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MODULE OF ENTREPRENEURSHIP

Year IV Computer Science

By:

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And

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1. **Module Code:** CSC 410 **Faculty of Science and Technology**
2. **Module Title: Entrepreneurship**
3. **Year: 4 Credits: 10**
4. **Administering Faculty: Science and technology**
5. **Pre-requisite or co-requisite modules, excluded combinations**
6. **Allocation of study and teaching hours :**

Total student hours : 100	Student Hours	Lecture Hours
Lectures	40	60
Seminars/workshops		
Practical classes/laboratory	15	15
Structured exercises	10	10
Set reading etc.	10	
Self-directed study	10	
Assignments – preparation and writing	5	5
Examination – revision and attendance	10	10
Other: (Invigilation & Marking)		
TOTAL	100	**100**

Course Content

UNIT I: ENTREPRENEURSHIP SKILLS

Chapter 1: Introduction to Entrepreneurship

- Definition of entrepreneurship and Entrepreneur
- Theories and concepts of entrepreneurship
- Types of entrepreneurs
- Characteristics of entrepreneurs
- Role and functions of entrepreneurs

Chapter 2: Entrepreneurial Innovation as Strategy for Change

- Scanning the market , source of innovative opportunity , Actions for building innovation , Identification of Market opportunity , opportunity awareness a priority over innovation
- Bringing Innovation to Market , Funding New Technology
- Innovation Management

Chapter 3: Identification and evaluation of business opportunities

Entrepreneurial process:

- Phase 1 : Identification and Evaluation of the opportunity
- Phase 2: Development of the business Plan
- Phase3 : Determination of required resources
- Phase 4: Management of the resulting Enterprise.

Chapter 4: Forms of Business organization

- Private sector : Sole proprietor , Partnership , Companies and Co-operatives
- Public Sector: Public, Parastatal bodies and Local Govt.

UNIT II: IT PROJECT MANAGEMENT

Chapter 1: Introduction to Project Management:

Explain what a project is, provide examples of information technology projects, list various attributes of projects, and describe the triple constraint of projects , Describe project management and discuss key elements of the project management framework, including project stakeholders, the project management knowledge areas, common tools and techniques, and project success factors , Describe the role of the project manager by describing what project managers do, and the skills they need, Describe the importance of ethics in project management , Identify different project management software.

Chapter 2: Information Technology Context in Project Management:

Describe the systems view of project management and how it applies to information technology projects, Explain why stakeholder management and top management commitment are critical for a project's success, describe the concept of a project phase and the project life cycle.

The Context of Information Technology Projects: The nature of information technology projects, Characteristics of information technology project team members, diverse technologies.

CHAPTER 3: Project Time and Communications Management:

State the importance of project schedules and good project time management, Define activities as the basis for developing project schedules, Find the critical path for a project, Use the Program Evaluation and Review Technique (PERT) as project time management technique.

Project Communications Management: Introduction to Project Communications Management, Communications Planning, Information Distribution, Performance Reporting.

UNIT I: ENTREPRENEURSHIP SKILLS

Objective

After going through this lesson students should be able to:

- Inculcate the Desire to take up Entrepreneurship as a Career
- Differentiate between Wage employment, Self-employment and Entrepreneurship
- Define and know the Meaning of the terms Entrepreneur, Entrepreneurship and Enterprise
- Learn about the Functions performed by an Entrepreneur
- Understand the Role of Entrepreneurship in Economic Development
- Differentiate the roles of an Entrepreneur and a Manager
- Competition for market penetration;
- Innovation as a tool for entrepreneurial activity to stay on the cutting edge

CHAP 1: INTRODUCTION TO ENTREPRENEURSHIP

1.0 Introduction

Everyone is the potential to be an entrepreneur. The question is, are you ready to become an entrepreneur or do you wish to work for someone, for the rest of your life? It is often said that a person cannot win a game that they do not play. In the context of entrepreneurship, this statement suggests that success depends on people's willingness to become entrepreneurs. Moreover, because the pursuit of entrepreneurial opportunity is an evolutionary process in which people select out at many steps along the way, decisions made after the discovery of opportunities to positively evaluate opportunities, to pursue resources, and to design the mechanisms of exploitation also depend on the willingness of people to ‘‘play’’ the game. In this module, we argue that human motivations influence these decisions, and that variance across people in these motivations will influence who pursues entrepreneurial opportunities, who assembles resources, and how people undertake the entrepreneurial process. In this unit, we will open the world of your own business to you.

1.1 Definitions of Entrepreneurship and Entrepreneur

Who is an Entrepreneur?

Entrepreneur is actually a French word that means “undertake”. The English understanding of this term is someone who wants to start a business or enterprise.

An entrepreneur searches for change and responds to it. A number of definitions have been given of an entrepreneur.

Richard Cantillon: An entrepreneur is a person who pays a certain price for a product to resell it at an uncertain price, thereby making decisions about obtaining and using the resources while consequently admitting the risk of enterprise.

J.B. Say: An entrepreneur is an economic agent who unites all means of production- land of one, the labour of another and the capital of yet another and thus produces a product. By selling the product in the market he pays rent of land, wages to labour, interest on capital and what remains is his profit. He shifts economic resources out of an area of lower and into an area of higher productivity and greater yield.

Schumpeter: According to him entrepreneurs are innovators who use a process of shattering the status quo of the existing products and services, to set up new products, new services.

David McClleland: An entrepreneur is a person with a high need for achievement [N-Ach]. He is energetic and a moderate risk taker.

Peter Drucker: An entrepreneur searches for change, responds to it and exploits opportunities. Innovation is a specific tool of an entrepreneur hence an effective entrepreneur converts a source into a resource.

Webster's defines Entrepreneur as “One who organizes, operates and assumes the risk in a business venture in expectation of gaining the profit.”

An **entrepreneur** is a person who is able to identify viable business opportunities in a given environment, use his skills to combine and well manage the factors of production (land, labor and capital) with the aim of making a profit and thereby creating economic development.

Entrepreneurship

Entrepreneurshipcan be described as a process of action an entrepreneur undertakes to establish his enterprise.

Entrepreneurship is a creative activity. It is the ability to create and build something from practically nothing.

According to Peter Drucker, Entrepreneurship is defined as ‘a systematic innovation, which consists in the purposeful and organized search for changes, and it is the systematic analysis of the opportunities such changes might offer for economic and social innovation.’

Entrepreneurship is the process of creating something new with value by devoting the necessary effort, assuming the accompanying financial, physical and social risks and receiving the resulting reward of monetary and personal satisfaction and independence.

Entrepreneurship involves the development and growth of small entrepreneurial activities (enterprises), which generate economic growth, and increases the number of employment opportunities in the country.In a nutshell, the term entrepreneur is used to describe men and women who establish and manage their own business. The process involved is called entrepreneurship.

1.2 **Theories of Entrepreneurship**

As a concept and theory of entrepreneurship has evolved over a period of centuries and there were different opinions on the emergence of entrepreneurship these opinions come mainly from three different disciplines: **economics, psychology and sociology**.

1.2.1 Economists views

Economists look into the effect of entrepreneurship and the role of the entrepreneur in economic development, as well as application of economic and growth theories within the entrepreneurial context.According to them, entrepreneurship and economic growth take place when the economic conditions are favorable, and economic incentives (reasons) are the main motivators for entrepreneurial activities.

Richard Cantillon was the first of the major economic thinkers to define the entrepreneur as an agent who buys means of production at certain prices to combine them into a new product. He classified economic agents into landowners, hirelings (A person who works only for money), and entrepreneurs, and considered the entrepreneur as the most active among these three agents, connecting the producers with customers.

He also introduced the very concept of entrepreneur and he was the first to acknowledge that there is an entrepreneurial function within the economic system.

Jean Baptiste Say improved Cantillion's definition by adding that the entrepreneur brings people together to build a productive item. **Say** proposed that central to the entrepreneur's role in the economy is the combination and co-ordination of the factors of production.

He or she sits at the middle of the economic system and its market, directing and rewarding the various factors of production, and receives the difference between sales and cost as his profit.

Joseph Schumpeter was another economist who introduced innovation to the literature on entrepreneurship. He holds an entrepreneur as one having three major characteristics: **innovation,foresight**, and **creativity**. Entrepreneurship takes place when the entrepreneur

- creates a new product
- introduces a new way to make a product
- discovers a new market for a product
- finds a new source of raw material
- finds new way of making things or organization

Schumpeter's innovation theory however ignores the entrepreneur's risk taking ability and organizational skills, and place undue importance on innovation. This theory applies to large-scale businesses, but economic conditions force small entrepreneurs to imitate rather than innovate.

In his view, the entrepreneur is an exploiter (similar to Say) and his actions are responsible for shifts within business cycles and economic development.

Schumpeter will be remembered for his term **"creative destruction"** that show the entrepreneurial activity. A wave (signal) of innovation hits the market, discards traditional products and processes, and is followed by imitation on behalf of the competition. This will lead to a new point of equilibrium. This means that entrepreneurial profit is limited to a specific time interval, within which the market is unstable and the entrepreneur maximises profits, unless the entrepreneur continues to innovate. As far as personality is concerned, Schumpeter viewed the entrepreneur as a unique personality, an unusual creature who relies on instinct rather than calculations.

Casson is the most prominent modern economist, who attempted to approach entrepreneurship by combining former economic literature. His theory is mainly twofold. Initially, Casson sees **the**

entrepreneur as anindividual who co-ordinates production resources and, in order to do this effectively, possesses extraordinary skills. These skills help the entrepreneur to put in use the limited resources and produce an output that is unique, based on his or her abilities.

The backbone of the Cassonian entrepreneurial process is the decision making process that reallocates resources. So, the entrepreneur needs to be able to have power over and manage resources, and, therefore, needs capital. In Casson's view, regional differentiations in entrepreneurial activity relate to personal wealth (such as home ownership).

Secondly, Casson believes that **change is the companion of entrepreneurship**. To support this theory, he describes a situation where demand and supply for entrepreneurs is similar to the demand and supply curve of perfect competition markets. As expected rewards for entrepreneurial activity increase, the number of entrepreneurs increase, while the lower there ward the higher the demand for change agents (i.e. entrepreneurs) is

In his work, entrepreneurs elicit change, and change elicits entrepreneurial opportunities. So, the reader might comment that the most capable entrepreneur will be the one who initially sees the expected rewards, while others are still 'blindfolded'.

1.2.2 Psychologists views

Psychologists are not looking into economic parameters or the contribution of the entrepreneur to the society, but focus on **understanding and describing the person that chooses to become one.** Psychologists have been interested in identifying the personal characteristics and traits of entrepreneurs.

In 1961 **David McClelland** presented one of the first systematic approaches towards understanding the entrepreneurial personality. In his work he attempted to provide an entrepreneurial profile; the same thing that most psychologists tried to produce. So, in his seminal work McClelland introduced the **'business heroes'**, entrepreneurs that inspire younger generations and promote the essentiality of entrepreneurial activity. In this direction, he identified the key characteristic of the entrepreneur to be the **'need forachievement'**, rather than the desire to make money. He labelled this need for achievement as "n-Ach" and derived a tool with which one can measure it. He argued that societies with a higher measure of n-Ach on the average produce more active entrepreneurs – and, thus, faster economic growth – than societies with lower n-Ach on the average. People with high scores of n-Ach will seek independence and will pursuit more difficult tasks to undertake.

So, according to McClelland, **the most satisfying thing for the entrepreneur is the recognition of the success, and not the success per se**. He also introduced two other measures, n-Aff (for 'Need for Affiliation')and n-Pow (for 'Need for Power'), which have further contributed to the understanding of human action and interaction.

David McClelland considers entrepreneurs as people who do things in a better way and makes decisions in times of uncertainty. The dream to achieve big things overpowers monetary or other external incentives.

McClelland's experiment reveled that traditional beliefs do not inhibit an entrepreneur, and that it is possible to internalize the motivation required for achievement orientation through training.

Scholars – such as **Timmons** in 1976 describes Entrepreneurs as individuals that, compared to others, **can better handle complex and unstable working environments**. This means, that people who chose self-employment over paid employment, are comfortable in venturing within unstable and dynamic business circumstances.

According to (**Boyd**, 1984), Entrepreneurs demonstrate behavior characterized by aggression, competitiveness, striving for achievement and impatience

1.2.3. Sociologists views

Sociologists have been looking into behavioral aspects of the entrepreneurial personality and its interaction with other social constructs the sociological theory of entrepreneurship holds social cultures as the driving force of entrepreneurship. The entrepreneur becomes a role performer in conformity with the role expectations of the society, and such role expectations base on religious beliefs, taboos, and customs.

According to Max Weber (1864-1920), entrepreneurism is a function of religious beliefs and impact of religion shapes the entrepreneurial culture.

Max Weber held religion as the major driver of entrepreneurship, and stressed on the spirit of capitalism, which highlights economic freedom and private enterprise. Capitalism thrives under the protestant work ethic that harps on these values.

According to Hoselik, culturally marginal group promotes entrepreneurship and economic development; such groups create adjustments and thereby develop innovations.

According to Cochran, an entrepreneur reflects the societies personality model, his attitudes and performance reflect variables in society like his occupation expectations and all these social values are the most determinants of attitudes and role expectations.

1.3 Characteristics of entrepreneurs

Not everyone wants to be an entrepreneur and run their own business. Being an entrepreneur requires specific characteristics and skills that are often achieved through education, hard work, and planning. Entrepreneurs like to know how things work. They take the time and initiative to pursue the unknown.

A successful entrepreneur is characterized by the following:

- Setting challenging and achievable goals and having a desire to achieve them
- Working harder and longer in the business (work ethics): The successful entrepreneur will often be the first person to arrive at the office and the last one to leave. They will come in on their days off to make sure that an outcome meets their expectations. Their mind is constantly on their work, whether they are in or out of the workplace
- Ability to solve problems and make decisions. The decisions that entrepreneurs make will determine the fate of the company, and it’s only through decision-making that things will actually happen. An entrepreneur with poor decision-making skills will have his company caught in a state of inactivity and degradation; good decision-making skills, on the other hand, will ensure that the best possible measures in putting up the business will be enforced.
- Courage, confidence, perseverance and determination to face and solve problems.
- Getting along with other people, deal with them and communicate effectively to achieve goals.
- Taking calculated risks and if failure occurs, learning from it.
- Assessing your strengths and weaknesses. It is through this assessment that you can develop the characteristics you do not possess to effectively run your enterprise.
- Being flexible to cope with change and competition and willing to alter your plans to help your business grow.
- Being creative, innovative and having the initiative to generate ideas and implement them ahead of others to create a competitive advantage.

1.4 Type of entrepreneurs

Introduction

Like any processes, initially in the stages of economic development, entrepreneurs usually are surrounded by less initiative and drive, however as development proceeds, they become more interested, innovating and enthusiastic, therefore, in relation to the active/inactive role, and the entrepreneur has been classified in the following categories.

Following are the classification of entrepreneurs on the basis of common characteristic

Types of entrepreneurs

a) Clarence Danhof Classification:

Clarence Danhof classifies entrepreneurs into four types.

1. **Innovative:** Innovative entrepreneur is one who assembles and synthesis information and introduces new combinations of factors of production. They are characterized by the smell of innovativeness. These entrepreneurs sense the opportunities for introduction new ideas new technology, new markets and creating new organizations.

   Innovative entrepreneurs are very much helpful for their country because they bring about a transformation in life style.
2. **Imitative/ Adoptive:** Imitative entrepreneur is also known as adoptive entrepreneur. He simply adopts successful innovation introduced by other innovators.

   These entrepreneurs imitate the existing entrepreneurs and setup their enterprise in the same manner. Instead of innovating, they just imitate the technology and methods innovated by others. These entrepreneurs are very helpful in less developed countries as they contribute significantly in the growth of enterprise and entrepreneurial culture in these countries. Further by adopting the technology, which is already tested, they generate ample employment avenues for the youth and therefore they are treated as agent of economic development.
3. **Fabian:** The Fabian entrepreneur is timid and careful. He imitates other innovations only if he is certain that failure to do so may damage his business. They are very much skeptical in their approach in adopting or innovating new technology in their enterprise. They are not adaptable to the changing environment. They love to remain in the existing business with the age-old

techniques of production. They only adopt the new technology when they realize that failure to adopt will lead to loss or collapse of the enterprise.

4. **Drone:** These entrepreneurs are conservative or orthodox in outlook. They never like to get rid/to do away of their traditional business and traditional machinery or systems of the business. They always feel comfortable with their old fashioned technology of production even though the environment as well as the society have undergone considerable changes. Thus, drone entrepreneurs refuse to adopt the changes. They are laggards as they continue to operate in their traditional way and resist changes. His entrepreneurial activity may be restricted to just one or two innovations. They refuse to adopt changes in production even at the risk of reduced returns.

b) Arthur H. Cole Classification

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Arthur H. Cole classifies entrepreneurs as

1. **Empirical:** He is an entrepreneur hardly introduces anything revolutionary and follows the principle of rule of thumb.
2. **Rational:** The rational entrepreneur is well informed about the general economic conditions and introduces changes which look more revolutionary.
3. **Cognitive:** Cognitive entrepreneur is well informed, draws upon the advice and services of experts and introduces changes that reflect complete break from the existing scheme of enterprise.

c) Classification on the Basis of Ownership:

1. **Private:** Private entrepreneur is motivated by profit and it would not enter those sectors of the economy in which prospects of monetary rewards are not very bright.
2. **Public:** In the underdeveloped countries government will take the initiative to share enterprises.

d) Classification Based on the Scale of Enterprise:

1. **Small scale:** This classification is especially popular in the underdeveloped countries. Small entrepreneurs do not possess the necessary talents and resources to initiate large scale production and introduce revolutionary technological changes.

2. **Large scale:** In the developed countries most entrepreneurs deal with large scale enterprises. They possess the financial and necessary enterprise to initiate and introduce new technical changes. The result is the developed countries are able to sustain and develop a high level of technical progress.

In recent years, some new classifications have been made regarding entrepreneurs, which are discussed further.

1. **Solo operators**: These entrepreneurs prefer to set up their business individually. They introduce their own capital, intellect and business intelligence to run the enterprise successfully they operate their business mainly in the form of proprietorship type of concern.
2. **Active partners**: Entrepreneurs of this type jointly put their efforts to build enterprise pooling together their own resources. They actively participate in managing the daily routine of the business concern. As such, the business houses or the firms which are managed by the active partners become more successful in their operation.
3. **Inventors:** These entrepreneurs primarily involve themselves in Research and Development (R and D) activities. They are creative in character and feel happy in inventing new products, technologies and methods of production
4. **Challengers***:* Entrepreneurs of this type take challenges to establish business venture as mark of achievement. They keep on improving their standard and face boldly the odds and adversities that come in their way. They use their business acumen and talent to convert the odds into opportunities thereby making profit. According to them, if there is no challenge in life, there is no charm in life. Challenges make them bold, and thus, they never hesitate to plunge themselves into uncertainties for earning profit.
5. **Buyers (entrepreneurs):** These entrepreneurs explore opportunities to purchase the existing units which may be seized or are in running condition. If the units they purchase are sick they turn them around using their experiences, expertise and business acumen.

   By purchasing these units they make themselves free from the hassles of building infrastructures and other facilities.
6. **Life timers:** These entrepreneurs believe that business is the part and parcel of their life. They take up the business to reunite successfully as a matter of ego satisfaction.
   They have a strong desire for taking personal responsibility. Family enterprises which thrive due to high personal skill are included under this category.

1.5 Role of Entrepreneurs

Entrepreneurs occupy a central position in a market economy. For it's the entrepreneurs who serve as the spark plug in the economy's engine, activating and stimulating all economic activity. The economic success of nations worldwide is the result of encouraging and rewarding the entrepreneurial instinct.

15.1 The Role of an Entrepreneur in Economic Development

The entrepreneur who is a business leader looks for ideas and puts them into effect in fostering economic growth and development. An entrepreneur plays a pivotal role not only in the development of industrial sector of a country but also in the development of farm and service sector. The major roles played by an entrepreneur in the economic development of an economy are as follows.

(1) Promotes Capital Formation:

Entrepreneurs promote capital formation by mobilising the idle savings of public. They employ their own as well as borrowed resources for setting up their enterprises. Such types of entrepreneurial activities lead to value addition and creation of wealth, which is very essential for the industrial and economic development of the country.

