

**LECTURE NOTE**  
**ENTREPRENUERSHIP AND MANAGEMENT & SMART**  
**TECHNOLOGY**

**TH1.**



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# **1. ENTREPRENEURSHIP**

## **Concept of Entrepreneurship**

Entrepreneurship is the ability and readiness to develop, organize and run a business enterprise, along with any of its uncertainties in order to make a profit. The most prominent example of entrepreneurship is the starting of new businesses.



## **WHAT IS ENTREPRENEURSHIP?**

In economics, entrepreneurship connected with land, labour, natural resources and capital can generate a profit. The entrepreneurial vision is defined by discovery and risk-taking and is an indispensable part of a nation's capacity to succeed in an ever-changing and more competitive global marketplace.

### **Meaning of Entrepreneur**

The entrepreneur is defined as someone who has the ability and desire to establish, administer and succeed in a startup venture along with risk entitled to it, to make profits. The best example of entrepreneurship is the starting of a new business venture. The entrepreneurs are often known as a source of new ideas or innovators, and bring new ideas in the market by replacing old with a new invention.

It can be classified into small or home business to multinational companies. In economics, the profits that an entrepreneur makes is with a combination of land, natural resources, labour and capital.

In a nutshell, anyone who has the will and determination to start a new company and deals with all the risks that go with it can become an Entrepreneur.

## What are the 4 Types of Entrepreneurship?

It is classified into the following types:

### Small Business Entrepreneurship-

These businesses are a hairdresser, grocery store, travel agent, consultant, carpenter, plumber, electrician, etc. These people run or own their own business and hire family members or local employee. For them, the profit would be able to feed their family and not making 100 million business or taking over an industry. They fund their business by taking small business loans or loans from friends and family.

### Scalable Startup Entrepreneurship-

This start-up entrepreneur starts a business knowing that their vision can change the world. They attract investors who think and encourage people who think out of the box. The research focuses on a scalable business and experimental models so, they hire the best and the brightest employees. They require more venture capital to fuel and back their project or business.

### Large Company Entrepreneurship-

These huge companies have defined lifecycle. Most of these companies grow and sustain by offering new and innovative products that revolve around their main products. The change in technology, customer preferences, new competition, etc., build pressure for large companies to create an innovative product and sell it to the new set of customers in the new market. To cope with the rapid technological changes, the existing organisations either buy innovation enterprises or attempt to construct the product internally.

### Social Entrepreneurship-

This type of entrepreneurship focuses on producing product and services that resolve social needs and problems. Their only motto and goal is to work for society and not make any profits.

## Characteristics of Entrepreneurship:

Not all entrepreneurs are successful, there are definite characteristics that make entrepreneurship successful. A few of them are mentioned below:

- **Ability to take a risk-** Starting any new venture involves a considerable amount of failure risk. Therefore, an entrepreneur needs to be courageous and able to evaluate and take risks, which is an essential part of being an entrepreneur.
- **Innovation-** It should be highly innovative to generate new ideas, start a company and earn profits out of it. Change can be the launching of a new product that is new to the market or a process that does the same thing but in a more efficient and economical way.
- **Visionary and Leadership quality-** To be successful, the entrepreneur should have a clear vision of his new venture. However, to turn the idea into reality a lot of resources and employees are required. Here, leadership quality is paramount because leaders impart and guide their employees towards the right path of success.
- **Open-Minded-** In a business, every circumstance can be an opportunity and used for the benefit of a company. For example, Paytm recognised the gravity of demonetization and acknowledged the need for online transactions would be more, so it utilised the situation and expanded massively during this time.

- **Flexible-** An entrepreneur should be flexible and open to change according to the situation. To be on the top, a businessperson should be equipped to embrace change in a product and service, as and when needed.
- **Know your Product-** A company owner should know the product offerings and also be aware of the latest trend in the market. It is essential to know if the available product or service meets the demands of the current market, or whether it is time to tweak it a little. Being able to be accountable and then alter as needed is a vital part of entrepreneurship.

