputs).

d) Business Mission & Vision:

- i. **Purpose:** a reason for being. Every organisation has a purpose.
- ii. **Mission:** in an organisation can be viewed as how it will achieve its purpose or an overall statement of its business direction. A mission is a broad “Philosophical” statement that ties an organisation to certain activities and to economic, social, ethical or political ends. *Eg. “To be the World’s Number One Airline.”*
 1. **Business Strategy Model of Mission:** is a strategic tool that defines the business’ commercial rationale and target market.
 2. **Philosophy & Ethics Model of Mission:** the cultural “Glue” enabling an organisation to function as a collective unit. This cultural glue includes strong norms and values that influence the way in which people behave, how they work together and how they pursue the goals of the organisation
 3. **Holistic Model of Mission:** Has four elements
 - a. **Purpose:** Addresses why an organisation exists. For whose benefit is all this effort being put in?
 - b. **Strategy:** Provides the commercial logic for the organisation.
 - c. **Behaviour Standards:** Thus, behaviour standards are the norms and rules of “The way we do things around here”
 - d. **Values:** Beliefs and moral principles that lie behind the behaviour standards or the organisation’s culture.
- iii. **Vision:** Required when an organisation wants to change itself in some radical way. A vision statement describes the image of an organisation’s possible and desirable future state. It represents a view of a realistic, credible, attractive future for the organisation – a condition that is better in some important ways than what exists at present. Vision refers to a future state while mission normally refers to the present.



e) Business Objectives and Goals:

- i. **Objectives:** Are precise, well-specified targets that are measurable and a business enterprise intends to achieve them by a given time. One target (goal) may give rise to several objectives. *Eg. "Increase sales by 40% per year"*
- ii. **Goals:** Are general statements about the direction in which a business enterprise intends to go, without stating specific targets to be reached by particular times. Mission of an enterprise is the highest level statement of goals (and objectives). *Eg. A vague statement such as "Be a market leader"*
 1. **Long-term goals:** relate to extended periods, usually five years or more into the future.
 2. **Intermediate goals** deal with one to five years.
 3. **Short-term goals:** (likely objectives) deal with period of less than or up to a year.

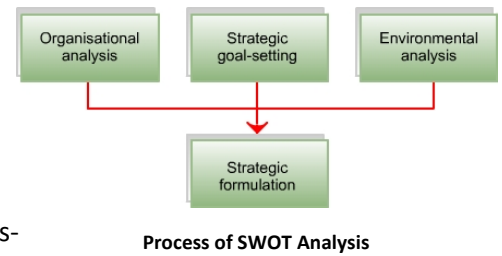
2. Strategic Planning

- a) **Planning:** An analytical process which involves an assessment of the future, the determination of desired goals and objectives in the context of that future, the development of alternative courses of action to achieve such objectives and the selection of courses of action among those alternatives.
- b) **Strategy:** The determination of the basic long-term goals of an enterprise and the adoption of courses of actions and the allocation of resources necessary to achieve these goals. It is presented as policies whereby the organisation elaborates its goals and objectives.
 - i. **Corporate strategy** is concerned with what businesses a corporation does and does not, wish to enter.
 - ii. **Business strategy** is concerned with achieving the goals of a particular business within a corporation. It is the determination of how a company will compete in a given business and position itself among its competitors.
 - iii. **Functional strategies** deal with major aspects of the business' functional operations: marketing, production, finance, human resources and research and development (R&D).
- c) **Policy:** An elaboration of strategy so as to apply effectively internal resources and thereby achieve strategic objectives and goals. While policy is a guide to action, strategy is the action itself.
- d) **Strategic Planning:** The process of planning the future strategy of an organisation and documenting the strategy in an implementation plan.
 - i. **Effective strategic planning** deals with two relevant dimensions:
 1. Responding to changes in the **external environment** and
 2. Creatively deploying **internal resources** to improve the competitive position of the enterprise.
 - ii. **Advantages of Strategic Planning (Benefits of, Needs for Strategic Planning):**
 1. It is a communication process and so improves the coordination in every organisation practising it
 2. It motivates managers.
 3. It leads to better organisational decisions.
 4. It provides a way of controlling a business.
 - iii. **Strategic Plan:** This document is the outcome of the strategy planning process. A mechanism for putting into effect strategic decisions. Reflects the contingencies of the business as defined by realistic business scenarios and is articulated by senior management. Four components:
 1. A definition of the **desired future scope** of the organisation, including a statement of its business and what kind of company it is and it should be.
 2. A definition of the **competitive advantage** of the company, including its distinctive competence in relation to its competitors and the market niche it intends to occupy.
 3. A statement of **mission, goals** and **objectives** and the measures to evaluate performance.
 4. A statement of how **resources** that are needed to implement and execute the plan will be allocated.
 - iv. **Strategic Planning Process** analyses and determines where the organisation intends to be in the long term, usually three or more years in the future. Three key tasks:
 1. Identify a **distinctive competence** (something the organisation do really well) for the organisation.
 2. Find a **niche** (social and economic situation org is well suited) in the organisation's environment.
 3. Find the **best match** between the organisation's distinctive **competencies** and its available **niches**.

v. **SWOT Analysis:** (Strength, Weakness, Opportunities, Threats)

Popular Method of business strategy planning. It has four steps:

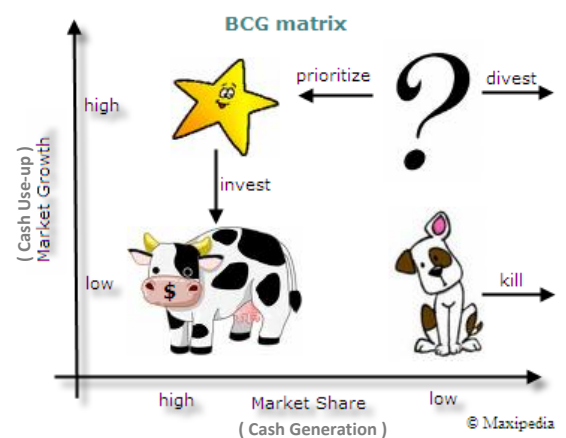
1. **Setting Strategic Goals** (long-term goals derived directly from org's mission statement)
2. **Environmental Analysis:** Involves scanning the environment for threats and opportunities. BCG Matrix and Industry Attractiveness-Business Strength Matrix can be used here.
3. **Organisational Analysis:** to better understand their own company's strengths and weaknesses.
4. **Formulating Business Strategy**
 - a. **Business Strategy** consists of a set of well-coordinated action programmes and policies aimed at securing a long-term sustainable competitive advantage. These programmes are defined at two different levels of specificity:
 - b. Formulation of business strategy is accomplished by **matching environmental threats and opportunities with organisational strengths and weaknesses.** Most important part.



vi. **Strategic Planning Tools:** There are two:

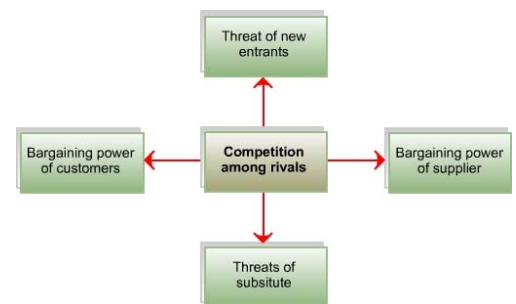
1. **Boston Consulting Group (BCG) Matrix:** a tool based on business portfolio analysis.

- a. Assume that there is a company with multiple product lines. Such companies have products at virtually every point in the product life cycle. For example, the management of a firm may use the BCG matrix to evaluate the market growth rate and relative market shares for each of their products.
- b. **There are three basic insights from the BCG matrix:**
 - i. The graphical matrix representation provides a powerful and compact visualisation of the strengths of the firm's portfolio of businesses, or a whole business.
 - ii. It helps identify the ability for cash generation as well as the needs of cash for each business.
 - iii. Because of the distinct quality of each business, it can suggest unique strategic directions.



2. **Porters Competitive Strategy Framework (Porters 5 Forces Model):** in the fight for market share, competition does not come only from the other players. Rather, competition in an industry is rooted in the underlying economics and competitive forces exerted from beyond the established combatants in a particular industry.

- a. **McFarlan proposed five questions for assessing the strategic impact of IT on a firm:** If the answer to a particular question is "Yes," a strategic opportunity exists that requires the attention of top management.
 - i. **Threat of new entrants:** Can IT be used to build barriers against new entrants?
 - ii. **Customers:** Can IT be used to build switching costs (increase customer reliance on systems)?
 - iii. **Competitors:** Can IT change the basis of competition?
 - iv. **Suppliers:** Can IT change the balance of power in supplier relationships?
 - v. **Substitutes:** Can IT be used to generate new products?
- b. **Porter shows three potentially successful generic approaches for competing:**
 - i. **Cost leadership:** A firm has many avenues for pursuing this strategy, including economies of scale, using or developing new technology and developing preferential access to raw materials. Where competition has been sluggish, becoming a cost leader may revolutionise the entire business



Porters Five Forces Model

- ii. **Differentiation:** Requires the organisation to seek uniqueness in the eyes of the customers, which justifies their paying a premium price for the product.
- iii. **Focus:** or niche strategy requires a narrow competitive scope. The organisation focuses on a small target group and services this group or segment to the exclusion of others.

3. Strategic Use of Information Technology

- a) **Strategic Information Systems (SIS):** enable a firm to gain a competitive edge or to undermine its rival's advantages.
- b) **Information System & Information Technology:**
 - i. **Information System (IS):** can be defined as a set of **procedures** that collects or retrieves, processes, stores and disseminates information to support organisational decision making and control.
 - ii. **Information Technology (IT):** can be defined as a powerful **collection of elements** which include computer hardware, software, telecommunication networks and related technologies.
- c) **IS & IT Strategy:**
 - i. **IS strategy** refers to what an organisation should do with the technology; and
 - ii. **IT strategy:** how they do it.
- d) **Evolution of Information Systems:** Can be seen in four eras, which are:
 - i. **Centralised Era (Data Processing Era):** This era is dominated by information systems that function primarily as the processing of predefined (business) transactions to produce fixed-format reports on schedule.
 - 1. Technologically speaking, the era is marked by the development of **Direct Access Storage Devices (DASD)** and **Database Management Systems (DBMS)**, and **Management Information Systems (MIS)**.
 - 2. But these systems, apart from processing the transaction data, did not meet the information needs of managers and professionals as organisations began to flatten and globalisation began to take shape in the late 1970s.
 - ii. **Decentralised Era:** It was the emergence of personal computers and low-cost software around 1980 that opened the era of decentralisation.
 - 1. People with abundant supplies of user-friendly software tools found themselves able to develop applications (small information systems) for their own use even without the leadership of skilful technicians or formal methodologies for software development.
 - 2. The control of development and application was decentralised to individual managers who were able to solve their ad hoc problems by building simple but useful software solutions with little effort on their PCs or mainframes.
 - 3. **Decision Support Systems (DSS):** These systems were not simply to provide higher quality information from the use of decision models and databases; rather, they were meant to improve the quality of the managerial decision process itself.
 - 4. **Executive Information Systems (EIS):** Systems that were specifically designed for top management.
 - iii. **Architecture Era:** The continued proliferation of PC and communications technologies, including the Internet technology in the period of 1985 to 1996, offered corporations a chance to re-adjust the role played by IT.
 - 1. In the early years of this era, SIS might have just been a **Management Information System (MIS)**.
 - 2. It was distinguished from the other MIS in the way that it directly supported or shaped the competitive strategy of the organisation.
 - 3. With the introduction of **Business Process Re-engineering (BPR)**, management started to realise that simply focusing on the strategic advantages brought about by an MIS was not sufficient.
 - iv. **Internet Era:** The Internet arrived long before 1997, which is the beginning of the Internet era. However, it didn't receive as much attention as it does today when every organisation (business, government or otherwise) tries to get the benefit out of the Internet.