(2) Creates Large-Scale Employment Opportunities:

Entrepreneurs provide immediate large-scale employment to the unemployed which is a chronic problem of underdeveloped nations. With the setting up of more and more units by entrepreneurs, both on small and large-scale numerous job opportunities are created for others. As time passes, these enterprises grow, providing direct and indirect employment opportunities to many more. In this way, entrepreneurs play an effective role in reducing the problem of unemployment in the country which in turn clears the path towards economic development of the nation.

(3) Promotes Balanced Regional Development:

Entrepreneurs help to remove regional disparities through setting up of industries in less developed and backward areas. The growth of industries and business in these areas lead to a large number of public benefits like road transport, health, education, entertainment, etc. Setting up of more industries lead to more development of backward regions and thereby promotes balanced regional development.

(4) Reduces Concentration of Economic Power:

The modern world is dominated by economic power. Economic power is the natural outcome of industrial and business activity. Industrial development may lead to concentration of economic power in few hands which results in the growth of monopolies.

The increasing number of entrepreneurs helps in dispersal of economic power into the hands of many efficient managers of new enterprises. Hence setting up of a large number of enterprises helps in weakening the evil effects of monopolies.

Thus, the entrepreneurs are key to the creation of new enterprises that energies the economy and rejuvenate the established enterprises that make up the economic structure.

(5) Wealth Creation and Distribution:

It stimulates equitable redistribution of wealth and income in the interest of the country to more people and geographic areas, thus giving benefit to larger sections of the society. Entrepreneurial activities also generate more activities and give a multiplier effect in the economy.

(6) Increasing Gross National Product and Per Capita Income:

Entrepreneurs convert the latent and idle resources like land, labor and capital into goods and services resulting in increase in the national income and wealth of a nation.

The increase in national income is the indication of increase in net national product and per capita income of the country.

(6) Improvement in the Standard of Living:

Increase in the standard of living of the people is a characteristic feature of economic development of the country. Entrepreneurs play a key role in increasing the standard of living of the people by adopting latest innovations in the production of wide variety of goods and services in large scale that too at a lower cost. This enables the people to avail better quality goods at lower prices which results in the improvement of their standard of living.

(7) Promotes Country's Export Trade:

Entrepreneurs help in promoting a country's export-trade, which is an important ingredient of economic development. They produce goods and services in large scale for the purpose earning huge amount of foreign exchange from export in order to combat the import dues requirement. Hence import substitution and export promotion ensure economic independence and development.

(8) Induces Backward and Forward Linkages:

Entrepreneurs like to work in an environment of change and try to maximise profits by innovation. When an enterprise is established in accordance with the changing technology, it induces backward and forward linkages which stimulate the process of economic development in the country.

(9) Facilitates Overall Development:

Entrepreneurs act as catalytic agent for change which results in chain reaction. Once an enterprise is established, the process of industrialisation is set in motion. This unit will generate demand for various types of units required by it and there will be so many other units which require the output of this unit. This leads to overall development of an area due to increase in demand and setting up of more and more units. In this way, the entrepreneurs multiply their entrepreneurial activities, thus creating an environment of enthusiasm and conveying an impetus for overall development of the area.

1.5.2 Functions of entrepreneurs

1. Risk-bearing function:

The functions of an entrepreneur as risk bearer are specific in nature. The entrepreneur assumes all possible risks of business which emerges due to the possibility of changes in the tastes of consumers, modern techniques of production and new inventions. Such risks are not insurable and incalculable. In simple terms such risks are known as uncertainty concerning a loss.

The entrepreneur, according to Kinght, "is the economic functionary who undertakes such responsibility of uncertainty which by its very nature cannot be insured nor capitalised nor salaried too."

Richard Cantillon conceived of an entrepreneur as a bearer of non-insurable risk because he described an entrepreneur as a person who buys things at a certain price and sells them at an uncertain price.

Thus, risk bearing or uncertainty bearing still remains the most important function of an entrepreneur which he tries to minimise by his initiative, skill and good judgement. J.B. Say and other have stressed risk taking as the specific function of the entrepreneur.

2. Organisational Function:

Entrepreneur as an organiser and his organising function is described by J.B. Say as a function whereby the entrepreneur brings together various factors of production, ensures continuing management and renders risk-bearing functions as well. His definition associates entrepreneur with the functions of coordination, organisation and supervision. According to him, an entrepreneur is one who combines the land of one, the labour of another and the capital of yet another and thus produces a product. By selling the product in the market, he pays interest on capital, rent on land and wages to labourers and what remains is his/her profit. In this way, he describes an entrepreneur as an organiser who alone determines the lines of business to expand and capital to employ more judiciously. He is the ultimate judge in the conduct of the business.

Marshall also advocated the significance of organisation among the services of special class of business undertakers.

3. Innovative Function:

The basic function an entrepreneur performs is to innovate new products, services, ideas and informations for the enterprise. As an innovator, the entrepreneur foresees the potentially profitable opportunity and tries to exploit it. He is always involved in the process of doing new things. According to Peter Drucker, "Innovation is the means by which the entrepreneur either creates new wealth producing resources or endows existing resources with enhanced potential for creating wealth". Whenever a new idea occurs entrepreneurial efforts are essential to convert the idea into practical application.

J.A. Schumpeter considered economic development as a descrete dynamic change brought by entrepreneurs by instituting new combinations of production, *i.e.* innovation. According to him innovation may occur in any one of the following five forms.

- ✓ The introduction of a new product in the market with which the customers are not get familiar with.

- ✓ Introduction of a new method of production technology which is not yet tested by experience in the branch of manufacture concerned.
- ✓ The opening of a new market into which the specific product has not previously entered.
- ✓ The discovery of a new source of supply of raw material, irrespective of whether this source already exists or has first to be created.
- ✓ The carrying out of the new form of organisation of any industry by creating of a monopoly position or the breaking up of it.
- ✓

4. Managerial Function:

Entrepreneur also performs a variety of managerial function like determination of business objectives, formulation of production plans, product analysis and market research, organisation of sales procuring machine and material, recruitment of men and undertaking, of business operations. He also undertakes the basic managerial functions of planning, organising, co-ordinating, staffing, directing, motivating and controlling in the enterprise. He provides a logical and scientific basis to the above functions for the smooth operation of the enterprise thereby avoids chaos in the field of production, marketing, purchasing, recruiting and selection, etc. In large establishments, these managerial functions of the entrepreneur are delegated to the paid managers for more effective and efficient execution.

5. Decision Making Function:

The most vital function an entrepreneur discharges refers to decision making in various fields of the business enterprise. He is the decision maker of all activities of the enterprise. A. H. Cole described an entrepreneur as a decision maker and attributed the following functions to him.

- ➢ He determines the business objectives suitable for the enterprise.
- ➢ He develops an organization and creates an atmosphere for maintaining a cordial relationship with subordinates and all employees of the organization.
- ➢ He decides in securing adequate financial resources for the organisation and maintains good relations with the existing and potential investors and financiers.
- ➢ He decides in introducing advanced modern technology in the enterprise to cope up with changing scenario of manufacturing process.
- ➢ He decides the development of a market for his product develops new product or modify the existing product in accordance with the changing consumer's fashion, taste and preference.

- He also decides to maintain good relations with the public authorities as well as with the society at large for improving the firm's image before others.

1.5.3 ENTREPRENEUR vs MANAGER

The terms entrepreneur and manager are many times used interchangeably yet they are different. An entrepreneur starts a venture then a manager takes over to organize and co-ordinate continuous production. The main differences between the two are summed up below:

Entrepreneur	Manager
• An entrepreneur is involved with the start-up process • An entrepreneur assumes financial, material and psychological risks • An entrepreneur is his own boss • An entrepreneur is driven by perception of opportunity • An entrepreneur initiates change • An entrepreneur gets uncertain rewards	• A manager with running the business over a long period of time • A manager does not have to bear risks • A manager is a hired employee • A manager by the resources he currently possesses • A manager follows rules & procedures • A manager gets fixed rewards and salary

Chapter 2: Entrepreneurial Innovation as Strategy for Change

Business change and renewal are the focal points in the business environment. Environmental forces and impacts are dynamic and moving customer preferences and demands are always shifting. Existing competitors are always fine-turning their challenge and new rivals are arriving. Contemporary business faces a turbulent environment that makes change and renewal a necessity of business operations. (Richard Pascal, 1998)

Therefore, innovation and change are hallmarks of successful business. In the rapid world of business; innovation for change is required for survival. If a business does not change over time, it will slip, lose its competitive edge and eventually struggle to keep from dying. It does not matter who you are, how good successful you have been, you will have to innovate for change; because the reliance of the past success is shortsighted and dangerous.

Thus, entrepreneurs would get the intentional movement from the present state towards some future.

2.1 SCANNING THE MARKET

A business undertaken is not only focuses on innovation, but also it has to look at the impacts of environmental forces and get oriented towards the actions. The business must take to compete in a dynamic market place. (Michael E. Porter, 1990).

Environmental sensitivity is important for two reasons: First, entrepreneurs must understand what is happening in the environment, they must recognize changes that are occurring or are likely in the future. They must anticipate how environmental events and anticipated changes that are likely to affect their businesses.

Second, a firm’s environment can hold both opportunities and threats. An entrepreneur’s task is to identify those opportunities that can be exploited and counter those threats that do damage. Entrepreneurs must take an objective by looking at the venture internal operations and determine how it is positioned to address both environmental opportunities and threats. Assessments of firms’ strengths and weaknesses are paramount in this aspect given that strength may be excellent facilities and technology it has to avail, its customer orientation and the consumer focused reputation it has built and people who are highly qualified and dedicated to work. Therefore; businesses are bound for this reality check so as to sort out their deficiencies in advance.

2.2 Sources of innovative opportunity

Peter Drucker (1999), a business philosopher has identified sources for innovation opportunity, which are external sources and internal sources.

Under external sources of opportunities he highlighted the following:

a) Demographs: this the basic change in population i.e. population ageing, educational levels and income rises. All these facts make new opportunities for new innovation to be possible due to the new demographic realities.
b) Change in perception: Drucker says that when a change in perception takes place new things occur; some of it is due to change in customer perception, attitudes and perhaps even values.
c) New knowledge or new awareness and techniques that allows entrepreneurs to do things they would not do before.

New technology is a common example here where innovation is derived from. For example: *URWIBUTSO* Enterprise battle to be leaders in exploiting emerging technology in adding value to local products, to bring newness/transformed product to consumers.

In addition to these three outside sources, Drucker identified other internal sources of innovation within the organization which he called "the ***unexpected successes"*** that are exploited to build competitive strength or "unexpected failures" that help the business understand its customer more fully. The internal source of innovation is "***incongruities"***. This occurs when there is a gap between what the business expected or was hoping for and what occurred. Hence, with the unexpected, this gap is an invitation to innovate.

An example of *URWIBUTSO* as it was producing cakes; it realized that cakes causes thirsty, it gained the creativity idea of introducing juices production to bridge the gap at the same time responding to customer needs. Further, internal sources of innovation are based on "process needs". As the business operates, people become aware of the processes that need improvement. These needs are the profits of innovation. Process needs related innovations are part of successful companies' focus on quality and continuous improvement.

Drucker's final internal source of innovation is change in industry or market structure. This is the search for new approaches or new niches that will give competitive edge for existing enterprises and emerging ones. With these sources of innovation, businesses get potentials and managers are enlighten to improve rather than resistance to change. All these changes vested with entrepreneurship foster innovation.

2.2.1 Actions for building innovation

R.Herbert & Peterson as cited by Paul Burns (2001), asserted that creativity and innovation are the benchmark for change and successful business in the changing environment. Creativity is a pattern of thinking and behaving that emphasizes new different ideas , whereas innovation is the results of what is produced through these creative activities .Creativity is a process; innovation is an outcome . Business encourages creativity in order to achieve innovation. These creativity and innovative actions are the building block for existing and emerging ventures and encompasses the following:

a. Encouraging risk and experimentation

Organization with innovation and change must gain creative ideas. Entrepreneurs must be receptive to these new ideas, encourage people to take risks, experiment with new ideas and break the established pattern.

b. Tolerating and learning from mistakes

With the encouragement of risk-taking mistakes and missteps that undoubtedly will occur when people are trying new things. Entrepreneurs should realize that the only way to avoid mistakes is to never take a chance. They must view mistakes as a natural part of the creative process and as learning opportunities.

Note that mistakes are part of learning and development that occurs in an innovative organization.

c. Embracing diversity and differences

One way to foster a climate of creativity and innovation is to encourage diversity within the business by bringing people of different genders, races and cultural background.

Indeed, diversity of talents can often provide the information, perspective and sense that businesses need as they consider changes and innovation. People with differing views and outlooks must be with accepted ideas given a fair hearing when decisions are being made. Furthermore, diversity theme deals with the use of teams, given that teams bring people from different background and different areas of the business together to solve problems which are often more creative.

d. Promoting boundaryless behavior

Organizations have boundaries. As people specialize in different tasks boundaries exist between various functions of the business. Therefore, if creativity is going to flow, the business must be structured in such a way that people are free to share ideas across boundaries or call on one another for assistance.

This approach of open communication and exchange is known as boundaryless behavior which seeks to eliminate unnecessary barriers that limit the flow of information and ideas. It also helps business stakeholders to develop new and unique responses to business issues and concerns that involve a close contact with suppliers and customers.

e. Maintaining close contact with customers

One key way for a business to stay on creative edge in the market place is to maintain close contact with its customers. Customer sensitivity is essential for competitive success. He highlighted that a healthy business that tend and address the shifting preferences of their customers sustain the competitive advantage; since customers are also excellent sources for new areas of innovation. Customers point to the need of innovation through complaints and dissatisfaction with existing products. Hence this calls for substitution effect to new product which suits the new customer preferences.

f. Investing in learning

Peter Senge as quoted by Peter.Drucker (1999), advanced the importance of human capital in an organization where it is considered as the building block of all undertaking for business success. Employees are the engines of creativity. The ongoing learning is a fuel that needs to generate innovation. Businesses, which invest in employees' learning, realize sustaining creativity and innovation. The fact of investing in learning is a search for new and better ways of operating and meeting the needs of their customers. The key to learning is that it encourages change and renewal as part of its philosophy, its value and culture.

Broadly, creativity and innovation are more than developing a new product or technology; it encompasses any new way of doing things. Therefore, it needs carefulness and understanding of the worldviews; whereby innovators are bound to be proactive to future situations by taking-risk, learning from mistakes, understands customer present tastes.

The key point is to satisfy customers and at the same time gaining profitability from all your endeavors.

2.3 Identification of market opportunity

An opportunity is a gap in a market place where the potential exists to do something better and create value. According to Newman &Bennett (2002), an opportunity is gaps left in the market by those currently serve it. J.Timmons (1990), states that an opportunity has the qualities of being attractive, durable and timely as well as anchored in product or service, which create or add value to its purchaser.

New opportunities exist all the time, but they do not present themselves. If they are to be exploited, they must be actively sought out. The identification is one of the key tasks of entrepreneurs. They must constantly scan the business landscape watching for the gaps left by existing players in the market place. As with innovation no matter how important identifying opportunity is to the entrepreneurial process; the entrepreneurs cannot stop at only identifying opportunities. It is in this regard that an opportunity is simply the "mould" against which the market tests new ideas and the real value is created with something new which fills the market gap.

2.4 Identifying opportunities demands knowledge

Entrepreneurs are special persons; they identify opportunities before others have introduced it. They have unusual foresight to recognize potential demands for goods and services thereby creating new economic enterprises.

Philip A .Wickham (1998), pointed out the abilities that entrepreneurs are to be vested with:

- Knowledge about technology behind the product and service to be supplied
- Knowledge as to how the product or service is produced
- Knowledge of customer's needs and buying behavior they adopt
- Knowledge of distributors and distribution channels
- Knowledge of human skills utilized within the industry
- Knowledge of how the product and service might be promoted to the customer
- Knowledge of competitors, who they are , the way they act and reaction

2.5 Opportunity awareness a priority over innovation

It is better to be excited over a new idea. However, no matter how good it is, it has to be geared to market opportunity that aims to exploit. The best ideas are those which are inspired by a clear need in the market place rather than those that result from unformed invention.

Many innovators which have been pushed by new products or service possibilities rather than pulled by unsatisfied customer needs have gone unsuccessful. J.Katz, (1990). Therefore, carefulness must be taken because mistakes are punished quickly and they can be expensive not to rush idea straight into the market.

2.6 Innovation and exploitation of opportunity

A business opportunity is the change to do something different and better. An innovation is a way of doing something different; this innovation is a tool of exploiting a business opportunity. It involves new ways of production, distribution and marketing. Peter Drucker,(1999)

a) *New products*:

The most common form of innovation is the creation of new product. The new product may exploit an established technology or it may be an outcome of a whole new technology .the new product may offer a radically new way of doing something or improvement. This plays a role of customer advantage, if it is to be successful; it also satisfies emotional needs; branding is an important aspect here.

b) New services:

Services are delivered by operating practices which are routinized. Innovation in service delivery must address customer needs and offer a high quality service, more consistent and less disruptive service.

c) New ways of distribution

Customers can only use product or services they can access. Consequently getting distribution right is an essential element on business success. It is also something, which offer a great deal of potential for innovation as it involves the path the product takes from the producer to the user more efficiently.

d) New way of informing the customer about the product or service (Marketing)

People will only use a product or service if they know about it. Demand will not exist if the offering is not properly promoted to them. Promotion consists of delivery messages that will act as a means of product awareness.

Communication with customers can be expensive especially when their ventures are at early stages, rarely do they have the resources to invest in high profile advertising and public relations campaign. Therefore, they are encouraged to develop new means of promoting their products.

2.7 BRINGING INNOVATION TO MARKET

Innovation is a crucial part of the entrepreneurial process. Peter Drucker (1999), proposed that innovation is the central task for the entrepreneur-manager in his book of innovation and entrepreneurship. Entrepreneurs must do something new or there would be no point in their entry in market.

He asserted that innovation is not straightforward to plan and implement. It requires some characteristics:

- A propensity for risk-taking
- A tolerance for ambiguity
- A customer and market orientation
- A high degree of employee motivation and commitment
- Use of flexible team –based with structures
- Effective horizontal communication mechanisms
- Decision-making authority vested with entrepreneurs
- Emphasis on technical skills development
- Emphasis and intensive organizational collaboration and cooperation

Having an innovation sense can be a lot more than just developing a new product or technology. It encompasses any new way of doing something so that value can be created Innovation is also a new way of delivering an existing product and service. It is therefore, a new method of informing the consumer about a product and promoting it to them, new ways of organizing the company or even new approaches to managing relationship with other organization.

Innovation requires that organizational issues needs to be addressed in new technology adoption and implementation. People need to be managed in the sense that they want to be informed and to participate in change rather than feel helpless about its onset.

Change will be naturally embraced by some people but interpreted as a threat by others if they are not adequately briefed and prepared. In the best of all words , a mix of opinion leaders from senior managers through the shop floor would not only be informed about the decision to adopt new technology, but also be involved early enough to have the organization prepared and even looking forward for its introduction. Prior consideration of these factors often leads to good practices and outcomes in technology management. Similarly, new technology implementation usually fails when key organizational issues are overlooked namely: internal and external oriented management issues. (J.Bailey 1992). Internal issues include management, technical areas, personnel and organization itself.

External issues includes interface with market, the market integration with technology, Customer – supplier and producer-user relationship, support for innovative activities from external sources such as government and stakeholders. Under internal oriented management issues, the innovative enterprises are bound to take into account the following:

2.7.1 Championing for New Technology:MANAGERIAL TASK

This is under management issues and it should be at the most senior level possible. It needs to be visible and vocal supporter of change and provide a constant emphasis on the direction that the organization needs to take.

According to R.Noori and W.Radford (1990), if an innovation is to succeed, the organization needs a sponsor , a champion and a project manager . The roles can be shared or duplicated, but the key is that the sponsor ought to have organizational power to mobilize the necessary resources and workers ought to be encouraged to exhibit their potentials in bringing new ideas for a worthy innovation in line with current customer preferences.

2.7.2 Funding new technology

It is necessary to emphasize on future scenarios or market situations, where strategic issues are more important than financial considerations.