### Importance of Entrepreneurship:

- **Creation of Employment-** Entrepreneurship generates employment. It provides an entry-level job, required for gaining experience and training for unskilled workers.
- **Innovation-** It is the hub of innovation that provides new product ventures, market, technology and quality of goods, etc., and increase the standard of living of people.
- **Impact on Society and Community Development-** A society becomes greater if the employment base is large and diversified. It brings about changes in society and promotes facilities like higher expenditure on education, better sanitation, fewer slums, a higher level of homeownership. Therefore, entrepreneurship assists the organisation towards a more stable and high quality of community life.
- **Increase Standard of Living-** Entrepreneurship helps to improve the standard of living of a person by increasing the income. The standard of living means, increase in the consumption of various goods and services by a household for a particular period.
- **Supports research and development-** New products and services need to be researched and tested before launching in the market. Therefore, an entrepreneur also dispenses finance for research and development with research institutions and universities. This promotes research, general construction, and development in the economy.

### Functions of an Entrepreneur

#### Functions of an Entrepreneur – Risk Bearing, Administrative, Decision-Making and Distributive Functions

An entrepreneur frequently has to wear many hats. He has to perceive opportunity, plan, organize resources, and oversee production, marketing, and liaison with officials. Most importantly he has to innovate and bear risk.

**The main functions of an entrepreneur are grouped in three categories:**

1. Risk bearing functions,

2. Administrative and decision-making functions, and
3. Distributive functions (responsibility of the organizer).

### **1. Risk Bearing Functions:**

It is the most important and specific function of an entrepreneur. Every business involves some amount of risk. The production of goods and services is always related to future demands. The future demand is uncertain and unpredictable, because it is influenced by the changes in fashion or taste and liking of the consumers.

The price structure, value of money, climatic conditions and government policies are some other important factors that affect the demand of a commodity. All these factors are variable and as such an exact estimation of future demand is a difficult exercise to work o:

Since this unpredictable task is undertaken by the entrepreneur, he has to bear the risk. If his estimations prove to be wrong, then in the entire business sphere, no other factor of production shares the loss incurred by the entrepreneur.

It is the main reason why the entrepreneur becomes entitled for the surplus that is remaining with him from the sale proceeds of the product, after distributing the shares to other factors. This surplus is termed as profit of the business.

### **2. Administrative and Decision-Making Functions:**

#### **i. Conceiving the Idea of Business:**

The entrepreneur conceives the idea of a particular business which suits his nature, skill and resources. He makes a thorough (intensive and extensive) study of the condition of market and business prospects. After making a thorough study of economic viability, he decides the business that he has to star

#### **ii. Estimation of Details of Business and Implementation of the Same:**

After arriving at a conclusion about the nature of business, the entrepreneur works out the details of business, i.e., what, how and when to produce and from where the resources are to be arranged. With all these estimations, he makes an all-out effort to give a practical shape to his plans, organizes various factors of production and sets them to function in proper harmony.

#### **iii. Supervision and Control of Business Activities:**

The entrepreneur has to supervise and control the day-to-day business activities to accomplish the business objectives. For this he properly coordinates between various factors of production. As the risk (success or failure) of business operations directly affect his economy, he keeps a vision and control on the business affairs and avoids unnecessary expenditures.

He is required to take a numerous decisions and has to get these decisions properly implemented.

#### **iv. Innovation:**

Innovation is one of the most important functions of an entrepreneur. An entrepreneur uses information, knowledge and intuition to come up with new products, new methods of reducing costs of a product, improvement in design or function of a product, discovering new markets or new ways of organization of industry. Through innovation, an entrepreneur converts a material into a resource or combines existing resources into new and more productive configurations.

It is the creativity of an entrepreneur that results in invention (creation of new knowledge) and innovation (application of knowledge to create the new products, services or processes).

### **3. Distributive Functions:**

The entrepreneur organizes different factors of production and sets them to work. It, therefore, becomes his responsibility to make proper allocation of funds for each factor of production, i.e., each factor of production must be properly remunerated.

The remuneration here refers to an important decision as to what should be the share of each factor of production in the sale proceeds of the entire product. The remuneration should be just and equitable and the payment to each factor should be commensurate, so that each factor is fully satisfied.

If the factors of production remain dissatisfied, they will not be able to deliver their best to the entrepreneur. So, it is the entrepreneur, who has to ultimately suffer. Hence, it is very essential for the entrepreneur to perform distributive functions with extreme care and caution.

### **barriers to entrepreneurship**

Economic innovation and job formation is stalled throughout the world. Entrepreneurs can change all that, say four professors. To do so, entrepreneurs must overcome eleven barriers facing them.