- e) **IT as a Strategic Resource:** The emerging new role of IT within organisations is the result of two concurrent and perhaps equally powerful forces:
- i. **Technology push:** force has emerged partly due to significant improvement in the price-performance ratio of IT and partly due to increased connectivity capabilities over time.
 - ii. **Competitive pull:** has emerged because markets are becoming highly competitive and the traditional sources of competitive advantages are diminishing as competitors strive to attain parity with one another.
- f) **IT & Competitive Strategy:** IT exerts a strong influence on organisations.
- i. It changes the way work is done, whether it is production, coordination or managerial work.
 - ii. It integrates business functions at all levels and gives rise to organisational teams, electronic alliances and **electronic markets**.
 - iii. It permits a high degree of simultaneous collaboration and competition in the industry.
 - iv. It presents new strategic opportunities and changes organisational structure.
 - v. It, therefore, poses a major challenge for management today to catalyse the necessary transformation of their organisation.
- g) **Competitive Advantage & Competitive Necessity:**
- i. **Competitive Advantage:** To gain competitive advantage or beat the other competitors.
 - ii. **Competitive Necessity:** To stay in the business or maintain competition
 - iii. **Sustainable Advantage:** One competitive advantage that makes its possessor immune from attack by competitors attempting to duplicate, emulate or copy it
- h) **Risks of Using IT Strategically:** Even though IT can provide competitive advantage when it is appropriately applied, it can also cause disasters when it is misapplied, neglected or ignored. Some are:
- i. Its failure to meet real customer needs,
 - ii. Its failure to be defensible,
 - iii. It may wake a sleeping giant,
 - iv. It may trigger litigation or regulation, and
 - v. It may be rejected by customer or organisational culture.
- i) **Inter-Organisational System (IOS):** A special type of communication-intensive information system whose development, operation and use are shared by two or more organisations. These organisations may be part of a cooperative (like a banking network) or may be in a customer-supplier relationship.
- i. **IOS has eight characteristics:**
 1. They require "Partners." Thus, at least two parties are needed to create an IOS.
 2. Standards have a major role in IOS development
 3. Education of potential "Partners" is very important to overcome ignorance and political issues.
 4. Third parties are often required, either to educate people; or to develop and maintain the standards; or often to provide links between the separate systems of the partners.
 5. Work must be synchronised, otherwise these systems cannot be maintained or upgraded.
 6. Work procedures need re-evaluation after IOS is in use. As IOS may change the way business is done.
 7. Technology is not a major hurdle compared to the relationship issues.
 8. IOS development requires more openness, especially when industry standards are being employed.
 - ii. **Technological, economic and organisational changes leading to growth of IOSs:**
 1. Need for fast, reliable information exchange in response to rapid changing markets, products & services
 2. Evolution of guidelines, standards and protocols.
 3. Penetration of IT into internal business processes.
 4. Technical quality and capability of IT.
 5. Use of IT to distinguish product and/or organisation.

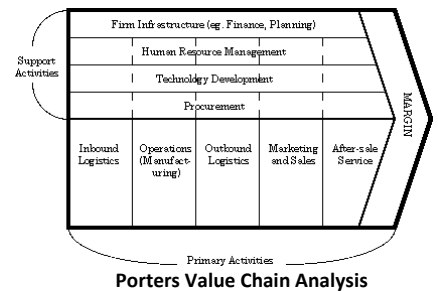
- j) **Information Partnerships:** Through such a partnership, diverse companies can offer novel incentives and services or participate in joint marketing programmes. They can make small companies look, feel and act big, reaching for customers once beyond their grasp.
- k) **IOS and Competitive Advantage:** The proliferation of IOS suggests that many organisations are finding it to be an important source of competitive advantage. The competitive advantage stems fundamentally from two factors:
- Comparative efficiency:** Allows an organisation to produce its products or services more cheaply than its competitors; and
 - Bargaining power:** Allows a firm to resolve bargaining situations with its customers and suppliers to its own advantage.
- l) **Strategic Grid:** Identifies the role of IT in an organisation. Help to position an organisation appropriately
- At the beginning of an analysis, specific IT applications or business units are positioned within different quadrants on the strategic grid.
 - The axis **Operational Dependence** mean to measure the negative consequence resulted as a failure of an existing IT application; while we mean to measure the competitive advantages or new opportunities created if a new IT system is developed.
 - Strategic grid** can also be used to evaluate IT portfolios and IT development plans. IT applications in each of the four quadrants bear certain specific characteristics.

iv. **The four Quadrants:**

- Strategic:** These systems are designed to make the business stand out from its competitors. *Eg. banking business*
- Factory:** These systems are what an organisation is relying on in its daily operation of business and customer services. *Eg. mining industry*
- Support:** They are usually systems that handle routine administrative tasks such as accounting and personnel. *Eg. paper manufacturing*
- Turnaround:** These are usually implementations of new concepts, perhaps resulting from a R&D proposal. *Eg. retailing*



m) **Value Chain Analysis (Value Added Model):** A systematic way of analysing and evaluating the process of creating goods or services. A generic model for business activity analysis. There are two classes of activities:



i. **Primary Activities:**

- Inbound logistics** include the receiving, warehousing, and inventory control of input materials.
- Operations** are the value-creating activities that transform the inputs into the final product.
- Outbound logistics** are the activities required to get the finished product to the customer, including warehousing, order fulfillment, etc.
- Marketing & Sales** are those activities associated with getting buyers to purchase the product, including channel selection, advertising, pricing, etc.
- Service activities** are those that maintain and enhance the product's value including customer support, repair services, etc.

ii. **Support Activities:**

- Procurement** - purchasing the raw materials and other inputs used in the value-creating activities.
- Technology Development** - includes research and development, process automation, and other technology development used to support the value-chain activities.
- Human Resource Management** - the activities associated with recruiting, development, and compensation of employees.
- Firm Infrastructure** - includes activities such as finance, legal, quality management, etc.