Company policy in funding new technology also has to be well thought out so that competing request is achieved .Decision criteria for investing in new technology generally should not be purely financial and based on marginal without analysis.

It should go beyond financial projections and consider changes in market conditions, competitors and technological advances. Under technical areas, the innovative company is viewed to follow some steps which enable the introduction to be successful such as:

2.7.2.1 .Phased Introduction:

With any new technology, the transfer of knowledge from old operation to the new process has to be planned carefully. Phasing introduction especially when multiple installations are involved assists in keeping more familiar with the new technology and reducing the possibility of alienating the workers from new technology and work practices rather than strive for change.

2.7.2.2. Operational Experience

One of the best ways to introduce new technology is to build on a successful history of older technology. A successful history of technology introduction also gives an organization and its employees the confidence to embark on new technology projects. Experience with the introduction of new technology assists in the subsequent introduction of further technology upgrades as the organization learns.

New technology that is beneficial to the organization as a whole can be introduced.

2.7.3. Personnel issues:

This entails communication and employees' involvement, the use of selection of personnel for new technology, employee evaluation, remuneration and training development for more successful innovation. R.Noori, (1999).

2.7.3.1 Communication and employee involvement:

An innovative firm to be successful constant communication at all levels of the organization and employee involvement is necessary ingredients in successful new technology implementation, since employees need to understand the reasons for the new technology introduction, its expected benefits and the impact that it will have on them. The effective use of this process assists in anticipating problems before they arise.

2.7.3.2 Personnel selection for new technology

To give the new technology the best chance of being implemented successfully; it is important to select personnel with the necessary attributes and skills. With the introduction of new technology personnel who will enhance its success should be selected to work on its introduction. However, the introduction of new technology is essentially continuous, and then all personnel are eventually involved in the new technology introduction and become crucial for its success. This requires a very careful selection over a long period of time or intensive training so that employees strive on change and the challenges that it provides.

2.7.3.3. Employee evaluation and remuneration

The evaluation and remuneration of employees has to be directed toward supporting the ongoing introduction of technology. Hence, workers will recognize that the new technology is their best option and will be supportive. It must reward creativity, intelligent risk-taking, intrapreneurship and preparedness to work with change and the necessary external values such as customer service. The introduction of new technology is a team effort and the evaluation and remuneration system should be structured to recognize this.

2.7.3.4. Training

Social and technical training before the actual introduction of new technology is important to ensure its smooth implementation. If hard technology is being implemented, then familiarization with equipment at the vendor's premises or at another installation is important.

Continual technology introduction requires a highly trained workforce with training on the social aspects of change to understand its impact on both the organization and the workforce. Training in the technology itself is also required for both working directly with it or for those who have to explain it to other employees, customers or suppliers.

Training can never be considered as an afterthought; it should be an integral part of the introduction and delivered at the appropriate time and as professionally as possible (Berton Dickinson 1990). The internal management after identifying the requirement of the above causes whether internal or external it will drive the venture at a successful edge. They cover the bulk of the overall issues, though not exhaustive that should be addressed by any organization contemplating technological change. Technology introduction is therefore, easier when organizations consider the management issues that are uncovered and develop solutions to anticipated problems before they occur.

2.7.4 Technology and market

According to M.Martin (1984) successful companies aims their technology investment at a known or emerging market requirement, they seek to transform the market requirement through their new offerings and the lead to achieve through them.

The company is required to construct and implement a set of technical efforts that will collectively ensure the future competitiveness of company's offerings.

Therefore, firms pursuing competitive advantage strategy learn two principal markets based sources namely customers and competitors.

Competitive advantage can be conceptualized as a superior market place position that captures the provision of superior customer value kind/ achievement of lower relative costs resulting in market share dominance and superior financial performance (Day and Wensley 1988).

Hence, technology is more emphasized as it is the primary tenet which leads to competitive advantage. Nowadays, for a firm to win the market place, it has to introduce something new to capture customers and divert them from the existing product to the new product.

2.8 INNOVATION MANAGEMENT

2.8.1 Enterprising strategies for competitive advantage

2.8.1.1. Differentiating strategy

In a competitive environment a business must continuously try to develop ways to compete more effectively. Business tries to identify strategies that will give them an edge over the competition. Machael E.Porter (1985) asserted that a business pursuing a product differentiation strategy provides a product or service that has some unique feature. That unique feature can be either in the company's products that are known for being higher quality than those of competitors or the company provides superior service once a purchase has been made, perhaps the business has such friendly knowledged workers that customers feel comfortable with the help and support they receive.

He further said that the competitive strength of the differentiation strategy comes from what the unique feature allows the business to do. Therefore, the unique feature should enable the business to sell more of its products because customers' values the uniqueness provided.

2.8.1.2. Low –Cost leadership strategy

This is finding ways to reduce the costs of producing a product or service and pass the saving on customers. In this aspect the firm may reduce costs in many ways by finding more efficient ways of operating, be able to get supplies or produce at reduced costs.

In an enterprise, the low- cost leadership strategy works if the enterprise can reduce costs to the minimum, while still providing quality products & services (Gareth R.Jones 1998).

2.8.1.3 Focus strategy

In the focus strategy the business positions itself to serve the needs of some unique or distinct customer segment that is not fully served by the competitor. This strategy is in view of serving distinct group of customers, a geographical area or some specific need that have not been fully addressed by any other competitor. Often the focus strategy is the natural and most reasonable approach pursued by small business and entrepreneurs. These creative people look at the business environment and see areas of consumer needs that are not being tapped. They are convinced that if they offer products and services to meet the market needs, they can be successful. They are searching for a gap between what is currently available in the market and what consumers want and organize their business to serve this niche (Richard Siklos 2000).

2.8.2 Key competitive advantages

T.Peter and R.Brown, (1995) in their research to innovative firms have identified the following:

- Customer driven: the major driving force for an innovative firm for continual processes is customer needs; the company responds to this through product development which conforms to the current customer preferences.
- Technology: this provides a mechanism for adopting and developing new markets to achieve production efficiencies. The company's success and competitive advantage are linked to technological excellence and capability and understanding new product development.

The company aims to maintain its technological capability and to be best at this.

Technology is seen as customer driven both internally and externally and related to market opportunities.

Gary Hemel (1990) further asserted that innovative firm is featured by core competencies and distinctive competencies whereby a firm has a plenty of skills activities or capacities that business is uniquely good at doing in comparison to rival firms. These are features that make the business special and distinguishing it from other firms. Hence, in competitive market, these features are used to convince customers to choose one business over another.

2.8.3. Consumer behavior awareness

According to Ostrow & smith's dictionary of marketing (2001), the term consumer behavior refers to the actions of consumers in the marketing place and the underling motives to the actions. It is an essentials part of marketing strategy to know the motives of consumers in buying one products or another in the market place. Customer relationship is the major aspects. So, the basic objective of any business is profit maximization through customer satisfaction. However, the consumer analyst needs to determine the underling currents and crosscurrent in the consumer's minds. Given that tastes and preferences are conflictual and changes overtime. There is a focus on the effective marketing strategy and tactics employed by the firm that are successful in the markets. Consumer behavior is a study of why, how, what, where and how often do consumers buy and consume different products.

Knowledge of consumer behavior is helpful to the marketing manager in understanding the needs of his different consumer segments and developing appropriate marketing strategies for each. This knowledge provides an insight into how consumers arrive at the purchase decision and the variable, which influences their decision.

A consumer decision to purchase a product is influenced by a number of variables namely: psychological, personal, social and cultural and they differ in tastes according to their sex, age, education and income.. With all these, the marketer might endeavor these information for proper marketing strategy.

2.8.4. Development of technology capabilities

In order to accomplish strategic and operational goals, organization must develop and adequate technological base; they must develop the technological know-how to effectively building and deploying that know-how (Alder 1990).

Organization need to be technologically equipped to meet their strategic objectives and to create new opportunities as well as to respond to the threats created by the environment and competition activities (Robert at el 1985).

According to W.Hamilton (1992) an innovative firm is technologically developed by mechanisms that include:

- Introducing and diffusing a new technology
- Upgrading the technical skills and knowledge of employees
- Improving organizational routines, structures, processes and values through which work is performed.
- Enhancing relationship with suppliers, customers, company affiliates and other organizations.

It is in this regard that today's businesses success occur if they excel at something that the market values such as new product development responsiveness to orders, continuous enhancement of product features , marketing and customer services.

M.Meyer and M.Robert(1988) noted that companies that concentrated on internal development of a single or related group of technologies and that focused on related market applications achieved both technological product excellence and a deep understanding of their customers.

K.Clark and T.Fujimoto (1989) stipulated that the key challenges of businesses competitiveness is expressed in terms of cost, quality, flexibility and design through their ability to manage technological innovation.

They further noted the characteristics of these firms' technological success as:

- A focus on the development of a definite set of technological capabilities

- An ability to develop a strategic technology culture through routines that facilitates capabilities development and relates technological capabilities to strategic goals
- The recognition that the contribution of technology and technical functions to competitive advantage derives from superior technological capabilities.
- An ability to institutionalize the learning of design teams in a way that continuously develops essential capabilities
- Adequate levels of technological competencies within executive management.

2.8.5 Positioning the venture product

The aim of positioning is to reduce the extent to which the customer feels that the product and service is substitutable by those of competitors. In effect, this means focusing the offering to the needs of the customer is a unique and effective way.

The positioning need not be solely in its functional core; differentiation can often be achieved very effectively by giving the emotional benefit (D.Aeker 1982).

Positioning is a valuable entrepreneurial tool. it guides the entrepreneur in offering the customer something new and valuable and it avoid the need for head –on competition with established and more powerful players.

2.8.6. Securing competitive advantage

S.Birley (1990) mentioned that competitive advantage resides in product offered and services accompanied to it. The distinguishing feature of entrepreneurs is that they recognize what works and replicate it quickly before competitors can react.

The first thing that a growing firm needs to understand is why it has been successful so far. It needs to revisit the generic marketing strategies and   SWOT analysis. In order to be certain it can answer four questions that enable it to understand the basis of its competitive advantage:

- Who are our customers?
- What benefits are they looking for, when they buy our products?
- Why do they buy from us rather than our competitors?
- What strengths do we have and how can they be used to build competitive advantage?

Each of these questions will acts as a guide for strategic decision making as they encompasses all the factors an innovative firm has to look at in order to sustain its competitive advantage.

2.8.7. Long- term and sustainable competitive advantage

Machael.E.Porter (1985) asserted that sustainable competitive advantage provide successful conceptual approach to recognizing the ways in which the strategies can be taken to give guarantee for long- term success in the market place.

It provides an insight into the decisions that must be made in order to keep the business in a position where it can compete effectively. So, it acts as a critical pillar of strategic thinking.

Competitive advantage is located in what is offered to the marketplace. This occurs if the business consistently offers the customers something, which is different to what competitors are offering, and what difference represents something valuable for the customer. This resides in offering at low price, different features or performance, branding and distribution.

2.8.8. Ingredients of business sustainability

In a turbulent world of business, survival over a long period is a badge of success; often the business start out to do one thing and just a few years later that business can be successful. Patricia Jones and Lary Kaherer (1995) pointed out that in order for an emerging firm to succeed and enjoy competitive advantage it has to be based on the following indicators of business success.

2.8.8.1. Achieving financial performance

The single most dramatic measures of organizational health and business success is financial performance. The most direct indicator of financial performance is captured in the concept of profit. Indeed, entrepreneurs and managers constantly strive to make a profit because it is an incentive to set up a business; thereby adding value to the firm. Profit is an incentive for which an individual invest in business. It is a reward for risk one's wealth in a venture. Therefore, the achievement of profit needs other related actions which might be fulfilled to get a long term success.

2.8.8.2. Meeting customer needs

Every business has customers, regardless of whether it provides a product or service. The amount of profit a business make is ultimately determined by how well it meets its customer's needs over the long run Fred.L. Foy, (1999).

Today, many experts feel that customers are the key indicators of business health and success, before thinking of profit, organizations first think about customers. They recognize that if customers are satisfied the base for financial profitability is in place.

However, without customer preference, the business will not survive; this is why this should be a point of focus for organizations.

Customer relationship is a backbone of business success; managers should not only meet but also exceed customer expectations i.e. to be proactive instead of reactive to customer preferences.

2.8.8.3. Building quality products and services

Today's business must focus on quality and value of their products and services. Customers won't tolerate low quality unless low prices are more important to them than the quality of product, but rational customers emphasize quality even if the cost is higher. In a competitive environment, customers will be ready about any business that meets their quality expectation.

Paul Galvin, (1995) added that quality is a near obsession for companies and quality management is the expected way of operating for most business today which refers to a company's effort to provide steadily higher level of quality throughout all phases of its operations.

2.8.8.4. Encouraging innovation and creativity

In today's volatile business setting, there is change over time, customer's taste and preferences are constantly changing. Employee demand is always shifting; competitors are searching for new ways to edge rivals out of the market. Organizations are always looking for methods of operation that will bring greater efficiency and productivity, new technologies are always being developed. The only way a business can stay on top and compete is to be creative and innovative. Without the ability of change a firm's success will surely to short lived (Kmart 1992).

2.8.8.5. Gaining employee commitment

A successful business is composed of employees who care about the job, they are proud of their work and they feel a sense of commitment to their jobs and to the company , they are dedicated and concerned not simply going through the motions .

In this context, companies have to treat well employees so that they continue to develop their potentials. A health company invests considerable time and efforts in finding ways to build greater employee commitment.

They have formal programs to provide more opportunity for employee participation and involvement in decision-making and frequent training in the strategy to improve employees' skills. One way to build commitment is to use the talents of workforce to the fullest extent possible. Most employees want to feel needed in their works and managers are bound to meets their needs and expectations so that they feel part of the company (D.Hussey.E 1996).

By and large , the five enumerated indicators of business success are not isolated from one another ,they are rather interdependent because what happens in one area affects others in the sense that quality and sensitivity to customers enable a business to foster operations and provides products and services that improve its financial performance.

Innovation keeps the business on the cutting edge, assuring customer responsiveness and enhancing financial outcomes. Utilizing the workforce in conducive condition builds a sense of drive and dedication that may promote quality, customer service and intrapreneurship. A focus on one piece of the success indicators without attention to others would yield an incomplete picture and could endanger the long-term success of the business.

SUMMARY

This chapter discuss about entrepreneurs creativity and innovation, entrepreneurship in Africa and Rwanda in particular. It shows different scholars views on how innovation is a strategy for change given that those entrepreneurs with creativity are able to detect opportunities through which innovation is made. Innovation is derived in different perspectives. Therefore, management, technology and marketing take a lead in explaining innovation. The chapter also pinpoints how innovation management brings competitive advantage to businesses.

Some of the business strategies are: differentiating strategy, low-cost leadership and focus strategy. Indeed, consumer behavior awareness takes a crucial part and it helps the business to develop new technologies to position the venture product with the view of securing competitive advantage.

HAPTER 3 : IDENTIFICATION AND EVALUATION OF BUSINESS OPPORTUNITIES

The Entrepreneurial Process

The process of starting a new venture is embodied in the entrepreneurial process, which involves more than just problem solving in a typical management position. An entrepreneur must find, evaluate, and develop an opportunity by overcoming the forces that resist the creation of something new. The process has four distinct phases: (1) identification and evaluation of the opportunity, (2) development of the business plan, (3) determination of the required resources, and (4) management of the resulting enterprise. Although these phases proceed progressively, no one stage is dealt with in isolation or is totally completed before work on other phases occurs.

For example, to successfully identify and evaluate an opportunity (phase 1), an entrepreneur must have in mind the type of business desired (phase 4).

Phase 1: Identify and Evaluate the Opportunity

Opportunity identification and evaluation is a very difficult task. Most good business opportunities do not suddenly appear, but rather result from an entrepreneur's alertness to possibilities, or in some case, the establishment of mechanisms that identify potential opportunities. For example, one entrepreneur asks at every cocktail party whether anyone is using a product that does not adequately fulfill its intended purpose. This person is constantly looking for a need and an opportunity to create a better product.

Although most entrepreneurs do not have formal mechanisms of identifying business opportunities, some sources are often fruitful: consumers and business associates, members of the distribution system, and technical people. Often, consumers are the best source of ideas for a new venture. How many times have you heard someone comment, "If only there was a product that would…" This comment can result in the creation of new business.

Due to their close contact with the end user, channel members in the distribution system also see product needs. One entrepreneur started a college bookstore after hearing all the students complaining about the high cost of books and the lack of service provided by the only bookstore on campus. Many other entrepreneurs have identified business opportunities through a discussion with a retailer, wholesaler, or manufacturer's representative.

Finally, technically-oriented individuals may often identify business opportunities when working on other projects.

Whether the opportunity is identified by using input from consumers, business associates, channel members, or technical people, each opportunity must be carefully screened and evaluated. This evaluation of the opportunity is perhaps the most critical element of the entrepreneurial process, as it allows the entrepreneur to assess whether the specific product or service has the returns needed compared to the resources required. This evaluation process involves looking at the length of the opportunity, its real and perceived value, its risks and returns, its fit with the personal skills and goals of the entrepreneur, and its uniqueness or differential advantage in its competitive environment.

Opportunity analysis or what is called an opportunity assessment plan or often called **Feasibility study**, is one method for evaluating an opportunity. It is not a business plan. Compared to a business plan, it should be shorter; focus on the opportunity, not the entire venture; and provide the basis for making the decision of whether or not to act on the opportunity.

MEANING OF FEASIBILITY STUDY

Entrepreneur cannot start business blindly without carefully analyzing his business proposal in existing conditions. To start and execute business, capital investment is needed with a lot of efforts and time. Business proposal is tested on various criteria to find out whether this business is worth doing or not. (a business opportunity is possible, practical, and viable). This analysis is called Feasibility Analysis or Feasibility Study.

Through Feasibility Study, if entrepreneur realizes that his business will survive, grow and will bring economic profit for him, he goes ahead and prepares a detailed **Business Plan** based on preliminary investigation otherwise he stops immediately and drops this business proposal.

Types of Feasibility Study

1. Technical feasibility

Once an entrepreneur has found information about potential consumers, their requirements and the likely share of the market that could be obtained for a new product, it is then necessary to assess whether production at this scale is technically feasible. The series of questions below is helpful in deciding the technical requirements of the business:

- Whether this business is technically possible or it is just a scientific challenge / fantasy?
- Whether technology / resource / raw material exist which may be needed for business?
- If exist, is it easily available at our site of business?
- If the technology is not available, can it be acquired with reasonable cost, effort and time?
- Are suitable packaging materials available and affordable?
- Are distribution procedures to retailers or other sellers established?
- Do we have qualified/capable manpower to use this technology?

2. Operational feasibility

Define the urgency of the problem and the acceptability of any solution; if the system is developed, will it be used? Includes people-oriented and social issues: internal issues, such as manpower problems, labour objections, manager resistance, organizational conflicts and policies; also external issues, including social acceptability, legal aspects and government regulations

- Once business is started, will it be easy going and operational in available conditions?

- Will it be manageable with available resources (Capital /Manpower /Land/ Machineryetc)?

Operational Feasibility: The PIECES Framework

The PIECES framework can help in identifying operational problems to be solved, and their urgency:

Performance: Does current mode of operation provide adequate throughput and response time?

Information: Does current mode provide end users and managers with timely, pertinent, accurate and usefully formatted information?

Economy: Does current mode of operation provide cost-effective information services to the business? Could there be a reduction in costs and/or an increase in benefits?

Control: Does current mode of operation offer effective controls to protect against fraud and to guarantee accuracy and security of data and information?

Efficiency: Does current mode of operation make maximum use of available resources, including people, time, and flow of forms,...?

Services: Does current mode of operation provide reliable service? Is it flexible and expandable?

3. Economic feasibility

Economic analysis could also be referred to as cost/benefit analysis. It is the most frequently used method for evaluating the effectiveness of a new system. In economic analysis the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system. An entrepreneur must accurately weigh the cost versus benefits before taking an action.

Possible questions raised in economic analysis are:

- Is the system cost effective?
- Do benefits outweigh costs?
- Can the project be done, within given cost constraints?
- What is the minimal cost to attain a certain system?
- Estimation of all kind of costs and benefits (Fixed/variable, Tangible/Intangible, One-time/Recurring) (Cost-Benefit-Analysis)
- Who will be potential customers?
- Who will be potential suppliers?
- Will our business attract customers, survive market competition and will get reasonable profit?