#### **First: Corrupt and unsupportive business environment**

Lack of supportive and market-augmenting governmental regulations serve as a barrier to entrepreneurship. Russia leads all other large nations in having an unsupportive business environment because they lack rule of law, have poorly defined contract and property laws, enforce regulations inconsistently, allow rampant corruption and bribing, allow regulatory authorities and inspectors to act in a predatory nature which therefore requires friendly ties with government officials and bureaucrats to smooth the way for businesses to operate. China has similar issues. See the accompanying list where pictured is Russian dissident-businessman, Boris Berezhevsky, now exiled in London, England. Berezhevsky was one of the Russian oligarchs who acquired massive wealth by taking control of state assets after the fall of communism. He also has links to the poisoned Russian spy Alexander Litvinenko.

#### **Tied for second: Employee related difficulties**

Building an employee asset base for the enterprise is one of the more daunting and sometimes overlooked tasks. Entrepreneurs must find and select the best-qualified employees who are motivated and willing to grow with the venture. Then they must ensure the employees do not leave. The professors say this task becomes a barrier when employees' expectations increases, governmental regulations related to labor employment is hardened, and employee costs grow. Employee cost is more than pay. It includes healthcare, workers' compensation, social security tax, and health and safety regulations.

Just ask Charles "Chip" Starnes, who was recently held hostage by his own employees in a plant in China. It has been widely reported that Starnes was held hostage by current employees who did not receive severance pay that 30 workers received because they were

being laid off. Starnes was moving a plastic-injection-molding division to Mumbai, India, where production costs are lower. After being barricaded in the plant for almost a week, Starnes reached an agreement after nearly a week to pay two months' wages, totaling almost \$300,000, to the remaining 97 employees.

**Tied for second: Severe market entry regulations**

Governmental rules, taxation, environmental regulations, lending requirements and licensing are all barriers to entrepreneurship. Most countries, the United States included, proscribe or license market entry and the creation of new firms to protect incumbents in certain industries and professions. Entry procedures, or "red tape," vary such that entrepreneurs need one day to register an enterprise in one country and up to 20 weeks in another. Other barriers to entrepreneurship are predatory tax behavior of authorities, lack of property rights and tax disadvantages.

**Tied for second: Shortage of funds and resources**

Finding the money to start up an enterprise is a leading barrier to entrepreneurship. Without funds, any person cannot begin to organize, train, develop and sell product.

**Fifth: Lack of Entrepreneurship Opportunities**

Venture creation requires existing marketplace opportunities with possibilities known to the entrepreneur and favorable odds for success for entrepreneurial "spirit" to succeed.

**Sixth: Lack of Entrepreneurial Capacity**

Opportunities go untried until someone comes along with an eye for possibility and a can-do attitude. Some cultures may discourage entrepreneurial capacity resulting in a low rate of new firm entrance. It is like having an oil well field without knowledgeable people to mine the wells. Entrepreneurial capacity is the existence of people with entrepreneurship qualities, willingness and motivation to initiate new ventures.

**Seventh: Lack of Adequate Entrepreneurship Training**

Training and education can be a robust incubator for new ventures. This includes training in technical skills, managerial skills, entrepreneurial skills and entrepreneurship.

**Tied for eighth: Lack of Appropriate Technical and Practical Skills**

People tend to use the skills they have acquired to pursue entrepreneurial initiative. Lacking the appropriate skills and knowledge inhibits economic development.

**Tied for eighth: Lack of Market Experience**

The essence of leadership is first learning and doing before leading. Therefore, the capability to start a business is propelled by previous education and work experience. Rushing into a new market because it looks attractive and rewarding without having some experience and background in it can be fatal. Experience in a related business before start-up is positively correlated to the probability of success.

**Tenth: Fear of Failure**

Entrepreneurs have to decide whether to take action so they don't miss the boat, while knowing that hasty action may cause them to sink the boat.

**Eleventh: Aversion to Risk**

A psychological barrier closely related to the fear of failure is aversion to risk. Entrepreneurs must take initiative, create structure with a social-economic mechanism and accept risk of failure. Entrepreneurs have to be risk takers while those who are risk averse will seek the security of an existing establishment.