- n) **Customer Resource Life Cycle:** can be used to identify and implement SIS by focusing on how to help customers acquire and use a product or service. The customer resource life cycle model provides a much more detailed analysis for identifying and categorising SIS in comparison with other tools. From the customer's point of view the life of a product can be divided into four phases:
- i. **Determine need:**
 1. **Establish requirements:** An SIS can explain product(s) to customers to help them assess their requirements.
 2. **Determine characteristics of product needed:** An SIS can help customers choose product features and then configure a product for them.
 - ii. **Acquire product:**
 1. **Locate supplier:** An SIS from an intermediary, like publishers of guides, may be useful.
 2. **Order product:** Many SIS provide this service, such as airline reservation systems, American Hospital Supply's ASAP system, etc.
 3. **Authorise and pay for product:** An SIS may be a credit card verification system, or a debit card processing system.
 4. **Acquire product:** An example is ATMs which can also deliver airline tickets.
 5. **Test and accept product:** An example is a pharmacist who checks a new prescription against other drugs a customer is taking for possible drug interaction problems.
 - iii. **Manage its use:**
 1. **Maintain needed inventory:** Example: A supplier keeping track of shipments for JIT systems.
 2. **Monitor product:** Example: Monitoring purchases and returns of unsold magazines by magazine publishers.
 3. **Upgrade product:** Example: Sending automatically latest volumes in a book series by book publishers such as Reader's Digest.
 4. **Repair product:** Example: Sending reminders to customers whose maintenance contracts of electric appliances are about to expire.
 - iv. **Dispose of product:**
 1. **Dispose or transfer product:** Example: Self-service checkout in some hotels.
 2. **Account for product:** Example: Travel agents maintaining travel records of large corporate clients to describe how travel money is being spent.
- o) **Strategic Options Generator:** This model reduces the multiplicity of strategic actions undertaken by organisations, to only five generic thrusts – **differentiation, cost, innovation, growth** and **alliance**.
- i. **Strategic thrust:** A major move that an enterprise undertakes in its search for advantage, is a critical interface joining competitive strategy with IT.
 - ii. **Three basic classes of strategic targets:** **suppliers**, **customers**, and **competitors**.

4. Nature of Information Systems Strategy

- a) **Stages of growth model:** Nolan and Gibson presented a way of understanding the developing sophistication of IT use and management, which is based on the premise that any organisation will move through various stages of maturity with respect to the use and management of IT.
- i. Initial growth model consisted:
 1. **Initiation**, when computers were first introduced to business organizations to help with tedious work. Management saw IS as a means to make cost savings, no attention given.
 2. **Expansion**, when IS enjoyed a sudden, uncontrolled rise in many business functions. Management didn't see the problems of over-ambitious projects, thus resulted in large IT expenditure
 3. **Formalisation**, Concerned senior management wished to justify IS spending and staff are trimmed down and IS budgets are centralised, IS development becomes difficult.
 4. **Maturity**, senior management learns to leverage between stability and innovation. IS development has reached a stage of balance.

- ii. After stage 4, Nolan found that putting together all growth experience as one stage was inadequate and he divided this into three stages.
 1. **Integration**, the control levels of Stage 3 are lowered to encourage innovation, reorganised to allow IS staff to become more involved in the organisation.
 2. **Data administration**, which identifies the business value of cross-function database access. IS strategies includes IS architecture that makes up intra- and/or inter-organisational Systems.
 3. **Maturity**, aims at planning and developing IT in coordination with business development

Table 4.1: Stages of Growth Model (adapted from Robson 1997, 147)

	Stage 1 Expansion	Stage 2 Formalisation	Stage 3 Control	Stage 4 Integration	Stage 5 Data Administration	Stage 6 Maturity
<i>Planning and Control</i>	Lax	More Lax	Formalised planning and control	Tailored plans and control systems	Shared data and common systems	Strategic planning
<i>IS Organisation</i>	Specialised for technology learning	User-oriented programmers	Middle management	User/IS account teams	Data administration	Data resource Management
<i>User Awareness</i>	"Hand off"	Superficially enthusiastic	Arbitrarily held accountable	Accountability learning	Steady rise	Acceptance of joint user and IS accountability
<i>Expenditure Level</i>	Steady from zero base	Steep rise	Steady rise	Steep rise	Steady rise	Appropriate

iii. **Advantages of Nolan’s stage Model**

- It is simple.
- It is easy to understand, to use, and to see that some natural development is to be expected.
- It is relevant to acknowledge the past in the present.
- It acknowledges that different IT can be in different developmental stages and hence need different management treatment..

iv. **Points to consider Nolan’s stage Model**

- Modelling the development of IT is a very useful exercise, whether the model is a simple or complex one.
- Stages-of-growth approach is a simple way of modelling IT maturity as the basis for IS planning.
- Nolan’s stage model was proposed at the time when was no Internet.
- Organisations are going into business operations over the Web.
- The Internet is a convenient place to restructure the relationships between customers, suppliers, partners and internal activities of an enterprise.
- Corporate information systems are connected to form cross-organisational or inter-organisational systems.

b) **IS planning** is a broadly based management activity that provides direction within an organisational setting for the development and use of information systems and technology.(Finnegan and Fahy, 1993). **IS planning** is the process to make and integrate decisions with respect to IT support throughout the organisation, using formal procedures and producing articulate results. (O’Connor, 1993)

i. **IS strategic planning** is a long-term and usually covers the next 3-5 years or more, although the exact timeframe is dependent upon the volatility (Frequency of change) of the organisation and its environment.

ii. **The evolution of IS planning can be divided into six stages:**

0. **No IS planning:** main goal of management when introducing computers into their business was to reduce the cost of processing information, mainly in areas of payroll and accounting. Business introduces Electronic Data Processing (EDP) department which would simply receive IT requests.
1. **First generation -> Demand-driven IS planning:** As more apps grew, to handle it, EDP focused on the efficient allocation of resources, with return on investment used as a priority ranking methodology. (Characteristics: Demand-driven, Return-on-investment, Efficient allocation of resources)
2. **Second generation -> Methodological IS planning:** some methodologies were developed that were specifically aimed at the phase prior to system development. IBM’s Business Systems Planning (BSP), and Critical Success Factors (CSF). These methodologies took the view that information is a corporate

resource and should be planned on a corporation-wide basis. It stressed top-down planning of data and localized design of systems in different user areas, as well as top management's involvement in IS planning. Senior positions such as Chief Information Officer(CIO) is made.