4. **Timeliness feasibility**

- How much time will be needed for research and planning?
- How much time will be needed in arranging capital, acquisition of site, purchase of equipments etc?
- How much time it will take for initial installation?
- How much time it will take to start production/trading?
- How much time it will take to start earning profit?
- Do we have enough time for above mentioned steps or we are running out of time? It may be possible that business will start to generate profit after a certain time for which we cannot wait!!

5. **Legal feasibility**

Whether planned business activities and procedures are legal or not according to rules, regulations and laws applicable in current territory.

Make sure that you are not violating any law which can put business in serious troubles such as prosecution, seizure, financial bankruptcy or even imprisonment.

6. **Social feasibility**

Whether planned business activities are not against any cultural, religious beliefs of surrounding society. You have to make sure that planned business activities and procedures are not creating serious social problems in society like cultural-moral downfall, laziness, drunkenness, hatred etc.

7. **Environmental feasibility**

Whether planned business activities are not creating serious water, air or noise pollution. You have to make sure that planned business activates are not creating environmental imbalance, Ozone layer problem, deforestation, soil erosion etc.

After analyzing the above mentioned criteria, then you try to answer yourself whether you should stop immediately or go ahead with business proposal.

Steps taken during feasibility study:

(i) Formation of Team:

- If Business Proposal is quite large, entrepreneur creates a team and appoints a team leader to carry out feasibility study.

- If business proposal is small, entrepreneur himself can carry out some kind of investigation.

(ii) **Preliminary Investigation:**

- Market survey,
- Experience sharing,
- Interviews,
- Group discussion,
- Questionnaire,
- On-site observations,
- Literature review,
- Internet based research

These are some techniques used for investigation. It is not necessary to use all technique together. Entrepreneur can choose one or more techniques in combination to carry out investigation.

(iii) Analyzing research findings:

Based on investigation findings, one or more alternative business proposal can be analyzed together with their comparative advantages and disadvantages.

(iv) Documenting Feasibility Report:

Finally based on analysis, Feasibility report is produced which gives summary of Feasibility study and in conclusion indicates whether business proposal should be rejected, completely accepted or should be accepted with some modifications.

A well documented Feasibility report can be an obligation in case of large business proposal but in case of small business proposal, a decision 'to quit' or 'to go ahead' is just enough to be taken by entrepreneur.

Phase 2: Developing a Business Plan

A good business plan must be developed in order to exploit the defined opportunity. This is a very time-consuming phase of the entrepreneurial process. An entrepreneur usually has not prepared a business plan before and does not have the resources available to do a good job. A good business plan is essential to developing the opportunity and determining the resources

Business plan

Planning is a process that never ends in business. For that matter businesses may have different types of plans namely:

- Financial plans
- Marketing plans
- Human Resource Plans
- Production plans
- Sales plans etc.

DEFINITION OF THE BUSINESS PLAN

A business plan is a written description of your business's future, a document that tells what you plan to do and how you plan to do it.

"*A business plan is a written document prepared by the entrepreneur that describes all the relevant internal and external elements in starting the new venture".* It is often an integration of the functional plans mentioned above such as marketing, finance, human resource etc.

The business plan may be of interest to the following parties:

- Bankers
- Other investors like venture capitalists
- Suppliers
- Customers

OUTLINE OF A BUSINESS PLAN

1. **Introductory Page**

   This is the cover page that provides a brief summary of the business plan's contents. It will contain the following:

   - Name and address of the business
   - How the business is organized (sole proprietorship, partnership, corporation)?
   - Who are the business owners?
   - How long has the business been organized?
   - Statement of financing need
   - Statement of confidentiality of the report

2. Table of Contents

Your business and marketing plan should be clearly laid out and easy to use, so it's a good idea to include a full table of contents listing all key sections, and number all document pages. That makes it fast and easy for readers to access the sections they want.

3. Executive Summary

This is a one to two page highlight of key ideas/plans in business plan. The summary should interest a reader in the business concept and entice her/him to read the full plan.

4. Description of Venture

This section includes the detailed description of the business in terms of the followings key decisions:

- Products & Services:
  1. What does the business sell?
  2. What are the features and benefits of the product or service?
  3. What solution does the business offer to the marketplace?
  4. Describe your pricing.
- Size of business
- Office equipment and personnel
- Background of the entrepreneur(s)
- Location of the business:
  1. Where is your business located? (home-based; retail; commercial, etc….)
  2. Is the location of your business important?
  3. Does your business require special zoning, land or building improvements to accommodate your operation?
  4. If location is important, what are the features of your location?

5. Production Plan

This part details how the products will be manufactured in terms of;

- Manufacturing process (amount subcontracted)
- Physical plant

- Machinery and equipment
- Names of suppliers of raw materials

6. **Industry Analysis**

This section contains an assessment of the external and uncontrollable variables that may impact the business. This includes the legal and political, economic, social and cultural, technological and competitive environments. Its contents include;

- Future outlook and trends
- Analysis of competitors
- Market segmentation
- Industry forecasts

7. **Marketing Plan**

The marketing plan should include a review of industry conditions, a precise definition of the target market(s), an analysis of competitor advantages and weaknesses and a plan for promoting and selling your product or service.

7.1 Customers

In this section write a clear description of your target market and include their needs and wants.

Your product or service should offer a solution to the target market or provide a benefit to your customer.

- Who are the customers? (Individuals - age, gender, socio-economic characteristics, etc..; Corporations - size, industry, etc...)
- What do the customers need or want?
- Where are the customers?
- How does product or service satisfy customer needs?

7.2 Competition

This section identifies competitors providing the same or similar solution to your target market.

For each competitor, you should define strengths and weaknesses and in conclusion define how you will position your business in the market with the **established** firms. Do not assume that you have NO competitors. Somehow, someway your target market is using a product or service that meets the need you aim to satisfy.

- Where do potential customers currently buy the product or service you offer?
- Who else offers the product or service you offer?
- What are the strengths and weaknesses of your competitors?

- How will your business be positioned with the competitors?

7.3 Advertising and promotion

In this section, you should define how you will get your product or services to your target market. This includes marketing avenues - advertising, promotions, and public relations – and distribution channels.

- How will you reach customers?
- How do your target customers make buying decisions?
- Where do target customers shop for products or services?
- How will you incorporate a variety of marketing efforts? (Trade shows, advertisements, direct mail, directories, phone books, internet, periodicals, coop advertising, marketing/sales representatives, etc...)
- How will you measure the success of advertising and promotion efforts?

8. Organizational Plan

This part describes the form of business ownership and lines of authority and accountability for members of the new venture. Its contents include:

- Form of ownership
- Identification of business partners or principal shareholders
- Authority of principals
- Management team and background
- Roles and responsibilities of members of the organization

9. Assessment of Risk/risk analysis

This section identifies the potential hazards and alternative strategies that can be used to meet the business plan goals and objectives. It includes:

- Evaluation of the weaknesses of the business
- New technologies
- Substitute products or services
- Competition
- Contingency plans

10. Financial Plan

This section should include projections based on sound and reasonable assumptions. If the business plan is being presented for financing, the source and use of funds should be defined here.

- How much capital is needed to start or expand the business?
- How much capital can be raised by owners?
- How much additional capital is needed?
- What is the capital needed for?
- Historical financial statements
- Financial projections

11. Management

This Describe the organization and the key management team members. In this section you should demonstrate that your management team has technical abilities, marketing abilities and business acumen to succeed. In addition, identify directors and advisors who you will consult with. What background does the management team have? (Industry and management experience)

- What is the make-up of the board of directors or advisors?
- Accountant
- Attorney
- Banker
- Insurance agent
- Consultants

12. Appendix

This contains any supporting information that is not necessary in the body of the plan. Reference to these documents must have been made in the business plan itself.

- Letters
- Market research data
- Leases or contracts
- Price lists from suppliers

Why business plans do fail?

Thousands of business plans are created every year and only a small fraction of these businesses will succeed. While these business plans may contain solid ideas, they fail for specific reasons and their creators are forced back to the drawing board.

UNACHIEVABLE GOALS AND ASPIRATIONS

Setting high goals and having the best of intentions of making a business plan or a project work doesn't always turn out well in the real world. While it is important to have lofty goals, the path to achieving these goals needs to be realistic and attainable.

LACK OF MARKET RESEARCH

Market research is a vital part of starting a new business or project. If you don't fully understand the competition and the current situation of your marketplace, you don't have enough information to go forward. Before a business plan is drawn up or a project is begun, thorough market research needs to take place and the results need to be viewed realistically.

LOCATION

Your plan must consider location carefully. More small businesses fail because of poor location than for any other reason.

- Entrepreneur has insufficient experience and knowledge.
- Customer' need was never established.
- Entrepreneur has no sense of potential threats or weaknesses to business.

Who should write the Business Plan?

Ideally the business plan should be prepared by the entrepreneur. However he can consult widely with other experts such as engineers in the preparation of the business plan. Other times the entrepreneur can contract a management consultant to prepare the business plan but in this case the entrepreneur and the consultant must work closely together in order to prepare a realistic business plan.

Phase 3: Determine the Resources Required

The resources needed for addressing the opportunity must also be determined. This process starts with an appraisal of the entrepreneur's present resources. Any resources that are critical need to be differentiated from those that are just helpful. Care must be taken not to underestimate the amount of variety of resources needed. The downside risks associated with insufficient or inappropriate resources should also be assessed.

Acquiring the needed resources in a timely manner while giving up as little control as possible is the next step in the entrepreneurial process. An entrepreneur should strive to maintain as large an ownership position as possible, particularly in the start-up stage. As the business develops, more funds will probably be needed to finance the growth of the venture, requiring more ownership to be relinquished. Alternative suppliers of these resources, along with their needs and desires, need to be identified. By understanding resource supplier needs, the entrepreneur can structure a deal that enables the recourses to be acquired at the lowest possible cost and the least loss of control.

Financing Entrepreneurial ventures

A new business requires a great deal of planning, but without cash, the business will never get off the ground. As an entrepreneur, you may have a variety of choices in terms of financing the business, from personal, private and public sources. But before you make your decision on financing, it is a good idea to learn about those choices and determine which ones are the most effective for your business.

Ways of Financing a New venture

1. **Bank Loans.** Most banks tend to offer business lending services

2. Supplier Credit. Many companies that offer supplies and equipment will give you what you need on a credit basis especially if you can prove through your business plan that you will be able to repay the account.

3. **Equity Capital:** Equity capital refers to selling shares of the business to investors. Even if a company is not publicly traded, you can sell ownership or "stock" in the business to investors, who will look for dividends from the business's profit.

4. Government assistance. The government provides finance to companies in cash grants and other forms of direct assistance, as part of its policy of helping to develop the national economy, especially in high technology industries and in areas of high unemployment.

5. **Venture capital.** Venture capital is money put into an enterprise which may all be lost if the enterprise fails. A businessman starting up a new business will invest venture capital of his own, but he will probably need extra funding from a source other than his own pocket.

6. Friends and Family – Friends and family are one of the most conventional ways of financing small businesses. Many entrepreneurs have been able to leverage existing relationships and obtain funding, either as a loan or as a capital investment, for their businesses. Although this source of funding can be easier to obtain than others, it does have some inherent problems.

7. **Grants and contracts**

Generally available from government agencies, such as Social Security fund, and other insurance companies , such contracts are life-saving for many start-up companies.

Phase 4: Manage the Enterprise

After resources are acquired, the entrepreneur must use them to implement the business plan.

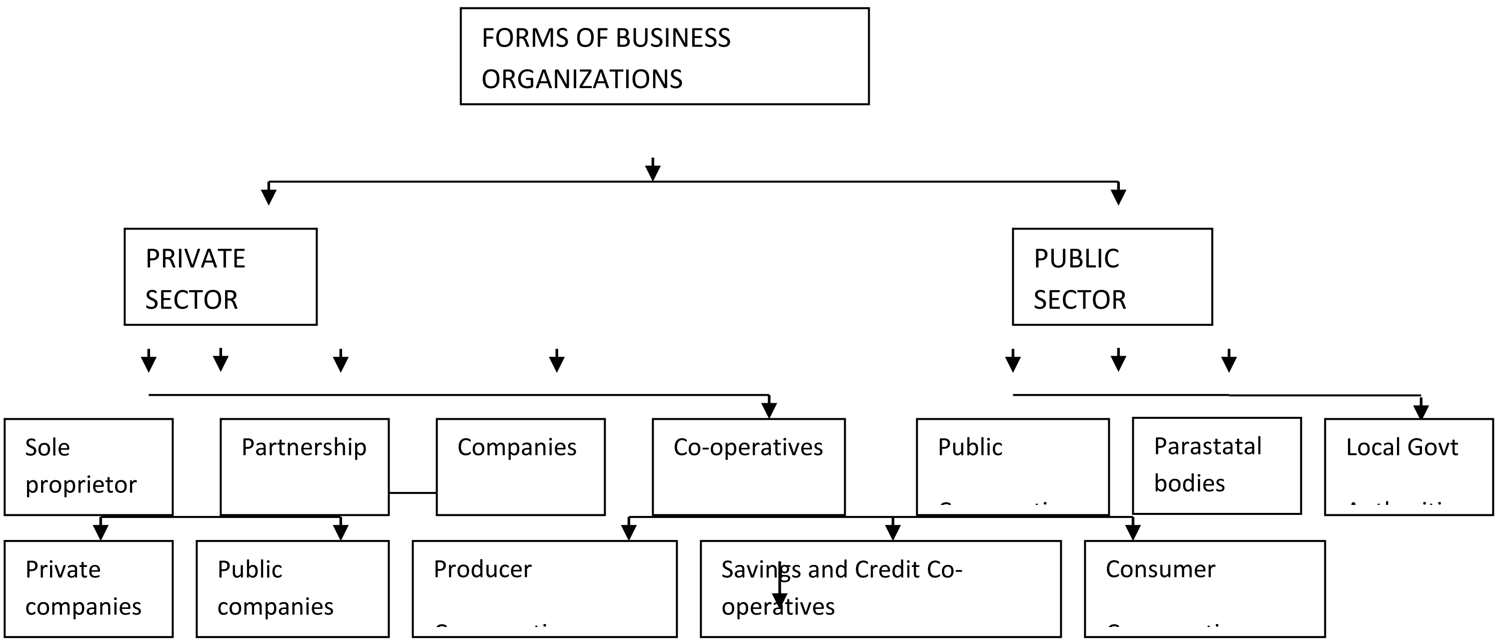
The operational problems of the growing enterprise must also be examined. This involves implementing a management style and structure, as well as determining the key variables for success. A control system must be established, so that any problem areas can be quickly identified and resolved. Some entrepreneurs have difficulty managing and growing the venture they created.

Chapter 4: FORMS OF BUSINESS OWNERSHIP

This chapter describes the various forms of business ownership or organizations, their comparative advantages and disadvantages and selection of an appropriate form of ownership.

A business organization is one unit of control which may be owned by one person or a group of persons and the operations can be controlled by owners themselves or by the managers on behalf of owners (especially in large organizations)

Various forms of business organizations may be classified as follows:



The private sector comprises of business organizations owned by the private individuals. The public sector comprises of business organizations which are either wholly by the Government or they are semi-government.

In the public sector, there are three main legal forms of business ownership

1) Public corporation,
2) Parastatal bodies and
3) Local Authorities

In the private sector, there are four main legal forms of business ownership

(1) The Sole Proprietorship

(2) Partnership

(3) The Company and

(4) Cooperative

1. THE SOLE PROPRIETORSHIP

The sole proprietorship is the oldest form of business organization. It is as old as the civilization itself. Historically, appears that business started first with this form of organization. It is the simplest and natural type of organization.

Sole proprietorship is a form of business enterprise, which is established, financed, owned, managed and controlled by an individual entrepreneur, who has complete freedom of operation, who bears all the risks and is entitled to all the profits. One-man business which is usually small but it can be as large as steel mill or a whole chain of supermarkets depending upon the resources available to the entrepreneur.

Characteristics of sole Proprietorship

The main characteristics of sole proprietorship are as under:

1. Ownership: The business is owned by a single individual. A person can undertake any lawful business activity for profit motive.
2. Management and Control: Being small in size, it is managed by the owner himself. However, he may have some paid workers to assist him. In any case, the ultimate control rests in his hands.
3. Finance: The necessary capital to run the business is provided by the sole owner. However, he may borrow from other sources such as friends, relatives, or a bank as need arises.

4. No separation between ownership Management: In proprietorship, management rests with the proprietor himself/herself. The proprietor is a manager also.
5. Risk: the proprietor himself bears all the risks. Nobody else has any stake in the business.
6. Close supervision: A sole proprietor can supervise his business closely as he has direct contact with his employees.
7. Independence: The owner is independent and so can put his plans into action quickly since he does not have to consult any other person. He may, for example, change the nature of his business as he wishes to adopt it to the changing market situation.
8. Unlimited liability: means that in case the enterprise incurs losses, the private property of the proprietor can also be utilized for meeting the business obligations to outside parties. The sole trader is personally liable for debits of the business. The creditors can lay claim not only on his business assets but also his personal property -such as cars, houses, furniture etc to recover to loan.
9. All Profits or Losses to the Proprietor: Being the sole owner of the enterprise, the proprietor enjoys all the profits earned and bears the full brunt of all losses incurred by the enterprise.

Advantages of So
le proprietorship

1. **His organization is very simple**. He takes all the decisions. There being no necessity to call any meetings or to go through the formalities of major approvals, etc. the decision can be taken and implemented quickly.
2. **A sole trader's business is very flexible**. He can make major policy decisions and changes in a minimum of time. He can change the nature of the business, or its premises, without having to seek approval from anybody.
3. **He/she takes all profits and bears all losses.**This provides him with a very high degree of incentive. He knows that his wisdom and hard work can benefit him and his/her mistakes can ruin him/her. Hence his extra zest and carefulness.
4. A sole trader is able to **establish a direct contact** both with his employees and customers. Many problems can be solved before it acquires serious proportions
5. **He/she enjoy top secrecy.** She is the only person who knows his business secrets and has a better to preserve them than any other form of ownership.

Limitations of Sole proprietorship

1. **Limited Resources**: A proprietor has limited resources at his/her command. The proprietor mainly relies on his/her funds and savings and to a limited extent, borrowings from relatives and friends. Thus, the scope for raising funds is highly limited in proprietorship. This in turn, limits the expansion and development of an enterprise.

2. **Unlimited liability**: The most serious disadvantages is his/her unlimited liability. If his/her business experiences a particular bad period, he may find his/her personal possessions, and along with them his social status, vanishing.

3. **Lack of continuity:** The continuity or permanence of sole proprietorship is normally difficult to maintain. If the proprietor dies, falls sick, gets imprisonment, is disabled and there is no suitable successor to him, the business is adversely affected. The business may be closed, sold or liquidated.

4. **Limited Managerial Ability:** In managing the business, the sole trader has to rely upon his own skill and judgment for operating the business. Most of the proprietors do not posses all the management skills required for financing, marketing, purchasing, producing and supervising of the business. Some of them may be production minded; others may be qualified for selling of the product while some are good at handling finances but are not good administrators. The sole proprietor being unable to perform all the duties and functions of management efficiently limits the size of a business according to his capacity. Also, due to lack of adequate and relevant knowledge, the decisions taken by him may be imbalanced.

5. **Unable to Carry out Research:** The smallness of his capital and the fear of risks of loss may stop the owner from indulging in market research and large investments, which would prove more paying in the long run.
6. **Over Worked:** The owner being the organizer performs a wide range of activities some of which he may have no experience in. He is, therefore, very much over worked.
7. **Difficulties of Expansion**: An individual proprietor faces difficulty in expending the sole trading business. Most of the capital which is invested in the business comes from the personal savings of the proprietor. The financial institutions are reluctant to advance long term loans to the owner of a sole proprietorship. As a result, the single owner of business, however rich he/she may be, find it difficult to expand the business and avail the economies of large scale production.

Sources of finance for the Sole Proprietor

For any business to start, availability of capital is the most important factor. Without capital it can be very difficult for a new business.