## Entrepreneurs vs Managers

### Who is an Entrepreneur?

Very basically speaking, an entrepreneur is a one-man show that runs entrepreneurship. However, such a person usually has some unique attributes that allow him to be successful in his endeavors. He is essentially an initiator and a leader. He brings business ideas to fruition thus starting off his venture.



A successful entrepreneur is usually a responsible person. He is accountable for the success or the failure of his venture, and he takes this responsibility very seriously. And since he is the only person in-charge he is automatically the leader. In fact, **leadership** qualities are one of the main aspects of an entrepreneur.

### **Who is a Manager?**

A manager, on the other hand, is not an owner of an enterprise. Instead, he is the one that is responsible for the management and administration of a group of people or a department of the organization. His day to day job is to manage his employees and ensure the organization runs smoothly.

A manager must possess some of the same qualities as an entrepreneur, like leadership, **accountability**, decisiveness etc. He must also be a good manager of people. So qualities such as warmth and empathy are also very important in a manager.

Now that we have a brief idea about their qualities and roles, let us take a look at the difference between them



Entrepreneur vs Manager	
Entrepreneur	Manager
Entrepreneur is visionary and bears all financial risks.	Manager works for salary, and does not have to bear any risks.
Focuses on starting and expanding the business ideas	Focus on daily smooth functioning of business
Key motivation for Entrepreneur is achievements	Managers motivation comes from the power that comes with their position
Reward for all the efforts is profit he earns from the enterprise	Remuneration is the salary he draws from the company
Entrepreneur can be informal and casual	Manager's approach to every problem is very formal

### Difference between Entrepreneur and Manager

- The key **difference between an entrepreneur and a manager** is their standing in the company. An entrepreneur is a visionary that converts an idea into a business. He is the owner of the business, so he bears all the financial and other risks. A manager, on the other hand, is an employee, he works for a salary. So he does not have to bear any risks.
- The focus of an entrepreneur lies in starting the business and later expanding the business. A manager will focus on the daily smooth functioning of the business.
- For an entrepreneur the key motivation is achievements. But for the managers, the motivation comes from the power that comes with their position.
- The reward for all the efforts of an entrepreneur is the profit he earns from the enterprise. The manager is an employee, so his remuneration is the salary he draws from the company.
- The entrepreneur can be informal and casual in his role. However, a manager's approach to every problem is very formal.
- The entrepreneur by nature is a risk taker. He has to take calculated risks to drive the company further. A manager, on the other hand, is risk-averse. His job is to maintain the status quo of the company. So he cannot afford risks.

### Forms OF Business Ownership

Business organization is the single-most important choice you'll make regarding your company. What form your business adopts will affect a multitude of factors, many of which will decide your company's future. Aligning your goals to your business organization type is an important step, so understanding the pros and cons of each type is crucial.

#### Your company's form will affect:

- How you are taxed

- Your legal liability
- Costs of formation
- Operational costs

There are 4 main types of business organization: sole proprietorship, partnership, corporation, and Limited Liability Company, or LLC. Below, we give an explanation of each of these and how they are used in the scope of [business law](#).

### **Sole Proprietorship**

The simplest and most common form of business ownership, sole proprietorship is a business owned and run by someone for their own benefit. The business' existence is entirely dependent on the owner's decisions, so when the owner dies, so does the business.

#### **Advantages of sole proprietorship:**

- All profits are subject to the owner
- There is very little regulation for proprietorships
- Owners have total flexibility when running the business
- Very few requirements for starting—often only a business license

#### **Disadvantages:**

- Owner is 100% liable for business debts
- Equity is limited to the owner's personal resources
- Ownership of proprietorship is difficult to transfer
- No distinction between personal and business income

### **Partnership**

These come in two types: general and limited. In general partnerships, both owners invest their money, property, labor, etc. to the business and are both 100% liable for business debts. In other words, even if you invest a little into a general partnership, you are still potentially responsible for all its debt. General partnerships do not require a formal agreement—partnerships can be verbal or even implied between the two business owners.

Limited partnerships require a formal agreement between the partners. They must also file a certificate of partnership with the state. Limited partnerships allow partners to limit their own liability for business debts according to their portion of ownership or investment.