(Characteristics: Organisation-wide planning methodologies, Data modelling approach, Response to business strategy, efficient allocation of resources, Business Systems Planning (BSP), Critical Success Factors (CSF))

3. **Third generation -> Organisation-wide IS planning:** organisational IS progress map (in terms of IS growth stages) was used to analyse opportunities for improved IS support and growth as well as the quality of the IT infrastructure.(Characteristics: Long-term IS planning, IT infrastructure, IS progress map, Improved IS support and growth Stages theory of IS development)
4. **Fourth generation -> IS and business strategy interaction:** IS and business strategies had higher level of interaction, it had to recognise the explicit potential for IT to shape and support the organisation's competitive strategy, such as using competitive analysis.
(Characteristics: Externally oriented planning methodologies, Competitive analysis, IS and business strategy interaction, Support and strategic approach to IS)
5. **Fifth generation -> integrated** methodologies: the use of integrated methodologies, where planning reflects the joint IT possibilities of strategic support and strategic weapons.
(Characteristics; Integrated planning methodologies,Dynamic business strategy,Strategic possibility frameworks, Need for IS staff development plans,Extended enterprise)

iii. **Why IS planning necessary:** Rapid changes in technology, Scarcity of human and other organisational resources, Competitive pressure to use as competitive advantage, Integrated IS applications such as data networks & video conferencing, Validation of corporate plans such as limitation in IT support programmes will make CP unfeasible, Senior management involvement for better communication and control, Delivered systems quality, Inability to maintain delivered systems, Lack of standards, Lack of system/data integrity, Cost and time overruns in IS development projects

iv. **Objectives of IS planning**

- To ensure that all IS efforts are consistent with, contribute towards and eventually influence organisational strategies.
- To ensure that IS applications address critical organisational information processing needs in terms of both opportunities and problems.
- To define and communicate the role of the IS function throughout the organisation.
- To convey to the organisation the extent of current and future IS resource commitments.
- To enhance communication between the IS function, top management and users.
- To ensure that a solid systems foundation or IT architecture is built, on which more sophisticated IS applications can be based.
- To cultivate a core group of organisational proponents: i.e. users and top management.
- To control and direct the acquisition and deployment of IS resources.
- To ensure that the IS staff remains technologically current.

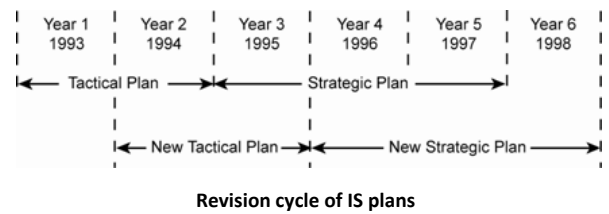
v. **Levels of IS planning**

1. **IS Strategic Planning:** The process of ensuring alignment between business plans and objectives and IS plans and objectives, and/or the process of identifying IS applications that will provide the organisation with a competitive edge. IS strategic planning has, as its focus, effectiveness and efficiency
2. **IS Tactical Planning:** Focuses on prioritising and scheduling IS development efforts, establishing action plans for development and performance measures to be used during operational planning.
3. **IS Operational Planning:** Involves the development of specific detailed plans for each IS project. It entails the selection and approval of IS projects to commence within the next planning year, and the actual planning, monitoring and control of specific systems development efforts.

Table 4.2: Differences between Planning Levels

	Strategic	Tactical	Operational
<i>Focus</i>	Alignment/impact effectiveness	Prioritisation/scheduling Resource allocation	Commitment
<i>Planning Cycle</i>	Episodic (3–5 years)	1–2 years	12 months (or less)
<i>Perspective</i>	Business	IS	IS
<i>Participants</i>	IS management and top management steering committee	Steering committee/ IS staff	IS staff/ management
<i>Scope</i>	Narrow — critical issues and projects	Broad — all projects	Narrow — individual projects

4. **IS Planning Cycle:** In most organisations, planning activity is regularly scheduled and is seasonal (Frenzel 1992, 103). Generally the tactical plans are developed first so they can be approved just prior to the beginning of the tactical period. Thus, the tactical plan for the next two years is developed and approved during the few months prior to the beginning of the new year.



vi. **Benefits of IS planning**

- Provide a means of control over a growing expense.
- helps to ensure that the information needs of the organisation are considered during the course of normal business planning
- The integration of the IS plan and the overall business plan allows the organisation to ensure that the IS plan supports the business direction of the firm.
- allows IS management to focus on key business results rather than just on completing projects.
- provides a sound base for IS project selection and prioritisation, and facilitates effective IS resource allocation
- Helps in the IS control process.
- provides a basis for performance assessment
- Raise the awareness of IS potential throughout the organisation, and also increase IS staff awareness of the business.
- provide financial benefits to the organisation and improve its performance

vii. **What makes good IS planning:** The success of an IS planning exercise very much depends upon the quality of IS planners within the planning team.