Some of the sources of capital for a sole proprietorship business are:-

i) **Saving:** Some people plan in advance to start a business and for that they start saving in order to accumulate the required amount.

ii) **‘Assistance’** from friends or relatives: This common way of raising capital to start a business. For example, if the person intending to start a new business or expand the already existing business. They either agree to return the money and sometimes they are given as a donation.

iii) **Proceeds:** From a sale of asset: This is a common way of raising capital to start a business. For example, if the person intending to start a business has a house or a car then he or she can sell that asset and use the money to start a business or expand the already existing business.

iv) **Bank loan:** A sole proprietor may apply for a loan from a bank or any other financial institution. But this can be difficult at times because a bank requires security against the loan and sometimes an individual who plans to start a new business may not be able to fulfill that requirement. A security can be in form of property or shares.

v) **Funding by NGO’s:** Non-government organization popularly known as NGO’s are helping some people to start a small business

vi) **Trade Credit:** Some people know big companies dealing in certain kinds of products and they can approach them to give them goods on credit. This normally happens ‘person to person.’ For example, an individual has some friends or relatives who are either working in or owning manufacture or a wholesale business. Such people can help the trader to get to have strict control and discipline so that he can sell and pay back for those goods at an agreed time. In this way his credit ratings will improve and he can expand business.

2. PARTNERSHIP

You have just seen that the proprietorship form of ownership suffers from certain limitations such as limited resources, limited skills and unlimited liability. Expansion in business requires more capital and managerial skills and also involves more risk. A proprietor finds himself unable to fulfill these requirements. This calls for more persons to come together and start a business. For example, a person who lacks managerial skills but may have capital. Another person who is a good manager but may not have capital. When these persons come together, pool their capital, skills and organize a business, *it is called partnership.*

Definitions of partnership

The Indian Partnership act of the 1932, section 4, defined partnership as “the relation between persons who have agreed to share the profits of business carried on by all or any of them acting for all.”

The Uniform Partnership Act of the USA defined a partnership as “an association of two or more persons to carry on as co-owners of a business for profit.”

*According to J.L. Hanson, “*A partnership is a form of business organization in which two or more persons up to a maximum of twenty join together to undertake some form of business activity.”

L.H. Haney defines partnership in the following words. “Partnership is the relationship between persons who agree to carry on a business in common with a view to private gain.”

Thus, partnership is an association of two or more persons (Maximum 20) who have agreed to share the profits of a business, which they run together. This business may be carried on by all or any one of them acting for all. The persons who own the partnership business are individually called ‘*partners*’ and collectively they are called ‘*firm*’ or ‘*partnershipfirm*.’

Partnership may be temporary or permanent. *A temporary partnership* is formed for either a specified period or a specified purpose, at the expiry of which the partnership is dissolved.

Permanent partnerships are intended to continue indefinitely, i.e. their end is not known at the time of formation.

Elements of Partnership

The essential elements of partnership as a form of business organization are follows:

- ✓ ***Association of at least two persons***must join together to form a partnership.
- ✓ ***Contractual relation.*** There must be an agreement between persons wish to forming a partnership.
- ✓ ***Earning of profit.*** The agreement must be to share profit/ loss of a business.
- ✓ ***Mutual agency.*** The business of partnership may be carried on by all the partners or by anyone of them acting for all. Thus, every partner is an agent of other partners and at the same time of the firm.

Types of partners

Partners may be classified in various ways:

a) According to the role played by them: partners may be active or dormant
b) According to their liability for the firm’s debts, partners may be limited or general
c) classified according to their age, they may be major or minor
d) Classified according to capital contributions, they may be real or quasi.

1. Active and dormant partners

An active partner plays active role in the affairs of the business, he takes part in the management of the firm and may be given a fixed area of responsibility eg sales, accounts etc.

A dormant (sleeping or silent) partner contributes towards capital, shares profits and losses and is equally responsible for the debts of the firm, but he takes no part in the running of the business.

2. **Limited and general partners**

A limited partner is a person whose liability towards the debts incurred by the business is limited to a stated sum, usually the capital contributed by him.

A general partner has unlimited liability and may be called upon to meet the firm's debts from his personal resources if the firms fail to settle them.

3. **Minor and major partners**

A majority is over 18 years and a minor is below 18 years of age. Minor can be admitted as a partner under circumstances and is entitled to some privileges. He is not liable for the firm's debts beyond his capital. When he attains majority he decides whether or not wish to continue as a partner. If he continues then he assumes rights and responsibilities of a major partner. If he does not continue, he is given back his capital and his departure does not dissolve the partnership.

4. **Quasi partner**

This is a person who does not contribute any capital or take any part in the business but allows the firm to use his name as partner. He is not liable for the debts of the firm.

Partnership deed

This is a written agreement before entering into partnership. It is intended to outline the basis on which the partnership is being formed.

Contents of partnership deed

- Name of the firms
- nature of the business
- Names, addresses and occupation of each partners
- Status or type of each partner
- Places of the businesses (location)
- Amount of capital to be contributed by each partner
- Profit sharing ratio between the partners
- Loans and advantages from and the rate of interest thereon
- Drawings allowed to the partners

- Amount of salary and commission, if any, payable to the partners
- Duties, powers and obligations of partners
- Maintenance of accounts and arrangement for their audit
- Mode of valuation of goodwill in the event of admission, retirement or death of a partner.

Dissolution of a partnership

A partnership may be dissolved in the following circumstances:

- If it is a temporally partnership
- If a partner become insane or bankrupt or if he dies
- If a partner notifies other partners in writing his intention to dissolve the partnership
- A court may dissolve it

Merits of a partnership

- Simplicity of Formation: The partnership, like the sole proprietorship, can be easily organized. There are no complicated legal formalities involved in the establishment of partnership business. The partners enter into a partnership agreement, get the firm registered and start business.
- Partners can raise more capital than a sole proprietor.
- Combined Talent and Skills: As there are more than one owner in partnership, all the partners are involved in decision making. Usually, partners are pooled from different specialized areas to complement each other.
- Losses and liability are shared
  Business can be easily expanded
- In the event of difficulty, mutual discussions among partners are likely to come up with solution.
- Profit Incentive: The profits are shared by the partners as per agreement. They are encouraged to do more work to earn more profit. Higher the profit, higher will be the partners' share.

Demerits

- Limited Life of Firm: The duration of the partnership is always uncertain. If any partners dies, injured, withdraws, sells his interest, or new partner is admitted into the business, or there arises differences, the partnership may come to an end. There are possibilities of the dissolution of the firm due to internal differences.
- Partners are liable to disagree on various matters affecting the business.

- Profits are shared which reduces the amount receivable by each partner
- Since the all major decisions must be taken by the consent of all partners, they may often be delayed, sometimes resulting in a failure to take advantage of a particularly attractive bargain.
- Unlimited Liability of Partners: One of the basic defects of partnership is that the partners are personally and jointly responsible for all the debts of the firm. In case the business suffers losses and the business assets are not sufficient to satisfy the claimants on liquidation, the personal property of one or more than one partners can be sold under the court order for the clearance of the debts of the business.

3. JOINT STOCK COMPANY

"A joint stock company is a voluntary association of persons binded together for some particular object, usually to carry on a business with a view of making a profit". This definition very much resembles the definition of a partnership firm except in one respect. A joint company is a corporate body, i.e. it is created under law and has an entity of its own, quite separate from members that comprise it.

Characteristics of the Joint Stock Company

- **Legal personality**

A company is an artificial person created by law. It has an entity separate from that of its members. The persons contributing capital are known as shareholders.

As the company has a separate legal existence apart from its members, it can own property or transfer the title of property, enter into contracts in its own name, sue and be sued in a court of law.

- **Capital divided into transferable shares**

The capital of a company is divided into a number of shares. Each share is transferable. That means a shareholders can sell his interest in the company to another person without getting the consent of other shareholders. Of course, it is true that there are certain restrictions in the transfer of shares in the case of a private company.

- **Common seal**

Since a company is separate entity it will be necessary for it to sign papers and documents. Such signature is embodied in the common seal of the company.

The seal is kept under the safe custody of some responsible official so as to avoid its misuse.

- **Long life**

It enjoys continued existence. The death or retirement of any member cannot affect the running life of the company. Its life is separate from its members.

- **Object**

The basic object of the formation of the joint stock company is to earn profit. Whole profit is not distributed among the shareholders but some portion of profit is transferred to reserve fund. So that it may be used at the time of emergency.

- **Number of members**

There is large number of members in the joint stock company. In the case of Public Company, minimum number of members is seven and there is no restriction for the maximum number of members. In case of a Private Company, minimum number of members is two and maximum is fifty.

- **Large business**

As there is no limit to the maximum number of shareholders in case of a Public Company, capital may be increased and large business may be commenced. But it is not possible in other form of organizations due to lack of capital.

- **Trade agreement**

As joint stock company enjoys separate existence so it can join the trade agreement with other firms in its own name

- **Changing nature of business**

In the partnership, the nature of business may easily be changed with mutual consent of partners. But object clause of the Memorandum of Association in a company which also describes the nature of business may not be changed except by the sanction of the court.

- **Duration**

A company enjoys continuous existence. The existence of the company is not affected by the transfer, death or insolvency of the members. The members may come and the members may go, its continuity is not affected until dissolved by a process of law.

- **Winding up**

The continuous existence of a company can come to an end only through winding up, which is only possible through a legal process. A liquidator is appointed for this purpose who carries the company to its end under a strict legal procedure.

TYPES OF COMPANIES

Companies may be classified mainly in two groups: registered and statutory companies. Registered companies are those that are formed and registered and the Companies Act. These are the most common types of company. Statutory companies are created by an Act of parliament.

Types of registered companies

Registered companies may be further classified into the following:

a. According to the number of members, they may be classified as public or private
b. According to the liability of members, they may be classified as limited or unlimited companies
c. Limited companies may be limited by shares or limited by guarantee.

(a) Limited and Unlimited companies

Limited company is one where the liability of its members is limited to a stated amount. And ***unlimited company*** is a company where members i.e. shareholders have unlimited liability. The shareholders of an unlimited company are liable to pay the debts and other obligations of the business as in an ordinary partnership. Such companies are very rare in East Africa as the public does not like to form this type of company.

(b) Company limited by shares

These are the most common type of companies these days in which liability of each shareholder is restricted to the value of the shares. Such companies are either

(i) Private or
(ii) Public

1. **Private Limited Company**

   These are developed form of partnership. They can have from two members but the maximum may not exceed fifty, excluding employees.

   - A private company is not allowed to call upon the public for funds in the form of shares or debentures.
   - Any transfer of shares is restricted. It must be approved by the Board of Directors.
   - It must use "Limited" as the last word of its name.

2. **Public Limited Company**

   A public company is one whose membership is more than seven and there are no restrictions for maximum number of members. Its shares are freely transferable.

   - The owners or members of the company are the people who hold its shares. Such people are called shareholders
   - The day-to-day affairs of the company are managed by people called "Directors" who are elected by shareholders from among themselves.
   - The company is not affected if a shareholder becomes bankrupt or insane, or if a shareholder dies.

Formation of a limited company

In order to form and register a company, there are certain procedures to follow:

As a start, there should be some people who come up with an idea of forming a company and setting it in operations. These are the founder members of the company and are known as "PROMOTERS". To form a private company, it requires minimum of two and a public company requires minimum of seven promoters.

Following are the steps taken to register a company

1. **Search for the name**: They pay a small fee to registrar of companies to search and approve the chosen name by the promoters. The purpose of this exercise is to find out whether another company has already been registered with the same name or not. If the name is identical to the name of an existing company then the promoters choose another name.

2. Once the name is approved, they go ahead and prepare certain necessary legal documents. There are as follows:

- Memorandum of association
- Articles of association

These are further explained below:

1. Memorandum of association

At first the promoters have to make an application to the registrar of companies that they need to be into a company. The application must be signed by all of them and takes the form of a document known as a Memorandum of Association. The document states:

(i) The name of the company with the word "limited" as the last word in the name e.g. XYZ stationers limited (or "Ltd" in short).

(ii) The city and the country in which the registered office is situated

(iii) A statement that the liability of the members is limited

(iv) The objectives of the company. It outlines the aims and the purpose for which the company is being formed. The company cannot act beyond the objectives stated in the memorandum

(v) A statement of nominal authorized capital with which the company wants to be registered. The registration fee is calculated according to this capital.

(vi) Declaration: This confirms that the promoters want to form themselves into a limited company. This declaration is signed by a minimum of seven persons in case of public company and at least two in case of private company

The purpose of the memorandum of association is, thus, to define the companies' objectives, powers and serves as a guideline to the outside public.

2. Article of association

This is the second most important legal document that must be made, signed by the promoters and sent to the registrar. It includes regulations governing the internal management and administration of the company. It is very essential in the case of a private company but a public company may, if it wishes, adopt the standard set of articles known as "TABLE"

The points contained in the Articles of Association are:

1. Classes and rights of shareholders
2. The issue and transfer of shares

3. Methods of dealing with any alterations on the capital
4. Procedures of general meetings and voting rights
5. Qualifications, duties and powers of directors
6. Borrowing, dividend and reserve policies
7. Auditing of the books, etc

These articles of Association, thus, serve as a guideline to the internal management of the company. The document is also signed as in case of memorandum of association. Both documents will be submitted to registrar's office along with other necessary documents. The memorandum and articles of association serves as the constitution of the company.

Advantages of limited companies

A limited company is liked more than other form of organizations due to the following advantageous factors

1. **Limited liability**: The liability of each shareholder is limited. If the company declared bankrupt, the shareholder is not liable to pay the company's debts from his personal account or property. But in sole tradership and partnership, private property of owners is also liable to pay the debts of the business.
2. **Larger capital**: Because of their large membership, companies are in a better position to raise huge capital than sole traders and partnerships.
3. **Assured continuity of Business:** Since the death, bankruptcy or withdrawal of any one member does not affect the company, companies have an assured continuity (long life).
4. **More Sources of Funds:** The sale of company shares on the stock exchange stimulates investment even from small savers and persons of varying incomes. The problems of deficiency of capital may not arise in this type of organization. A company can also raise more money through sale of debentures.
5. **Expert Management:** A company can have directors who are experienced in different fields; therefore, they can manage the company more professionally. A company is financially strong enough to employ specialists or hire the services of people who are qualified in technical and administrative abilities.
6. **Large Scale Production:** Due to large capital available, production can be done on a bigger scale as compared to other business organizations.
7. **Share of Loss:** Large membership and the fact that the capital is divided into different classes of shares means that the risk of loss shared and spread. The loss can be sustained by a large number of investors but in the case of sole trader ship and partnership a loss may result in closing of business.

8. **Transferability of Shares:** The shares capital, a limited company may easily be transferred to another person or may be disposed of in the stock exchange. Therefore, the members are always in a position to withdraw their capital.
9. **Higher Profit:** Due to its huge capital, a limited company can enjoy the benefits of large scale production, management and distribution which results in lesser production costs and higher profits. By introducing better methods of production, they try to save or reduce wastage and unnecessary expenditure.
10. **Job Opportunities:** A Limited Company form of organizations provides job opportunities to minions of people working in various industrial enterprises all over the country.
11. **Boosting the Economy:** Due to large-scale production, companies pay more taxes and duties which help the government collect revenue and increase the economic activities in the country. Individual units produce goods at large scale and thus provide necessities of life at low prices and create employment. Therefore, the healthy growth of limited companies may bring positive results in the economic structure of the country.
12. **Welfare of Employees:** Employees of a company can also buy shares. This can encourage them to work harder and be loyal to the company.

CO-OPERATIVE SOCIETIES

Co-operative is yet another form of business ownership. Co-operatives are business enterprises that are owned jointly by members, who may be private individuals or other business organizations.

A cooperative is an autonomous association of persons who voluntarily cooperate for their mutual, social, economic, and cultural benefit.

This is a very common form of organization in some countries where there are a large number of small businesses in an industry, such as farming, agriculture and retailing. The formation of the co-operatives is encouraged to ensure the sharing of techniques of production and technology so as to improve efficiency and productivity.

It's an undertaking of an association of individuals who make efforts to achieve any common objectives for the common interest of its members. A co-operative society differs from other r major forms of organization as it is set up not for earning profit as its main rule of co-operative society is *"one for all and all for one."* it is established by a certain number of persons with a sprit of service in order to achieve self-help and render services to its members which is managed in a democratic manner. A co-operative organization is based on equality of persons for the promotion of economic interest of themselves.

Certain features are common to all co-operatives:-

- All members can contribute to the running of the business, sharing the work load, responsibilities and decision making , although in large co-operatives some delegation to professional managers takes places;
- All members have one vote at important meetings,

- Profits are shared equally amongst members.

Cooperatives around the world generally operate according to the same core principles and values, adopted by the International Co-operative Alliancein 1995.

The seven cooperative principles

1. **Voluntary and Open Membership**: Cooperatives are voluntary organizations, open to all people able to use its services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.
2. **Democratic Member Control**: Cooperatives are democratic organizations controlled by their members; the affairs of the cooperative must be administered in a democratic manner. Each member must have a vote. Each member must have only one vote, even if he holds a great number of shares. The principle states; one man, one vote.
3. **Members' Economic Participation**: Members contribute equally to, and democratically control, the capital of the cooperative. This benefits members in proportion to the business they conduct with the cooperative rather than on the capital invested.
4. **Autonomy and Independence**: Cooperatives are autonomous, self-help organizations controlled by their members. If the co-operative enters into agreements with other organizations or raises capital from external sources, it is done so based on terms that ensure democratic control by the members and maintains the cooperative's autonomy.
5. **Education, Training and Information**: Cooperatives provide education and training for members, elected representatives, managers and employees so they can contribute effectively to the development of their cooperative. Members also inform the general public about the nature and benefits of cooperatives.
6. **Cooperation among Cooperatives**: Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.
7. **Concern for Community**: While focusing on member needs, cooperatives work for the sustainable development of communities through policies and programs accepted by the members.

TYPES OF COOPERATIVES

Cooperatives are of various types depending upon their objects and nature of work. Some of the cooperatives have been formed to help consumers and other have been established to help producers.

Producer's cooperative societies

The producer's cooperatives are established by the small producers. The members of the society produce goods in their houses or at

common place. The raw material, tools money etc. is provided to them by the society. The output is collected by the society and sold in the market at the wholesale rate. The profit is distributed among the member in proportion to the goods supplied by each member.

1) Consumer's cooperative societies:

Consumer's cooperatives are established to remove middlemen from the field of trade.

These societies purchase foods at the wholesale prices and sell these goods to the members at cheaper rates than the market prices. However, the goods are sold to the nonmembers at the market rates. The profit, if any, is distributed among the members in the shape of bonus according to their purchase ratio.

2) Saving and Credit cooperative societies:

These cooperatives are formed for the financial help of the members. They save and provide loans to the members at low rate of interest.

PUBLIC ORGANIZATIONS

This is also known as the public sector. These consist of business organizations where the Government is responsible for the profit and loss in any business undertaking. They are mainly large organizations that are either expensive to run and need a considered too important to benefit to private enterprise.

It involves all those business, trade and industrial activities, which are carried on under the ownership and management of the government. It is regarded most essential to promote the welfare and economic activities of a country. The main example of state enterprises are the nationalized industries like railways, electricity, waterways, airlines, telecommunication, energy, postal services, broadcasting etc. the state enterprises are conducted by government or semi-government organization and public or statutory corporations. However, in recent years, the government's role as an entrepreneur is declining due to privatization of some industries.

Also, there has been considerable debate over whether the government should be involved with running of business or whether this is best left in the hands of private industrials.

Many countries are now pursuing policies of privatization (returning nationalized industries to private ownership). Privatized companies are responsible to shareholders; just like any of the public limited company.

1. **Public corporations**

A public corporation is a joint stock company in which the government holds either all the share capital, or a majority of it. It is usually created by an act of parliament which clearly defines its aims and objects.

- These are commercial organizations owned by the state with a legal entity.
- They operate not solely for profits but for public interest by representatives of the public.
- They are paid for from Government finances, and consumer expenditures.

2. **Local authorities**

Local bodies consist of city Councils, Municipal Councils; Country Councils may also perform certain commercial functions, etc. These are established in urban areas. They are responsible to supply water, health services, primary education, bus services, sports stadium etc. in their respective towns.