#### **Advantages of partnerships:**

- Shared resources provides more capital for the business
- Each partner shares the total profits of the company
- Similar flexibility and simple design of a proprietorship
- Inexpensive to establish a business partnership, formal or informal

#### **Disadvantages:**

- Each partner is 100% responsible for debts and losses

- Selling the business is difficult—requires finding new partner
- Partnership ends when any partner decides to end it

## Corporation

Corporations are, for tax purposes, separate entities and are considered a legal person. This means, among other things, that the profits generated by a corporation are taxed as the “personal income” of the company. Then, any income distributed to the shareholders as dividends or profits are taxed again as the personal income of the owners.

### Advantages of a corporation:

- Limits liability of the owner to debts or losses
- Profits and losses belong to the corporation
- Can be transferred to new owners fairly easily
- Personal assets cannot be seized to pay for business debts

### Disadvantages:

- Corporate operations are costly
- Establishing a corporation is costly
- Start a corporate business requires complex paperwork
- With some exceptions, corporate income is taxed twice

## Limited Liability Company (LLC)

Similar to a limited partnership, an LLC provides owners with limited liability while providing some of the income advantages of a partnership. Essentially, the advantages of partnerships and corporations are combined in an LLC, mitigating some of the disadvantages of each.

### Advantages of an LLC:

- Limits liability to the company owners for debts or losses
- The profits of the LLC are shared by the owners without double-taxation

### Disadvantages:

- Ownership is limited by certain state laws
- Agreements must be comprehensive and complex
- Beginning an LLC has high costs due to legal and filing fees

## Types of industry concept

There are four types of industry. These are primary, secondary, tertiary and quaternary.

Primary industry involves getting raw materials e.g. mining, farming and fishing.

Secondary industry involves manufacturing e.g. making cars and steel.

Tertiary industries provide a service e.g. teaching and nursing.

**Quaternary industry involves research and development industries e.g. IT**

## Startup

### What Is a Startup?

The term startup refers to a company in the first stage of its operations. Startups are founded by one or more entrepreneurs who want to develop a product or [service](#) for which they believe there is a demand. These companies generally start with high costs and limited revenue which is why they look for capital from a variety of sources such as [venture capitalists](#).

### KEY TAKEAWAYS

- A startup is a company that's in the initial business stage.
- Until the business gets off the ground, a startup is often financed by its founders. and the startup attracts outside investment.
- There are many different ways to fund startups including family and friends, venture capitalists, crowdfunding, and credit.
- Startups also have to consider where they'll do business and their legal structure.

### Understanding Startups

Startups are companies or ventures that are focused around a single product or service that the founders want to bring to market. These companies typically don't have a fully developed [business model](#) and, more importantly, lack adequate [capital](#) to move on to the next phase of business. Most of these companies are initially funded by their founders.

Many startups end up turning to others for more funding—family, friends, and venture capitalists. Silicon Valley in California is known for its strong venture capitalist community and is a popular destination for startups, but is also widely considered the most demanding arena. Startups can use this [seed capital](#) to invest in research and to develop their business plans. Market research helps determine the demand for a product or service, while a comprehensive business plan outlines the company's [mission statement](#), future visions, and goals as well as management and marketing strategies.

[Dotcoms](#) were the most common type of startup in the 1990s. Venture capital was extremely easy to obtain during this time due to a frenzy among investors to speculate on the emergence of these new types of businesses. Unfortunately, most of these internet startups eventually went bust due to major oversights in their underlying business plans such as a lack of sustainable [revenue](#). However, there were a handful of companies that survived when the dotcom [bubble](#) burst. Both Amazon and eBay are examples of such companies.

So many startups fail within the first few years. That's why this initial period is so important. [Entrepreneurs](#) need to find money, create a business model and business plan, hire key personnel, work out intricate details such as [equity](#) stakes for partners and investors, and plan for the long run. Many of today's most successful companies began as startups—Facebook, Airbnb, Uber, SpaceX, and Ant Financial—and ended up becoming [publicly-traded companies](#).

The first few years are very important for startups—a period during which entrepreneurs should concentrate on raising capital and developing a business model.

## **Special Considerations**

### **Location**

Startups must decide whether their business is conducted online, in an office/home office or in a store. The location depends on the product or service being offered. For example, a technology startup selling [virtual reality](#) hardware may need a physical storefront to give customers a face-to-face demonstration of the product's complex features.