- Affinity for strategic thinking
- Company loyalty
- Self-starting ability
- Communications skills and “salesmanship”
- Background in accounting, forecasting and quantitative methods
- IS background

5. Information System Strategic Planning

a) **Why strategic planning fails:**

- i. Failure to tie technology to institutional mission and priorities
- ii. Failure to get the right people on board
- iii. Excessive focus on technical details
- iv. Lack of suitable leadership

b) **Critical Success Factors Analysis:** Can be applied to support both IS planning and requirements analysis. Designed to provide a structured method to help managers determine their CSFs and thus identify their information needs.

c) **Critical Success Factors (CSF):** The limited number of areas in which satisfactory results will ensure competitive performance for the individual, department or organisation. These are the few key areas where “Things must go right” for the business to flourish and the manager’s goals to be attained. CSFs are time dependent.

Industry	Examples of CSFs
Automobile industry	Fuel economy Image Efficient dealer network Manufacturing cost control
Food processing	Effective advertising Good distribution New product development
Life insurance company	Development of agency personnel Advertising effectiveness Productivity of clerical operations Marketing strategy
Software house	Product innovation Quality of sales and user literature Worldwide marketing and service Ease of use of products

i. **Five primary sources of CSF:**

1. Industry-based factors,
2. Competitive strategy, industry position and geographic location,
3. Environmental factors,
4. Temporal factors and
5. Managerial position.



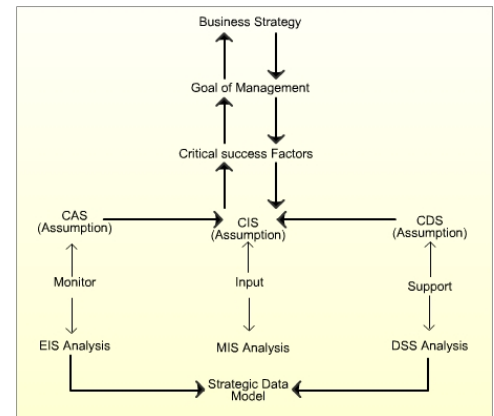
Hierarchy of CSF's

ii. **There are three major uses of the CSF:**

1. To help an individual manager determine his or her information needs.
2. To aid an organisation in its IS planning process.
3. To aid an organisation in its organisational strategic planning process.

iii. **The main strengths of CSF analysis:** are that it provides **effective support to planning** since the consideration of critical activities develops management insights and CSF analysis may serve as the effective top level for a subsequent structured analysis.

iv. **Extended CSF Analysis:** method uses the CSF analysis to provide the planning context in three critical domains: information, decision and assumption.



Extended CSF analysis

v. **Critical Information Set (CIS):** defines those measures and associated data necessary to monitor, analyse and control the CSFs.

vi. **Critical Decision Set (CDS):** defines those decision processes that will most affect the successful achievement of a CSF.

d) Business Systems Planning (BSP): is an IBM proprietary technique devised initially for IBM internal use; later, it was sold as a service to its customers in the mid-1970s. Earliest formal IS planning method and is now the most widely known. BSP offers a structured approach to IS planning via a number of fairly rigorously defined stages that lead from the identification of business processes to a definition of required data structures. Data are tracked as they flow throughout the organisation by the business activity support or from which they result.

i. **The objectives of BSP are to:**

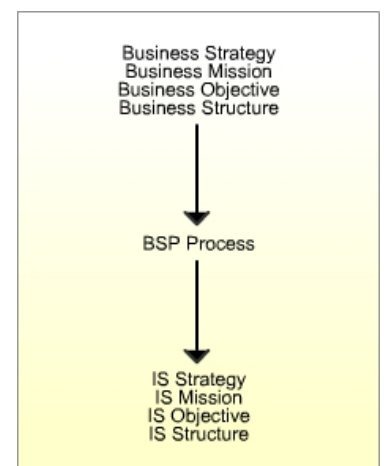
1. Translate business strategy into IS strategy (as shown in Figure 5.3).
2. Impartially determine IS priorities.
3. Plan long-life information systems based on enduring business processes.
4. Manage IT resources to support business goals.
5. Assign IT resources to high-return projects.
6. Improve relationships between the IS department and users by providing systems that meet their requirements.
7. Improve understanding of the need for IS planning.

ii. **Four major activities of BSP:**

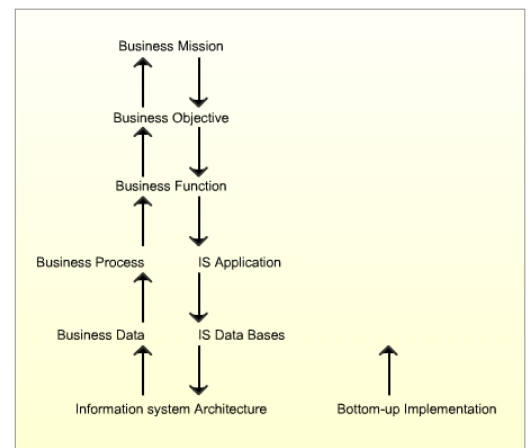
1. Documenting the business activities
2. Defining the business processes
3. Defining the data necessary to support the business processes
4. Defining the information architecture

iii. **13 Major steps to perform in carrying out a BSP study:**

1. Gaining executive commitment
2. Preparing for the study
3. Starting the study
4. Defining business processes



5. Defining business entities and data classes
6. Analysing current IS support
7. Determining the executive perspective
8. Defining findings and conclusions
9. Defining the information architecture
10. Determining architectural priorities
11. Reviewing information resource management
12. Developing recommendations and an action plan
13. Reporting results



Top-down planning with bottom-up implementation.

e) **Earls Multiple Methodology:** Earl realized the complexity of the problem the same way that contemporary IS practitioners did, and he proposed a very comprehensive methodology that provides a basis for analysing all IS planning. **Earl's multiple methodology is top-down clarification, bottom-up evaluation and inside-out innovation.**

i. He highlighted three issues:

1. **Clarification of the business needs and strategy in IS terms** - What is the business strategy and IS strategy;
2. **Evaluation of current IS provision and use** - How to integrate legacy systems; and
3. **Innovation of new strategic opportunities afforded by IT** - What are the operational goals.