3. **Parastatal Bodies**

Parastatal bodies are established by the government to perform some specific functions. These functions may not necessarily be commercial functions, nor may the body aim at making profit. Their management is also in the hands of Board of Directors. The members of Board of Directors are appointed by the Government. Parastatal bodies do not have share capital. They are financed by the Government. For example, parastatals are formed to market agriculture produce by establishing marketing board or provide quality educational materials through the establishment of educational and publishing institutes.

UNIT 2 : IT PROJECT MANAGEMENT

Information Technology Project Management (ITPM) is one of the important knowledge of the concepts, theories, methodologies and technique of software project management as well as related skills.

LEARNING OUTCOMES

After successful completion of this Unit, students will be able to: Demonstrate knowledge of project management concepts, methodologies and techniques actively participate as a manager or member of an Information Technology Project.

CHAPTER 1 : Introduction to Project Management : Explain what a project is, provide examples of information technology projects, list various attributes of projects, and describe the triple constraint of projects , Describe project management and discuss key elements of the project management framework, including project stakeholders, the project management knowledge areas, common tools and techniques, and project success factors , Describe the role of the project manager by describing what project managers do, and the skills they need, Describe the importance of ethics in project management , Identify different project management software.

CHAPTER 2: Information Technology Context in Project Management: Describe the systems view of project management and how it applies to information technology projects, Explain why stakeholder management and top management commitment are critical for a project's success, describe the concept of a project phase and the project life cycle.

The Context of Information Technology Projects: The nature of information technology projects, Characteristics of information technology project team members, diverse technologies.

CHAPTER 3: Project Time and Communications Management:

Project Time management: State the importance of project schedules and good project time management, Define activities as the basis for developing project schedules, Find the critical path for a project, Use the Program Evaluation and Review Technique (PERT) as project time management technique.

Project Communications Management: Introduction to Project Communications Management, Communications Planning, Information Distribution, Performance Reporting.

Main Reading

"Information Technology Project Management" Kathy Schwalbe,
Fourth Edition, THOMSON Course Technology, 2007 (ISBN 81-315-0123-X).

Supplementary Reading

1. "Software Project Management" Bob Hughes and Mike Cotterell, Fourth Edition, Tata McGraw-Hill
2. http://en.wikipedia.org/wiki/List_of_project_management_software

CHAPTER 1: INTRODUCTION TO PROJECT MANAGEMENT

Many organizations today have a new or renewed interest in project management. Computer hardware, software, networks, and the use of interdisciplinary and global work teams have radically changed the work environment.

Project Management Statistics

- Worldwide IT spending continues to grow, and Forrester Research predicts that U.S. IT spending will grow by another 5.7 percent in 2005, to reach $795 billion.*
- In 2003, the average senior project manager in the U.S. earned almost $90,000 per year, and the average Project Management Office (PMO) Director earned more than the average Chief Information Officer ($118,633 vs. $103,925).**

Motivation for Studying Information Technology (IT) Project Management

- IT projects have a terrible track record.
  - A 1995 Standish Group study found that only 16.2 percent of IT projects were successful in meeting scope, time, and cost goals.

Over 31 percent of IT projects were canceled before completion, costing over $81 billion in the U.S. alone.

Advantages of using Formal Project Management

- Better control of financial, physical, and human resources.
- Improved customer relations.
- Shorter development times.
- Lower costs.
- Higher quality and increased reliability.
- Higher profit margins.
- Improved productivity.

- Better internal coordination.
- Higher worker morale (less stress).

What Is a Project?

- A **project** is "a temporary endeavor undertaken to create a unique product, service, or result."*
- Work done to sustain the business.
- A project ends when its objectives have been reached, or the project has been terminated.
- Projects can be large or small and take a short or long time to complete.

Project Characteristics

- A project:
  - Has a unique purpose.
  - Is temporary.
  - Is developed using progressive elaboration.
  - Requires resources, often from various areas.
  - Should have a primary customer or sponsor.
  - The **project sponsor** usually provides the direction and funding for the project.

Involves uncertainty

Project and Program Managers

- Project managers work with project sponsors, project teams, and other people involved in projects to meet project goals.
- **Program**: "A group of related projects managed in a coordinated way to obtain benefits."*
- Program managers oversee programs and often act as bosses for project managers.

Types of Projects

1) Administrative

Ex. Installation of new account system.

2) Construction

Ex. Building or road construction

3) Computer software development

Ex. A new computer program

4) Design of plans

Ex. Architectural or engineering plan

5) Equipment or system Installation

Ex. Telephone or IT system

6) Event or Relocation

7) Maintenance of process industry

Ex. Petro chemical plant

8) New product development

9) Research

Ex. Investigating a chemical

10) Others

Ex. ????

Attributes of projects

Project Attributes are a collection of descriptive characteristics and parameters of some project to define key information about the project and communicate it to stakeholders. They describe project performance and activity status. Examples of project attributes are: goal, phase, duration, requirement, risk, deliverable, scope, etc.

Project attributes serve as the basis for collecting and analyzing project data. They are used in planning, monitoring, measuring and controlling project activities. Project analysis uses various project attributes to explore unsolved risks, check deadline status, monitor milestones, allocate resources, manage changes, and do other activities of the project management process.

Most project attributes can be organized, sorted and summarized in certain categories. For instance: some of the categories may include such attributes as project duration, people involved in the project, time and costs required for completion, scope and deliverables, etc. Categorization of project attributes makes it easier to organize and understand project data

According to Clements & Gido, a project is an endeavour to accomplish a specific objective through a unique set of interrelated task and the effective utilization of resources.

Based on that definition, we can underline the word ‘objective’ in that statement. The objective is one of the attribute to help define a project. So, we can deep a look into what are the project attributes. The following attributes are:

1) a project need a well-defined objective.

This means the objective of a project is usually defined in terms of scope, schedule, and cost. An organization doing a project needs to set up a good objective. This objective will be help that organization to identify their needs and their aim before begin their project.

2) a project is carried out through a series of interdependent tasks.

a project always relate with various tasks. for that reason, a project need to be accomplished in a certain sequence in order to achieve the project objective.

3) Utilizes various resources

project also dealing with various resources which include different people, organizations, equipments, materials, and facilities.

4) a project has specific time-frame

every project has a start and end. For that reason, an organization need to consider the effectiveness and efficiency of their time during the implementation of project

5) a project may be unique or one-time endeavour

each of project has different types of project shape. some projects, like designing and building a space station, are unique because they have never before been attempted. this uniqueness can be a challenge to the subject who perform the project.

6) a project has customer

The customer is the entity that provides the funds necessary to accomplish the project. So, an organization who involved with a project must be make their customer satisfy and happy.

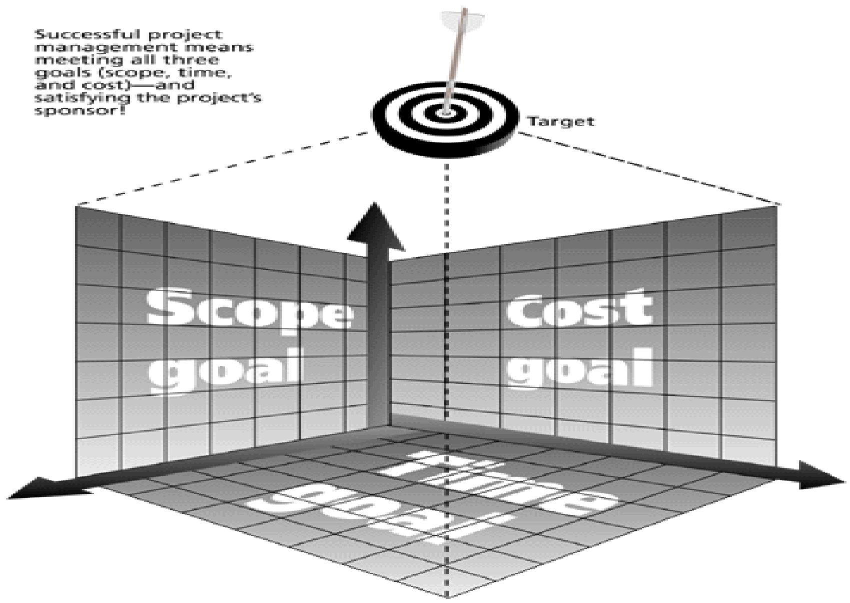
7) Project involves degree of uncertainty

An organization who involved in the project, need to calculate the risk of the project. This is for prevent from loss and also make sure the project can run smoothly and successfully.

In conclusion, good project implementation begins with the understanding of the project attributes. If it can be very good implemented, it can make the project done successfully.

The Triple Constraint of Project Management (Limitation)

- Every project is constrained in different ways by its:
    - **Scope** goals: What work will be done?
    - **Time** goals: How long should it take to complete?
    - **Cost** goals: What should it cost?
- It is the project manager's duty to balance these three.



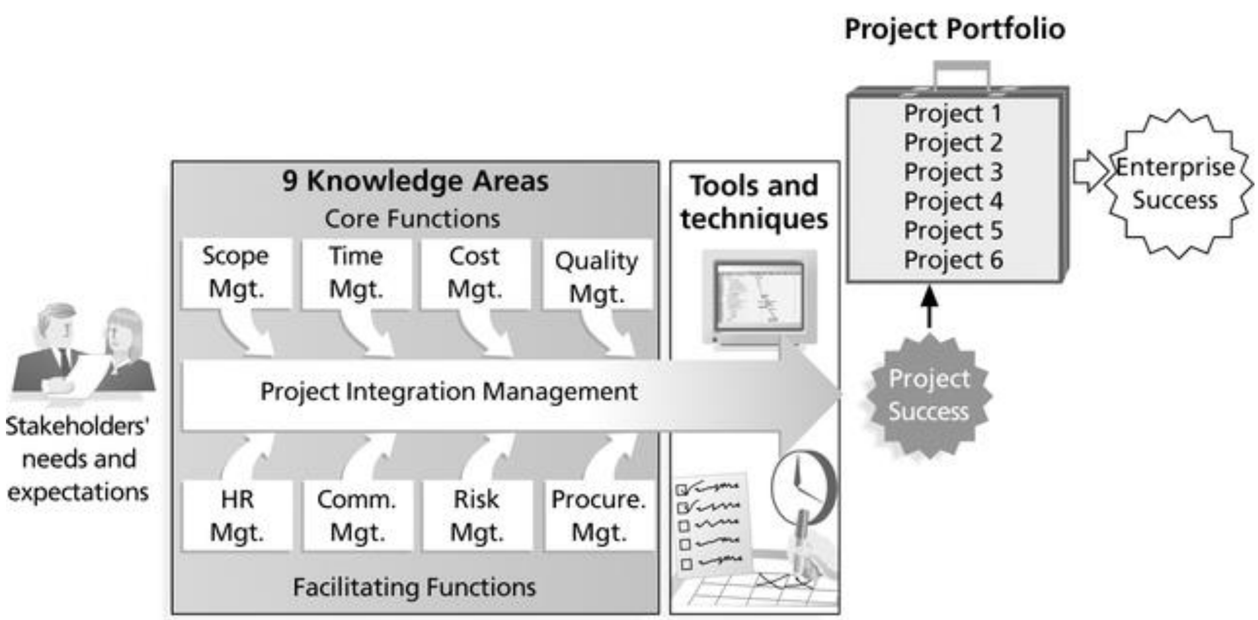
Successful project management means meeting all three goals (scope, time, and cost) – and satisfying the project's sponsor!

What is Project Management?

- **Project management** is "the application of knowledge, skills, tools and techniques to project activities to meet project requirements.
- A project is a planned undertaking
- A project manager is a person who causes things to happen

  Therefore, project management is causing a planned undertaking to happen

Project Management Framework



Project Stakeholders

- **Stakeholders** are the people involved in or affected by project activities.
- Stakeholders include:
    - Project sponsor
    - Project manager
    - Project team
    - Support staff
    - Customers
    - Users
    - Suppliers
    - Opponents to the project

Nine Project Management Knowledge Areas

- Knowledge areas describe the key competencies that project managers must develop.
    - Four core knowledge areas lead to specific project objectives (scope, time, cost, and quality).
    - Four facilitating knowledge areas are the means through which the project objectives are achieved (human resources, communication, risk, and procurement management).
    - One knowledge area (project integration management) affects and is affected by all of the other knowledge areas.
    - All knowledge areas are important!

Project Management Tools and Techniques

- Project management tools and techniques assist project managers and their teams in various aspects of project management.
- Specific tools and techniques include:
    - Project agreements, scope statements.
    - Network diagrams, critical path analyses, critical chain scheduling (time).
    - Cost estimates.

Project Portfolio Management

- Many organizations support an emerging business strategy of **project portfolio management**:
    - Organizations make group and manage projects as a portfolio of investments that contribute to the entire enterprise's success.

The Standish Group's CHAOS studies show improvements in IT projects in the past decade

Measure	1994 Data	2002 Data	Result
Successful projects	16%	34%	Doubled
Failed projects	31%	15%	Halved
Money wasted on challenged and failed projects	$140 B out of $250 B	$55 B out of $255 B	More than halved

The Standish Group, "Latest Standish Group CHAOS Report Shows Project Success Rates Have Improved by 50%" (March 25, 2003).

Why the Improvements?

The reasons for the increase in successful projects vary. First, the average cost of a project has been more than cut in half. Better tools have been created to monitor and control progress and **better skilled project managers with better management processes** are being used. The fact that there are processes is significant in itself

Project Success Factors

1 Executive support

2. User involvement

3. Experienced project manager

4. Clear business objectives

5. Minimized scope

6. Standard software infrastructure

7. Reliable estimates

8. Other criteria, such as small milestones, proper planning, competent staff, and ownership

The Role of the Project Manager

- Job descriptions vary, but most include responsibilities such as planning, scheduling, coordinating, and working with people to achieve project goals.
- Remember that 97 percent of successful projects were led by experienced project managers.

Suggested Skills for Project Managers

- Project managers need a wide variety of skills.
- They should:
  - Be comfortable with change.
  - Understand the organizations they work in and with.
  - Lead teams to accomplish project goals.
- Project managers need both "hard" and "soft" skills.
  - **Hard skills** include product knowledge and knowing how to use various project management tools and techniques.

- **Soft skills** include being able to work with various types of people.

- **Communication skills**: Listens, encourages.
- **Organizational skills**: Plans, sets goals, analyze.
- **Team-building skills**: Shows empathy, motivates, promotes esprit de corps.(we felling)
- **Leadership skills**: Sets examples, provides vision (big picture), delegates, positive, active.
- **Coping skills**: Flexible, creative, patient, strong-minded.
- **Technology skills**: Experience, project knowledge.

Media Snapshot – Good Project Management Skills

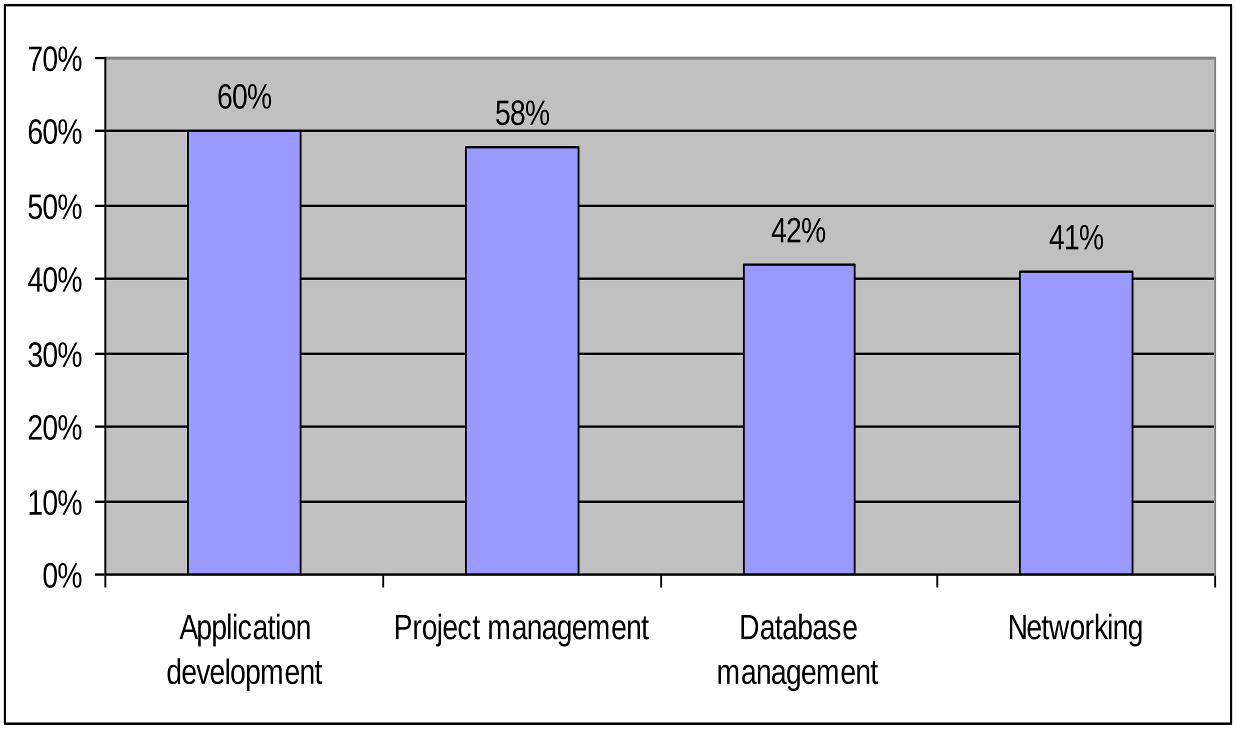
- Leadership and professionalism are crucial.
- Know what your sponsor expects from the project, and learn from your mistakes.
- Trust your team and delegate decisions.
- Know the business.
- Stand up for yourself.
- Be a team player.
- Stay organized and don't be overly emotional.
- Work on projects and for people you believe in.
- Think outside the box.

Top Ten Most In-Demand IT Skills

Rank	IT Skill/Job	Average Annual Salary
1	SQL Database Analyst	$80,664
2	Oracle Database Analyst	$87,144
3	C/C++ Programmer	$95,829
4	Visual Basic Programmer	$76,903
5	E-commerce/Java Developer	$89,163
6	Windows NT/2000 Expert	$80,639
7	Windows/Java Developert	$93,785
8	Security Architect	$86,881
9	Project Manager	$95,719
10	Network Engineer	$82,906

Paul Ziv, "The Top 10 IT Skills in Demand," Global Knowledge Webcast (*www.globalknowledge.com*) (11/20/2002).