### **Legal Structure**

Startups need to consider what legal structure best fits their entity. A sole proprietorship is suited for a founder who is also the key employee of a business. Partnerships are a viable legal structure for businesses that consist of several people who have joint ownership, and they're also fairly straightforward to establish. Personal liability can be reduced by registering a startup as a [limited liability company](#) (LLC).

### **Funding**

Startups often raise funds by turning to family and friends or by using venture capitalists. This is a group of professional investors that specialize in funding startups. [Crowdfunding](#) has become a viable way for many people to get access to the cash they need to move forward in the business process. The entrepreneur sets up a crowdfunding page online, allowing people who believe in the company to donate money.

Startups may use credit to commence their operations. A perfect [credit history](#) may allow the startup to use a line of credit as funding. This option carries the most risk, particularly if the startup is unsuccessful. Other companies choose small business loans to help fuel growth. Banks typically have several specialized options available for small businesses—a [microloan](#) is a short-term low-interest product tailored for startups. A detailed business plan is often required in order to qualify.

## **Entrepreneurship support agencies at national, state, district levels**

### **DIC**

District Industries Centers (DICs) provide full assistance to the **entrepreneurs** who are going to start the business on their own and in their regional places. ... These **DIC** programs can take over the responsibilities in order to promote cottage and small scale industries at district level effectively.

### **NSIC**

National Small Industries Corporation (**NSIC**), is an ISO 9001-2015 certified Government of India Enterprise under Ministry of Micro, Small and Medium Enterprises (MSME). **NSIC** has been working to promote, aid and foster the growth of micro, small and medium enterprises in the country.

### **OSIC**

**THE ODISHA SMALL INDUSTRIES CORPORATION LTD. (OSIC)** was established on 3rd April, 1972 as a wholly owned Corporation of Government of Odisha. The basic objective of the Corporation is to aid ,assist and promot the MSMEs in the State for their sustained growth and development to gear up the industrialization process in the State.

### **SIDBI**

**Its** purpose is to provide refinance facilities and short term lending to industries, and serves as the principal financial institution in the Micro, Small and Medium Enterprises (MSME) sector. **SIDBI** also coordinates the **functions** of institutions engaged in similar activities.

### **NABARD**

**NABARD** is a Development Bank with a mandate for providing and regulating credit and other facilities for the promotion and development of agriculture, small-scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promoting ...

### **KVIC**

Rural Area as declared under **KVIC** Act 2006 - Scheme to be implemented by **KVIC, KVIB and DIC** (“Rural Area” means the area comprised in any Village and includes the area comprised in any town, the population of which does not exceed twenty thousand or such other figure as the Central Government may specify from time to ...

### **Technology Business Incubators(TBI)**

The need for instruments such as TBI has been recognised the world over for initiating technology led and knowledge driven enterprises. Studies also show that such mechanisms help not only in the growth of technology based new enterprises but also in improving their survival rate substantially (from 30 per cent to over 70 per cent). TBIs also facilitate speedy commercialisation of research outputs. The TBIs usually provide following types of services:-

- Market survey/ marketing assistance
- Business planning and training
- Organising management/ technical assistance
- Assistance in obtaining statutory approvals
- Information dissemination on product ideas/technologies
- Syndicating finances
- Arranging legal and IPR services
- Using facilities of the Host Institute (HI) at nominal charges
- Work space for a limited period
- Common facilities of TBI such as communication, conference, computers

Thus, the TBIs besides providing a host of services to new enterprises (and also to existing SMEs in the region) also facilitate an atmosphere congenial for their survival and growth. The essential feature of a TBI is that the tenant companies leave the incubator space within 2-3 years.

### **Objectives**

TBIs are promoted to achieve the following objectives:

- Creation of technology based new enterprises
- Creating value added jobs & services
- Facilitating transfer of technology
- Fostering the entrepreneurial spirit
- Speedy commercialisation of R&D output
- Specialised services to existing SMEs

### Criteria for selection of location

Ideally a TBI should be located near a source of technology and knowledge i.e. around R&D Institutions/Academic Institutions or it should have strong links with such institutions to ensure optimal use of the already existing expertise and facilities thus keeping the cost of the TBI on lower side. Locating TBIs in such location could also reduce time lag between technology development and its commercialisation. Further, as the success of a TBI largely depends on its location and management besides quality of tenant enterprises, following aspects relating to the Host Institution (HI) need to be kept in view while selecting location of the TBI:

- R&D track record and subsequent commercialisation of R&D output
- Dedicated team of R&D persons
- Industrial milieu in the region
- Proximity to other R&D/academic institutions
- Infrastructure, facilities and expertise available
- Strong commitment and willingness of the HI

### Thrust Areas

Each TBI would focus on not more than 2-3 thrust areas. The thrust areas for a TBI would be identified based on the following:

- Expertise and facilities available in the HI
- Track record of the HI in the chosen areas
- Industrial climate in the region
- Market potential/demand in the region

To begin with, TBIs are proposed to be promoted in following selected thrust areas which have potential for faster growth:

- Information & Communication Technology (ICT)/Internet of Things (IOT)
- Healthcare
- Manufacturing
- Agriculture and allied fields
- Clean-Tech
- Energy
- Water
- Services

### Facilities required

The TBIs should mainly draw upon the existing facilities available in the HI including land and building. However, certain essential facilities, which need to be created in a TBI are given below:

- Modern work space
- Communication facilities
- Computing facilities
- Vital equipment needed in identified area
- Library & information centre
- Training and conference facilities

### Sponsorship

The TBI may be promoted by the selected HI and DST jointly. The HI has to provide the requisite land and building for the TBI. Other related and interested agencies could also be involved as sponsors.

### Activities

Each TBI would be required to plan and undertake specified activities based on the identified thrust areas. However, the following set of activities is suggested as general guidelines:

- Provide specialized services to existing SMEs in the region
- Facilitate technology commercialization
- Consultancy
- Training including short courses
- Technology related IPR issues, legal and quality assurance services
- Marketing
- Assistance in obtaining and other clearances
- Common facilities
- Assistance in preparation of business plans
- Technology shows/ technology clinics/ trade fairs

### Organisation Status

The TBI should itself represent a dynamic model of sustainable business operation and generate revenue as well as profits. As per the guidelines of the Department regarding legal status of new Technology Business Incubators, it has become mandatory to register the new TBIs as an autonomous body functioning as a society registered under societies act of 1860/or as a non profit making section 25/ section 8 company. The affairs of the TBI should be managed by an Advisory Board. The Board of the TBI should help not only in development of a strategic plan containing quantifiable objectives to achieve the desired results but also in managing the TBI efficiently and effectively. The Board should have representation from the promoters and reputed professionals. This may include representatives of DST, SIDBI, HI, Industry, VC companies, Entrepreneurs, student bodies and tenants of the TBI. A committee should also be set up for selection of tenant firms.

### Staff Structure



The day to day operations of the TBI would be looked after by the Chief Executive Officer/Managing Director and a team of selected personnel which may include one or two professionals having technical/managerial qualification and relevant industry experience to look after areas such as business planning, technology transfer, training and consultancy. In addition, an accounts cum administrative officer and one secretarial assistant may be inducted in the core team. To cater to the specialised and need based services, the TBI should have a panel of experts/ consultants. Their services may be hired as and when required on payment basis. Security and house keeping services may be arranged on contract basis.

## Role of the HI

The Host Institution has to play an important role not only in the establishment of the TBI project but also in its smooth and efficient functioning. Only those institutions/ organisations that can provide land and built-up space for TBI and are also willing to share available facilities and expertise would be considered for setting up of the TBI.

Host Institute should demonstrate its commitment and responsibility towards the TBI project. The HI will provide a suitable built up area where-in the TBI could be set up besides provision of utilities such as electricity and water. The HI will also ensure availability of following facilities to the tenants of the TBI on mutually agreed charges:

- Lab/testing facilities
- Library
- Mainframe computer
- Faculty support

## Estimated Project Cost

Each TBI should prepare a detailed project proposal and work out the cost, based on actual requirements. A project implementation schedule may be prepared covering the key activity of the project. Since TBI is software intensive, greater focus should be laid on providing value-added services rather than facilities (hardware) to its tenants. Wherever possible, duplication of the facilities already existing in HI may be avoided and only need-based facilities may be proposed in the initial phase of the project.

## Self Sufficiency

Each TBI is expected to become self-sufficient within a period of five years from the date of sanction of the project. The TBI should, however, start earning from the very first year of its operation. The TBI should appoint a Project Manager with relevant experience and exposure to the business environment.