ii. **Top Down Classification:** Four step Process

1. **Identification of corporate objectives** – Objectives of all business units should be solicited, agreed upon and clearly stated;
2. **Determination of critical success factors** – CSFs that are needed to achieve the agreed business objectives are suggested and determined after resolving conflicts among different business units;
3. **Decomposition to critical business processes** – The CSFs that were identified are transformed into business processes that can be improved by IS;
4. **Identification of IS and IT** – Details of the IS to support those business processes and the underlying IT infrastructure are analysed and a development plan is decided.

iii. **Bottom-up Evaluation:** Essential for the following reasons:

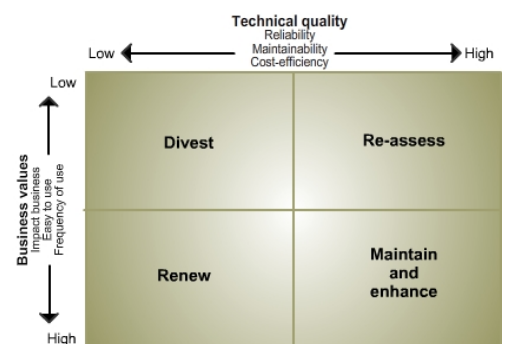
1. To find out the **quality and capacity** of the IS applications (legacy systems) currently being used in the organisation.
2. To demonstrate to top management (the strength and the weakness of) the **current IS status** of the organisation.
3. To identify **components of the current IS that can be improved** for better strategic advantage by simple add-ons rather than a total renovation.



Earl's multiple methodology

f) **Common Weaknesses of IS Planning Methodologies:**

- i. Poor **integration** of business and IS planning
- ii. Lack of **planning** for IS ongoing maintenance requirements
- iii. **Focus on tools and techniques** instead of on real business needs
- iv. **Inability to handle change** or uncertainty
- v. Vision or **architecture is too narrow** and short-ranged



The evaluation process could lead to a systems audit grid

- vi. Obscure or **complex planning processes**
- vii. **Problems without solutions** in any current planning approach
- viii. **Failure to deal effectively with applications integration;**
- ix. **Insufficient evaluation** of applications package options and tradeoffs;
- x. **Lack of effective risk assessment** and management; and
- xi. Failure to make use of existing **Best practices** already proven and public knowledge from other firms in the industry.

6. Implementing Information System Strategic Plan

- a) **IS strategic plan** is the outcome of an IS strategic planning study. The plan is basically a statement of the major initiatives that must be accomplished over a certain period of time in order to move the organisation and its IS department towards a long-term goal.
- b) **IS vision statement** is a written expression of the desired future for information use and management in an organisation.
- c) **IT sourcing** is defined as a significant contribution by external vendors to the physical and/or human resources associated with the entire or specific components of the IT infrastructure in the user organisation.
- d) **Earl's framework for IS strategic planning success** can be grouped into three distinct categories which is method, process and implementation.
- e) **IS Department Responsibilities**
 - i. Provides a secure location for housing and accessing the company's official
 - ii. electronic data records;
 - iii. Maintains computer processing capacity and support for file maintenance and information reporting;
 - iv. Manages a corporate data network that delivers services to departmental and individual workstations linked to its data centre;
 - v. Provides integrated IS development for departments in order to advance organisational strategies
 - vi. IS portfolios and those IS that are central to knowledge management and e-commerce operations would be elaborated with sufficient details on their purposes, functionalities and acquisition.

f) **Documentation of IS Strategic Plan:**

- i. **No standard format** for documenting IS strategic plans.
- ii. Should include an "**executive summary**" as it should be understood by senior managers
- iii. Should include **minimum technical jargon**, specialised terminology should be clearly explained

g) **IBM's Business Systems Planning (BSP) Study Reports:**

- i. Recommends that the final study report be separated into two main sections
 - ii. The most significant findings, conclusions and recommendations should be summarised in the first few pages of the report for the use of the top management.
 - iii. Supporting details should be included later and in the appendixes for other members of the organisation and for team members who will participate in follow-up activities.
- The conclusions, recommendations and action plan should be reviewed with the executive sponsor before the team drafts the final report.

Table 6.1: Contents of the IS Plan for a Major Oil Company

1.	Introduction
2.	Management summary
3.	IT environment
4.	Application systems plan
5.	Resource plan
6.	Resource forecast
7.	Communications plan
8.	Technology forecast
9.	Goals/objectives/actions
10.	IS planning cycle

Table 6.3: Contents of the IS Plan for a Military Agency

1.	Executive summary
2.	Introduction
3.	Threat, information needs and policy
4.	Goals and objectives
5.	Long-term IT architecture
6.	System baseline
7.	Implementation
8.	Glossary

Table 6.4: Potential Topics for a BSP Study Report

Executive summary report	
•	Purpose, scope and objectives
•	Methodology and study team
•	Findings and conclusions
•	Recommendations
•	Action for follow-on activities
Detailed report	
•	Purpose, scope and objectives
•	Method of study
•	Business perspective
•	Information systems perspective
•	Findings and conclusions
•	Statement of findings and conclusions
•	Recommendations
•	Action plan for follow-on projects
•	Appendixes

h) Project Management: A strategic IS plan does not stop after the plan itself is compiled. The implementation phase of the strategic plan should be more important; although strategic management does not always get involved in tedious IS implementation details.

i. Steering Committee: A number of senior managers responsible for overseeing projects that are recommended by the strategic IS plan. These senior managers will probably be led by the organisation's **CIO**.

1. Tasks of the Steering Committee:

- a. Mutual **coordination of individual projects** and linking of these projects with the organisation's strategic policy; and
- b. **Coordination of activities of the project groups** by
 - i. Functioning as a forum for **exchanging the experiences** of the project teams so that they can learn from each other; and
 - ii. Making shifts between current projects occasionally to cater for relocating people and resources where necessary

ii. Project Team: A team of experts, internal or external to the organisation, form a project team to take care of a project identified in the strategic IS plan. Usually composed of IS experts and staff members from the accounting and administrative functions, the project team is responsible for developing the IT infrastructure or information systems as recommended.