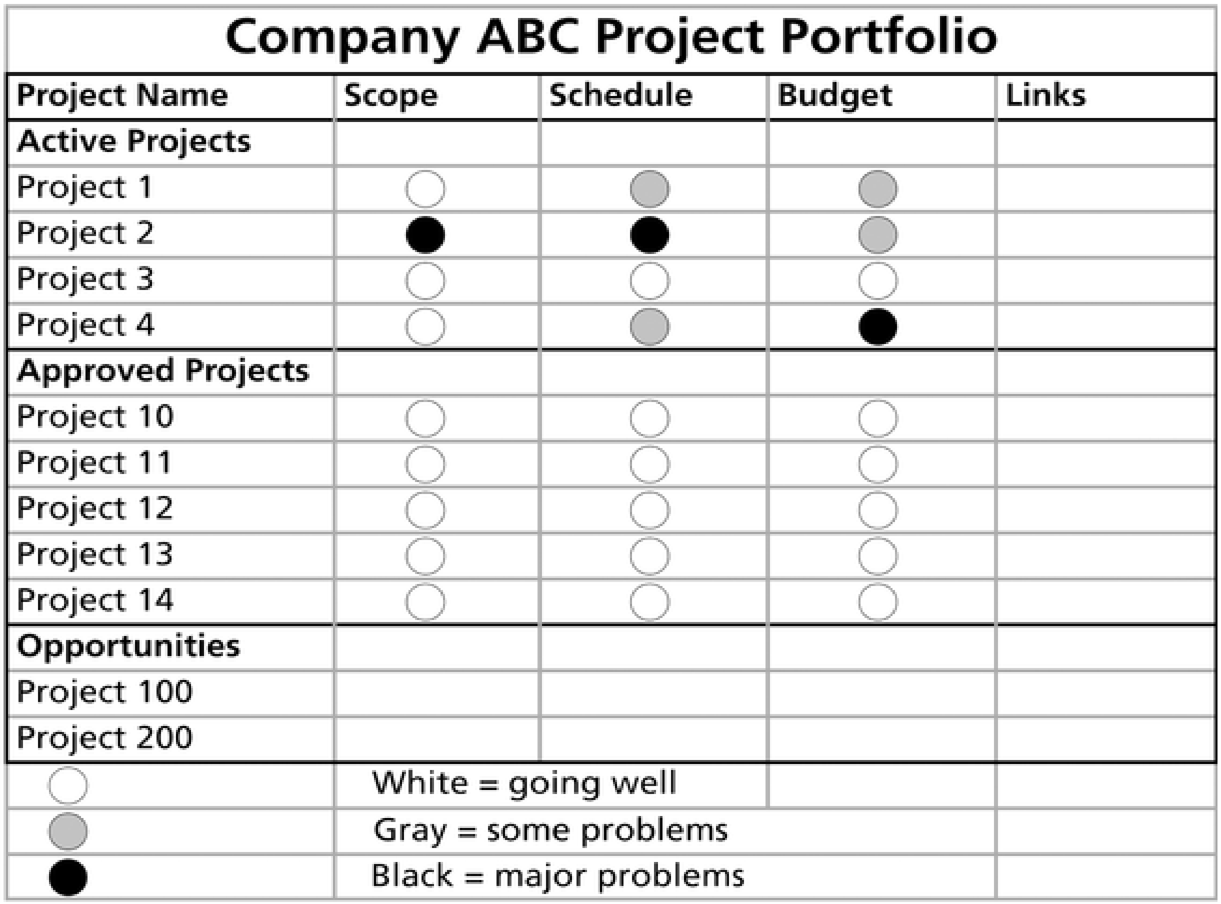
Top Information Technology Skills



Project Management Software

- Enterprise PM Software integrates information from multiple projects to show the status of active, approved, and future projects across an entire organization.
- It also provides links to more detailed information on each project.
- Many managers like to see status in color – red, yellow, and green.

Sample Enterprise Project Management Tool



Company ABC Project Portfolio				
Project Name	**Scope**	**Schedule**	**Budget**	**Links**
Active Projects				
Project 1	○	◐	◐	
Project 2	●	●	◐	
Project 3	○	○	○	
Project 4	○	◐	●	
Approved Projects				
Project 10	○	○	○	
Project 11	○	○	○	
Project 12	○	○	○	
Project 13	○	○	○	
Project 14	○	○	○	
Opportunities				
Project 100				
Project 200				
○	White = going well			
◐	Gray = some problems			
●	Black = major problems			

Ethics in Project Management

- Ethics is an important part of all professions.
- Project managers often face ethical problems.
- In order to earn PMP certification, applicants must agree to the PMP code of professional conduct.

Several questions on the PMP exam are related to professional responsibility, including ethics.

Chapter summary

- As the number and complexity of projects continue to grow, it is becoming even more important to practice good project management.
- A project has several attributes, such as being unique, temporary and developed incrementally.
- A framework for project management includes project stakeholders, the nine knowledge areas, tools and techniques, and creating project portfolios to ensure enterprise success.
- Successful project managers must possess and development many skills and lead their teams by example.
- The project management profession continues to mature as more people become certified and more tools are created.

CHAPTER 2: Information Technology Context in Project Management

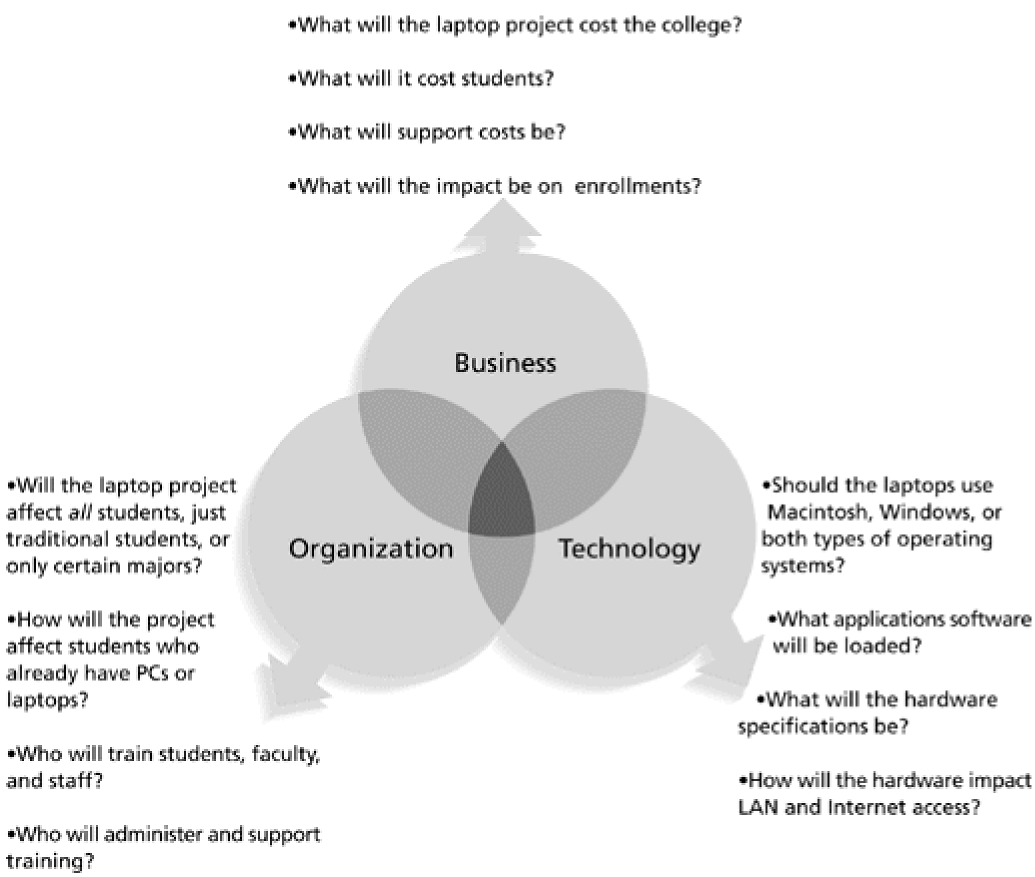
Projects must operate in a broad organizational environment Project managers need to use systems thinking: Taking a holistic view of carrying out projects within the context of the organization, Senior managers must make sure projects continue to support current business needs

Systems View of project management

A **systems approach** emerged in the 1950s to describe a more analytical approach to management and problem solving Three parts include:

- **Systems philosophy**: an overall model for thinking about things as systems
- **Systems analysis**: problem-solving approach
- **Systems management**: address business, technological, and organizational issues before making changes to systems
-

2.1 Three sphere Model for systems management



2.2 Understanding Organizations

Structural frame: Focuses on roles and responsibilities, coordination and control. Organization charts help define this frame.

Human resources frame: Focuses on providing harmony between needs of the organization and needs of people.

Political frame: Assumes organizations are coalitions composed of varied individuals and interest groups. Conflict and power are key issues.

Symbolic frame: Focuses on symbols and meanings related to events. Culture is important

Organizational Structures

Three basic organization structures:

1. Functional: functional managers report to the CEO
2. Project: program managers report to the CEO
3. Matrix: middle ground between functional and project structures; personnel often report to two or more bosses; structure can be weak, balanced, or strong matrix

Stakeholder Management

Project managers must take time to identify, understand, and manage relationships with all project stakeholders . Using the four frames of organizations can help meet stakeholder needs and expectations , Senior executives/top management are very important stakeholders

2.3 The importance of top management Commitment

People in top management positions are key stakeholders in projects. A very important factor in helping project managers successfully lead projects is the level of commitment and support they receive from top management , without top management commitment, many projects will fail Some projects have a senior manager called a champion who acts as a key proponent for a project

How Top management can help project managers

- Providing adequate resources
- Approving unique project needs in a timely manner
- Getting cooperation from other parts of the organization
- Mentoring and coaching on leadership issues

Best Practice

- IT governance addresses the authority and control for key IT activities in organizations, including IT infrastructure, IT use, and project management
- A lack of IT governance can be dangerous, as evidenced by three well-publicized IT project failures in Australia (Sydney Water's customer relationship management system, the Royal Melbourne Institute of Technology's academic management system, and One.Tel's billing system)

Need for organizational commitment to Information Technology

- If the organization has a negative attitude toward IT, it will be difficult for an IT project to succeed
- Having a Chief Information Officer (CIO) at a high level in the organization helps IT projects
- Assigning non-IT people to IT projects also encourages more commitment

Need for an organizational Standards

- Standards and guidelines help project managers be more effective
- Senior management can encourage:
  - The use of standard forms and software for project management
  - The development and use of guidelines for writing project plans or providing status information
  - The creation of a project management office or center of excellence

2.4 Project phases and the project life cycle

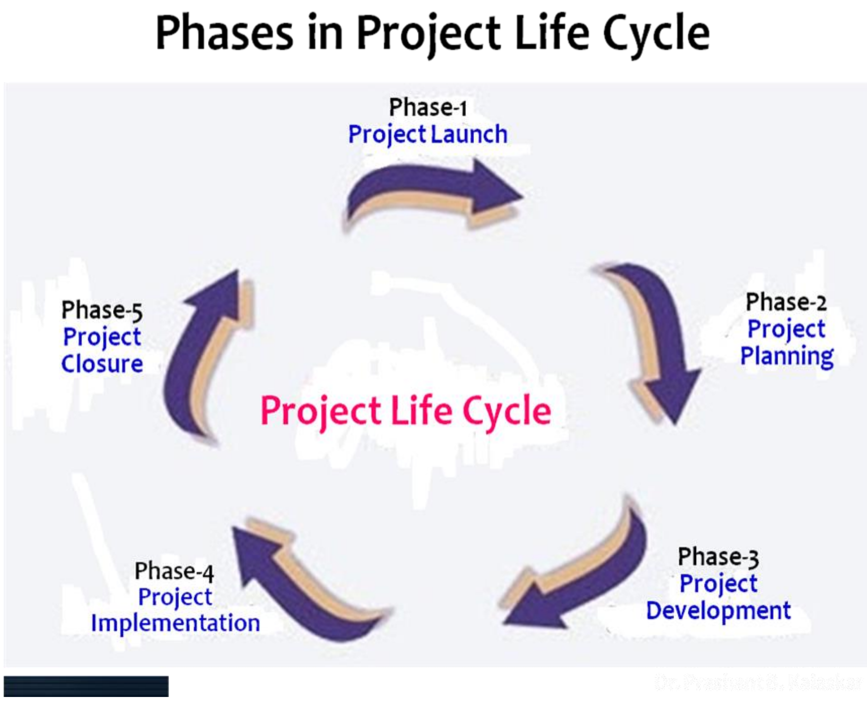
- Project Life Cycle phases defines what work will be performed in each phases of PLC.
- It allows to understand what deliverables (outcome) will be produced &
- How Management will control & approve work produced in each phase of Project Life Cycle

In early phases of a project life cycle: Resource needs are usually lowest, the level of uncertainty (risk) is highest, Project stakeholders have the greatest opportunity to influence the project

In middle phases of a project life cycle: The certainty of completing a project improves, more resources are needed

The final phase of a project life cycle focuses on: Ensuring that project requirements were met the sponsor approves completion of the project

Phases in project life cycles



1) Project Initiation (Project launch)
2) Project Planning
3) Project development
4) Project Implementation (Execution)
5) Project Closure

1) Project Launch:

- This is the first phase of Project Life Cycle (PLC) (based on the PMBOK® methodology)
- This phase includes

❑ Defining the reason/purpose of initiation of Project
❑ Business Goals to be achieved
❑ Scope of the Project
❑ Proposed Solutions to any problem may arise
❑ End Point (Project Completion Date)
❑ Budget

In order to get a GO No GO decision.

2) Project Planning:

- This is the second phase of Project Life Cycle, after defining a Project
- This involves creating the "PMP", Project Management Plan, in order to guide the team during the project development and after.

- In this phase, Project Manager defines the Required Skills of development team.
- In this phase, Project Manager defines Non-labor Resources, Risks plan, detailed action items and milestones.

3) **Development Phase:**

- This is the third phase in the Project Life Cycle
- This phase is nothing but actually performing (working on) the defined project.
- Different types of resources are procured & utilized
- Results in the accomplishment of the project objective

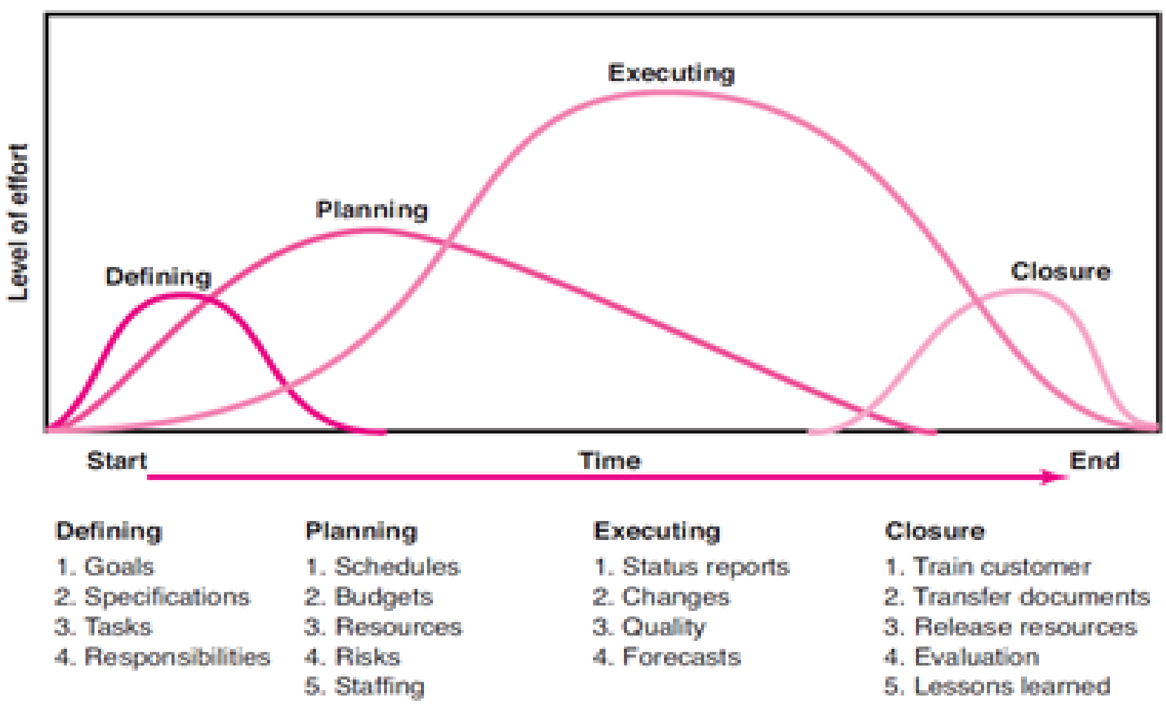
4) **Project Implementation:**

- This is the ***execution phase*** of the Project Life Cycle
- This is the stage in which the requirements are actually built and programmed.
- After the QA process the product will be presented to the customer for acceptance and full implementation.
- If the customer has accepted the final product, the project is complete and ready for closure.

5) **Project Closure**

- This is the last stage of Project Life Cycle
- Project Closure involves releasing the final product to the customer.
- Handing over project documentation, Manuals, and Network layouts.
- Last remaining step is to undertake a Post Implementation Review to identify the level of project success and note down any lessons learned.

Summary of PLC



2.5 THE CONTEXT OF INFORMATION TECHNOLOGY PROJECTS

- IT projects can be very diverse in terms of size, complexity, products produced, application area, and resource requirements
- IT project team members often have diverse backgrounds and skill sets
- IT projects use diverse technologies that change rapidly; even within one technology area, people must be highly specialized

Recent trends affecting IT project Management

- **Globalization**: lower trade and political barriers and the digital revolution have made it possible to interact almost instantaneously with billions of other people across the planet
- **Outsourcing**: outsourcing is when an organization acquires goods and/or sources from an outside source; off shoring is sometimes used to describe outsourcing from another country
- **Virtual teams**: a virtual team is a group of individuals who work across time and space using communication technologies

Important issues and suggestions related to globalization

Issues

- Communications
- Trust
- Common work practices
- Tools

Suggestions

- Employ greater project discipline
- Think global but act local
- Keep project momentum going
- Use newer tools and technology

Outsourcing

- ✓ Organizations remain competitive by using outsourcing to their advantage, such as finding ways to reduce costs
- ✓ Their next challenge is to make strategic IT investments with outsourcing by improving their enterprise architecture to ensure that IT infrastructure and business processes are integrated and standardized (see Suggested Readings)
- ✓ Project managers should become more familiar with negotiating contracts and other outsourcing issues

Virtual team advantages

- Increasing competiveness and responsiveness by having a team of workers available 24/7
- Lowering costs because many virtual workers do not require office space or support beyond their home offices
- Providing more expertise and flexibility by having team members from across the globe working any time of day or night
- Increasing the work/life balance for team members by eliminating fixed office hours and the need to travel to work

Virtual Team disadvantages

- Isolating team members
- Increasing the potential for communications problems
- Reducing the ability for team members to network and transfer information informally
- Increasing the dependence on technology to accomplish work
- See text for a list of factors that help virtual teams succeed, including team processes, trust/relationships, leadership style, and team member selection

Chapter summary

- Project managers need to take a systems approach when working on projects
- Organizations have four different frames: structural, human resources, political, and symbolic
- Projects should successfully pass through each phase of the project life cycle
- Project managers need to consider several factors due to the unique context of information technology projects
- Recent trends affecting IT project management include globalization, outsourcing, and virtual teams

CHAPTER 3: PROJECT TIME AND COMMUNICATIONS MANAGEMENT

3.1 Introduction

Time is a terrible resource to waste. This is the most valuable resource in a project.Every delivery that you are supposed to make is time-bound. Therefore, without proper time management, a project can head towards a disaster.

When it comes to project time management, it is not just the time of the project manager, but it is the time management of the project team. Scheduling is the easiest way of managing project time. In this approach, the activities of the project are estimated and the durations are determined based on the resource utilization for each activity. In addition to the estimate and resource allocation, cost always plays a vital role in time management. This is due to the fact that schedule over-runs are quite expensive.

3.2 The Steps of the Time Management Process

Following are the main steps in the project time management process. Each addresses a distinct area of time management in a project.

1. Defining Activities

When it comes to a project, there are a few levels for identifying activities. First of all, the high-level requirements are broken down into high-level tasks or deliverables.

Then, based on the task granularity, the high-level tasks/deliverables are broken down into activities and presented in the form of WBS (Work Breakdown Structure).

2. Sequencing Activities

In order to manage the project time, it is critical to identify the activity sequence. The activities identified in the previous step should be sequenced based on the execution order.

When sequencing, the activity interdependencies should be considered.

3. Resource Estimating for Activities

The estimation of amount and the types of resources required for activities is done in this step. Depending on the number of resources allocated for an activity, its duration varies.

Therefore, the project management team should have a clear understanding about the resources allocation in order to accurately manage the project time.

4. Duration and Effort Estimation

This is one of the key steps in the project planning process. Since estimates are all about the time (duration), this step should be completed with a higher accuracy.

For this step, there are many estimation mechanisms in place, so your project should select an appropriate one.

Most of the companies follow either WBS based estimating or Function Points based estimates in this step.

Once the activity estimates are completed, critical path of the project should be identified in order to determine the total project duration. This is one of the key inputs for the project time management.

5. Development of the Schedule

In order to create an accurate schedule, a few parameters from the previous steps are required.

Activity sequence, duration of each activity and the resource requirements/allocation for each activity are the most important factors.

In case if you perform this step manually, you may end up wasting a lot of valuable project planning time. There are many software packages, such as Microsoft Project, that will assist you to develop reliable and accurate project schedule.

As part of the schedule, you will develop a Gantt chart in order to visually monitor the activities and the milestones.

6. Schedule Control

No project in the practical world can be executed without changes to the original schedule. Therefore, it is essential for you to update your project schedule with ongoing changes.

3.3 Network diagrams and schedule analysis

Network diagrams are schematic displays of project schedule activities and the interdependencies between these activities. When developed properly, this graphical view of a project's activities conveys critical schedule characteristics required to effectively analyze and adjust schedules – thus resulting in accurate and feasible schedules. This document addresses what should be considered in the development of a network diagram, how network diagrams are created, and how they may be analyzed to identify necessary corrective actions and ensure optimal schedule definition.

3.3.1 Network Diagram Creation

Network diagrams can be created manually but are also available as project views in project scheduling tools such as Microsoft Project. (See Microsoft Project, View→ More Views → Network Diagram).

Inputs:

- Project Scope Statement – The schedule definition required in network diagram development must be based on the approved scope documented in the Project Scope Statement. If network diagram and schedule definition does not account for all required deliverables in scope, the resulting network diagram and schedule will not accurately reflect the time necessary to complete the work.
- Work Breakdown Structure (WBS) – The Project Team must include WBS project work in the network diagram to ensure comprehensive reflection of project activities.
- Historical Project Information – The accuracy of network diagram/schedule estimation is strengthened by actual schedule metrics from past projects. Project teams should consider past level of effort and duration for comparable project activities.
- WBS Dictionary – The WBS Dictionary defines task durations, dependencies, predecessor and successor relationships, and resources – all of which need to be defined prior to network diagram creation to ensure that the network diagram accurately reflects the schedule required to successfully complete the project.
- Resource Calendars – The Project Team should develop and utilize a resource calendar that includes holidays and personnel availability. Creation of this calendar prior to network diagram creation will ensure that the schedule accounts for actual working time.

Procedure:

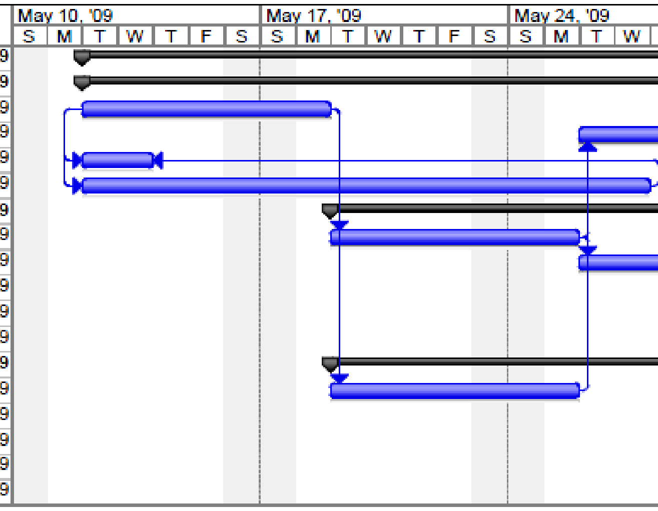
- Consider all inputs and enter all activity definition, sequencing, and duration information into a software tool such as Microsoft Project. If using this tool, ensure all tasks are linked.
- Confirm all tasks are linked with accurate dependencies and with resource names identified for each task.

Output:

- Microsoft Project Plan with task dependencies, predecessors and successors defined, and resources applied to tasks

Below is a sample network diagram. To illustrate the relationship between a Gantt chart and a Network Diagram, we have provided the Gantt of activities and the Network Diagram view.

ID	WBS	Task Name	Duration	Start	Finish
1	**1**	**Banquet**	**23 days**	**Tue 5/12/09**	**Thu 6/11/09**
2	**1.1**	**Plan and Supervise**	**15 days**	**Tue 5/12/09**	**Mon 6/1/09**
3	1.1.1	Create Plan	5 days	Tue 5/12/09	Mon 5/18/09
4	1.1.2	Make Budget	5 days	Tue 5/26/09	Mon 6/1/09
5	1.1.3	Prepare Disbursement	2 days	Tue 5/12/09	Wed 5/13/09
6	1.1.4	Coordinate Activities	12 days	Tue 5/12/09	Wed 5/27/09
7	**1.2**	**Dinner**	**17 days**	**Tue 5/19/09**	**Wed 6/10/09**
8	1.2.1	Make Menu	5 days	Tue 5/19/09	Mon 5/25/09
9	1.2.2	Create Shopping List	5 days	Tue 5/26/09	Mon 6/1/09
10	1.2.3	Shop	5 days	Tue 6/2/09	Mon 6/8/09
11	1.2.4	Cook	1 day	Tue 6/9/09	Tue 6/9/09
12	1.2.5	Serve Dinner	1 day	Wed 6/10/09	Wed 6/10/09
13	**1.3**	**Room and Equipment**	**18 days**	**Tue 5/19/09**	**Thu 6/11/09**
14	1.3.1	Identify Site	5 days	Tue 5/19/09	Mon 5/25/09
15	1.3.2	Set Up Tables/Chairs	1 day	Wed 6/10/09	Wed 6/10/09
16	1.3.3	Lay Out Utensils	1 day	Wed 6/10/09	Wed 6/10/09
17	1.3.4	Decorate	1 day	Thu 6/11/09	Thu 6/11/09
18	1.3.5	Prepare Equipment	2 days	Mon 6/8/09	Tue 6/9/09



3.3.2 Schedule Network Analysis

Schedule network analysis, as defined by the *Project Management Body of Knowledge* (*PMBOK*), is a technique used by project managers to analyze schedule information and generate realistic and optimal project schedules. This analysis should be performed upon completion of the draft schedule and network diagram and after each schedule update. Schedule network analysis involves:

- Identifying the schedule impact of task dependencies
- Identifying critical path tasks and understanding the impact of the critical path on the schedule. Software tools such as Microsoft Project automatically display critical path tasks once project information such as tasks, dependencies, and durations are identified in the tools.
- Analyzing the effects of schedule constraints and externally imposed dates
- Understanding which tasks can experience delays without delaying the overall schedule
- Conducting "what if" analysis of various activity durations (for example, what if the testing activities take twice as long as is currently planned?)
- Assessing resource allocation and leveling to prevent resource over-allocation
- Assessing fast tracking or crashing options to ensure optimal schedule performance

3.4 ANALYTICAL TECHNIQUES:

PMBOK describes the following techniques to perform schedule network analysis. For more detail regarding analytical techniques, which provide valuable information necessary for effective schedule definition, see *PMBOK*, fourth edition, Section 6.5.2. Most scheduling tools include features that allow utilization of these techniques with minimal effort.

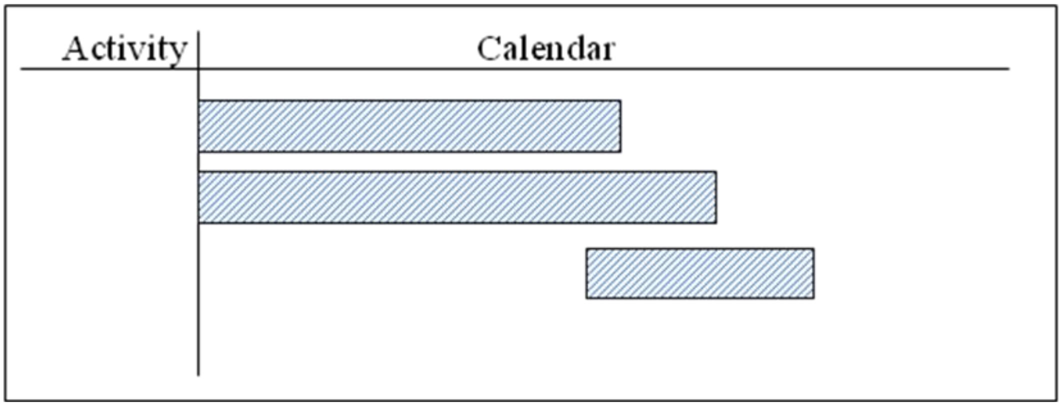
3.4.1 Critical Path Method – The critical path method calculates the longest path of planned activities to the end of the project – the "critical path" – and the earliest and latest date that each activity can start and finish without extending the project. Any activity delay on the critical path impacts the planned project completion date. A network diagram visually conveys the critical path. This visibility into the critical path allows project managers to prioritize activities and take appropriate corrective actions to meet schedule deadlines. An understanding of the critical path also allows project managers visibility as to which schedule activities are flexible – that is, those activities that are not on the critical path. By looking at a network diagram, project managers can determine when they have float or slack, which is the amount of time that any given schedule activity can be delayed without causing a delay to the start date of subsequent activities (free float) or to the project completion date (total float). Knowing when a project has float allows a Project Manager to understand what tasks may slip and by how much before they have an impact on the project schedule.

USED IN: Production management **-** for the jobs of repetitive in nature where the activity time estimates can be predicted with considerable certainty due to the existence of past experience.

3.4.2 Work break down structure

- Project sub-divided into hierarchical units of tasks, work packages, and work units.
- Each part of unit tasks, work packages and work units must have separate budget, in terms of money, labor hours, and other requisite resources.
- Project is breakdown into a group of activities.
- Each activity is breakdown into a task list.
- This task list is put into a calendar.
- Then, assign people, time, money and other resources.

Schedule Task list into calendar

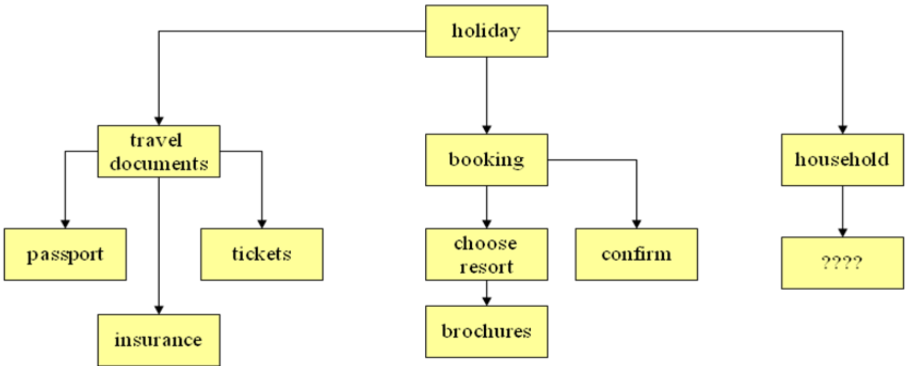


- Assigning people, time, and money to each activity.
- Make themselves competent.

Managing “intelligent” people

- Breakdown task into activities
- List activities which form a single operation or function which you know is achievable

Example of WBS: “Holiday”



List of activities

- Booking:
    - get brochures
    - choose resort
    - make booking
    - confirm booking
- Travel documents:
    - check passport
    - book tickets
    - get insurance

- Household:
    - ????

3.4.3 Project Evaluation & Review Techniques (PERT)

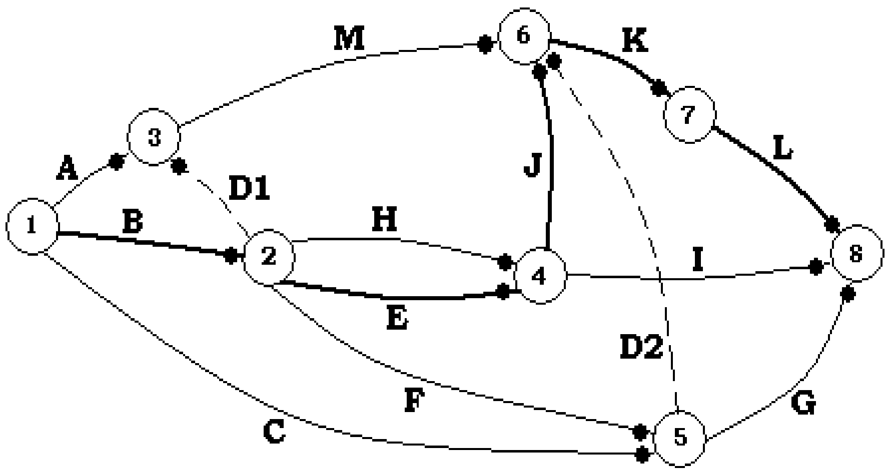
PERT was developed by the US Navy for the planning and control of the Polaris missile program and the emphasis was on completing the program in the shortest possible time. In addition PERT had the ability to cope with uncertain activity completion times (e.g. for a particular activity the most likely completion time is 4 weeks but it could be anywhere between 3 weeks and 8 weeks).

Definition: In **PERT** activities are shown as a network of priority relationships using activity-on-arrow network construction

USED IN: Project management - for non-repetitive jobs (research and development work), where the time and cost estimates tend to be quite uncertain.

CPM/PERT

These deficiencies can be eliminated to a large extent by showing the interdependence of various activities by means of connecting arrows called network technique.



Benefits of CPM/PERT

- Useful at many stages of project management
- Mathematically simple
- Give critical path
- Provide project documentation
- Useful in monitoring costs

3.5 PROJECT COMMUNICATION MANAGEMENT

3.5.1 Introduction

Understand the importance of good communication on projects and describe the major components of a communications management plan , Discuss the elements of project communications planning, including information distribution, performance reporting, and administrative closure Discuss various methods for project information distribution and the advantages and disadvantages of each Understand individual communication needs and how to determine the number of communications channels needed for a project

- Understand how the main outputs of performance reporting help stakeholders stay informed about project resources
- Recognize how the main outputs of administrative closure are used to formally end a project
- List various methods for improving project communications, such as managing conflicts, running effective meetings, using e-mail effectively, and using templates
- Describe how software can enhance project communications

3.5.2 Importance of Good Communications

The greatest threat to many projects is a failure to communicate

Our culture does not portray IT professionals as being good communicators

Research shows that IT professionals must be able to communicate effectively to succeed in their positions

Strong verbal skills are a key factor in career advancement for IT professionals

3.5.3 Project Communications Management Processes

- *Communications planning*: determining the information and communications needs of the stakeholders
- *Information distribution*: making needed information available in a timely manner
- *Performance reporting*: collecting and disseminating performance information
- *Administrative closure*: generating, gathering, and disseminating information to formalize phase or project completion

Communications Planning

- Every project should include some type of communications management plan, a document that guides project communications
- Creating a stakeholder analysis for project communications also aids in communications planning

Communications Management Plan Contents

- A description of a collection and filing structure for gathering and storing various types of information
- A distribution structure describing what information goes to whom, when, and how
- A format for communicating key project information
- A project schedule for producing the information
- Access methods for obtaining the information

- A method for updating the communications management plans as the project progresses and develops

. A stakeholder communications analysis

Sample Stakeholder Analysis for Project Communications

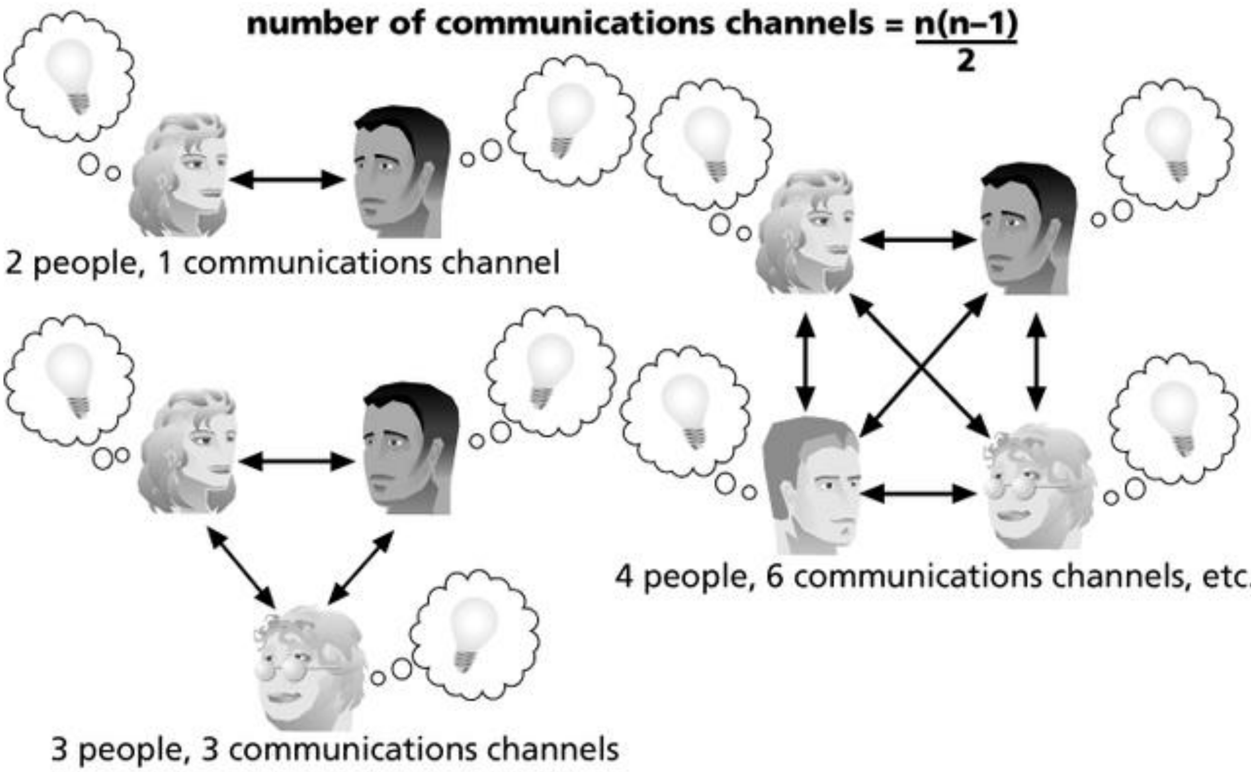
Table 10-1: Sample Stakeholder Communications Analysis

Stakeholders	Document Name	Document Format	Contact Person	Due
Customer Management	Monthly status report	Hard copy	Tina Erndt, Tony Silva	First of month
Customer Business Staff	Monthly status report	Hard copy	Julie Grant, Jeff Martin	First of month
Customer Technical Staff	Monthly status report	E-mail	Evan Dodge, Nancy Michaels	First of month
Internal Management	Monthly status report	Hard copy	Bob Thomson	First of month
Internal Business and Technical Staff	Monthly status report	Intranet	Angie Liu	First of month
Training Subcontractor	Training plan	Hard copy	Jonathan Kraus	11/1/2004
Software Subcontractor	Software implementation plan	E-mail	Barbara Gates	6/1/2004

Information Distribution

- Getting the *right information* to the *right people* at the *right time* and in a *useful format* is just as important as developing the information in the first place
- Important considerations include
  - using technology to enhance information distribution
  - formal and informal methods for distributing information

3.5.4 The Impact of the Number of People on Communications Channels



3.5.5 Performance Reporting

- Performance reporting keeps stakeholders informed about how resources are being used to achieve project objectives
  - Status reports describe where the project stands at a specific point in time
  - Progress reports describe what the project team has accomplished during a certain period of time
  - Project forecasting predicts future project status and progress based on past information and trends
  - Status review meetings often include performance reporting

Developing Better Communication Skills

- Companies and formal degree programs for IT professionals often neglect the importance of developing speaking, writing, and listening skills
- As organizations become more global, they realize they must invest in ways to improve communication with people from different countries and cultures
- It takes leadership to improve communication

Running Effective Meetings

- Determine if a meeting can be avoided
- Define the purpose and intended outcome of the meeting
- Determine who should attend the meeting
- Provide an agenda to participants before the meeting

- Prepare handouts, visual aids, and make logistical arrangements ahead of time
- Run the meeting professionally
- Build relationships

Using E-Mail Effectively

- Make sure that e-mail is an appropriate medium for what you want to communicate
- Be sure to send the e-mail to the right people
- Use meaningful subjects
- Limit the content to one main subject, and be as clear and concise as possible
- Limit the number and size of attachments
- Delete e-mail you don't need, and don't open it if you question the source
- Make sure your virus software is up to date
- Respond to and file e-mails quickly
- Learn how to use important features

Using Templates for Project Communications

- Many technical people are afraid to ask for help
- Providing examples and templates for project communications saves time and money
- Organizations can develop their own templates, use some provided by outside organizations, or use samples from textbooks
- Recall that research shows that companies that excel in project management make effective use of templates

Using Software to Assist in Project Communications

- There are many software tools to aid in project communications
- Today more than 37 percent of people telecommute or work remotely at least part-time
- Project management software includes new capabilities to enhance virtual communications
- Project 2002's enterprise edition includes features for portfolio management, resource management, and collaboration