1. Skills of Project Team:

- a. Technical or functional skills
- b. Cross-training skills
- c. Interpersonal and conflict resolution skills
- d. Decision-making skills
- e. Learning skills
- f. Leadership skills.

2. Team leader: is selected to report to the steering committee (in most cases)

iii. Assessment: Implementation is successful if the resultant IS or IT infrastructure is capable of producing the expected effect.

1. The **effectiveness** of individual projects can be measured against the **objectives** which were spelt out in their action plans as parts of the strategic IS plan.

2. Utility approach: techniques of assessment using such as the which evaluates an IS from six utilities:

- a. **Possession:** Who receives output?
- b. **Form:** What form (format) of the information is useful to the end users?
- c. **Place:** Where is the information distributed?
- d. **Time:** When is the information delivered?
- e. **Actualisation:** How is the information produced and used? Production of the information is related to system development and maintenance.
- f. **Goal:** Does the output have value in helping the organisation obtain its objectives?

WHY IS FAILS

Issues approaches	"Impact"	"Align"
LEADERSHIP	Critical	Important
<ul style="list-style-type: none"> • Difficult to secure top management commitment for implementation • Success dependent on team leader • Difficult to find team leader meeting criteria • Difficult to obtain top management approval 		
IMPLEMENTATION	Very important	Very important
<ul style="list-style-type: none"> • Requires further analysis • Ignores plan implementation issues • Documentation is inadequate for implementation • No priorities for developing databases • No overall data architecture is determined • No data administration needs addressed 		
RESOURCES	Important	Critical
<ul style="list-style-type: none"> • Methodology lacks sufficient computer support • Planning exercise takes a long time • No training plan for IS department • Difficult to find team members meeting criteria • No financial plan for IS department • Very expensive • No permanent IS planning group • Many support personnel required 		

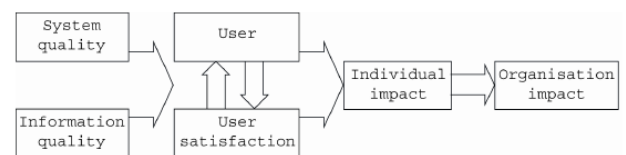


Figure 6.2: IS success model (DeLone and McLean, 1992, p.87)

- i) Out Sourcing:** A significant contribution by external vendors to the physical and/or human resources associated with the entire or specific components of the IT infrastructure in the user organisation.
- i. What Drives Out Sourcing? :**
 1. Management's concern about costs and quality
 2. Breakdown in it performance
 3. Intense supplier pressures
 4. Simplified general management agenda
 5. Financial factors
 6. Corporate culture
 7. Eliminating an internal irritant
 8. Other factors.
 - ii. Serious Problems in Our Sourcing:**
 1. Companies that outsource may become too reliant upon the vendor for information services
 2. Trade secrets or proprietary information may leak out to competitors because an organisation's IS s are being run or developed by outsiders.
 3. The organisation is dependent on the viability of the vendor. A vendor with financial problems or deteriorating services may create severe problems for the client.
 - iii. Key factors that should be considered in selecting an outsourcing vendor :**
 1. **Vendor reputation:** which includes understanding your business and market, and high technology standards
 2. **Quality of service:** which means a clear comparative advantage over in-house service
 3. **Pricing:** (Cost effectiveness) Costs can escalate as processing volume increases or services are added.
- j) Problems in IS strategic planning:**
- i. Leadership issues**
 1. Securing a commitment from top management to implement the IS strategic plan is difficult.
 2. The success of the IS strategic planning methodology is greatly dependent on the team leader.
 3. It is difficult to find a team leader who meets the criteria specified by the IS planning methodology.
 4. It is difficult to convince top management to approve the IS planning methodology.
 - ii. Implementation issues**
 1. Implementing the IS applications and IT architecture identified in the IS plan requires substantial further analysis.
 2. The planning methodology fails to take into account issues related to IS strategic plan implementation.
 - iii. Resource Issues**
 1. The IS planning methodology lacks sufficient automated support.
 2. The IS planning study takes too long.
 3. The IS strategic plan fails to include an overall personnel and training plan for the IS department.
 4. It is difficult to find team members who meet the criteria specified by the planning methodology.
- k) Reasons for Top Management's Disbelief in IT's strategic impact potential:**
- i. Top management lacks awareness.
 - ii. Top management sees use of computers as strictly operational.
 - iii. Top management perceives a credibility gap.
 - iv. Top management doesn't view information as a resource.
 - v. Top management demands financial justification.
 - vi. Top management may be interested in short-term benefits.

l) How to Successfully Convince top management:

- i. Educate top management.
- ii. Market IS management's accomplishments to top management.
- iii. Let the user do the selling.
- iv. Promote a "Business image" for the IS department.
- v. Perform strategic IS planning.

m) Chief Information Officer (CIO): Someone in the IS strategy team capable of liaison with senior management.

n) Earls Framework for IS Strategic Planning Success:

i. Survey of IS strategic planning experiences in 27 companies in the UK (Earl 1993) the major issues relating to failure of IS strategic planning were identified and grouped into three categories:

1. Resource constraints;
2. Lack of full implementation of plan;
3. Lack of top management acceptance;
4. Length of time involved; and
5. Poor user-IS management relationships.



Necessary conditions for successful IS strategic planning

ii. They are grouped into three categories:

1. **Method:** Issues related to method focus on the IS strategic planning technique, procedure or methodology employed.
2. **Process:** Issues related to the IS strategic planning process included:
 - a. Lack of line management participation
 - b. Poor user-IS management relationships
 - c. Inadequate user awareness and education
 - d. Low management ownership of the philosophy and practice of IS strategic planning
3. **Implementation:** The main issues related to implementation were found to be:
 - a. Lack of resource availability
 - b. Management was hesitant
 - c. Technological constraints
 - d. Organisational resistance.