## Science & Technology Entrepreneurship Park (STEP)

The Science Parks and similar initiatives help in creating an atmosphere for innovation and entrepreneurship; for active interaction between academic institutions and industries for sharing ideas, knowledge, experience and facilities for the development of new technologies and their rapid transfer to the end user.

The Science & Technology Entrepreneurs Park (STEP) programme was initiated to provide a re-orientation in the approach to innovation and entrepreneurship involving education, training, research, finance, management and the government. A STEP creates the necessary climate for innovation, information exchange, sharing of experience and facilities and opening new avenues for students, teachers, researchers and industrial managers to grow in a trans-disciplinary culture, each understanding and depending on the other's inputs for starting a successful economic venture. STEPs are hardware intensive with emphasis on common facilities, services and relevant equipments.

The major objectives of STEP are to forge linkages among academic and R&D institutions on one hand and the industry on the other and also promote innovative enterprise through S&T persons.

### Objectives



- To forge a close linkage between universities, academic and R&D institutions on one hand and industry on the other.
- To promote entrepreneurship among Science and Technology persons, many of whom were otherwise seeking jobs soon after their graduation.
- To provide R&D support to the small-scale industry mostly through interaction with research institutions.
- To promote innovation based enterprises.

### Facilities and Services Provided by STEPs

- It offers facilities such as nursery sheds, testing and calibration facilities, precision tool room/central workshop, prototype development, business facilitation, computing, data bank, library and documentation, communication , seminar hall/conference room , common facilities such as phone, telex, fax, photocopying. It offers services like testing and calibration, consultancy.
- Training, technical support services, business facilitation services, database and documentation services, quality assurance services and common utility services .

The department has so far catalysed 15 STEPs in different parts of the country, which have promoted nearly 788 units generating annual turnover of around Rs. 130 crores and employment for 5000 persons. More than 100 new products and technologies have been developed by the STEPs / STEP promoted entrepreneurs. In addition, over 11000 persons have been trained through various skill development programmes conducted by STEPs.

STEPs are autonomous bodies registered as societies under the Societies Registration Act.

### Role of Host Institution

In order to achieve synergetic benefits and also to harness the knowledge and expertise available in academic and R&D institutions of excellence, every STEP needs to be promoted around a host institution which could launch, sustain and help the STEP grow. Therefore, the host institution has to play an important and crucial role in promotion and growth of a STEP.

The host institution should aim at optimum usage of its facility by STEP. For this purpose, a periodic assessment of the priorities must be undertaken based on which re-allocation of resources might become necessary. During the stages of planning and implementation of the STEP project, the host institution must not lose sight of its slated goals and objectives with respect to academic excellence.

### STEP Model

Though a workable 'STEP-Model' has been evolved by an Expert Committee chaired by the late Prof. Y. Nayudamma, however, each STEP would have to carve out a niche for itself with regard to the types of products to be developed based on the availability of facilities and expertise in the host institution and also the industrial climate of the region.

Each project envisages active involvement and participation of agencies such as the host institution, ultimate user of the facilities, financial institutions, government agencies and STEP management.

## QUESTIONS

1. Who can be an entrepreneur?
2. State the characteristics of entrepreneurship.
3. What are the barriers to entrepreneurship?
4. Differentiate between entrepreneur and manager?
5. Write Short notes on
  - I. Sole proprietorship
  - II. NABARD
  - III. TBI
6. What is a startup?

## 2. Market survey and opportunity Identification (Business Planning)

### **Business planing**

A business plan is a written description of your business's future. That's all there is to it--a document that describes what you plan to do and how you plan to do it. If you jot down a paragraph on the back of an envelope describing your business strategy, you've written a plan, or at least the germ of a plan.

**Business plans** can help perform a number of tasks for those who write and read them. They're used by investment-seeking entrepreneurs to convey their vision to potential investors. They may also be used by firms that are trying to attract key employees, prospect

for new business, deal with suppliers or simply to understand how to manage their companies better.

So what's included in a business plan, and how do you put one together? Simply stated, a business plan conveys your business goals, the strategies you'll use to meet them, potential problems that may confront your business and ways to solve them, the organizational structure of your business (including titles and responsibilities), and finally, the amount of capital required to finance your venture and keep it going until it breaks even.

Sound impressive? It can be, if put together properly. A good business plan follows generally accepted guidelines for both form and content. There are three primary parts to a business plan:

- **The first is the *business concept***, where you discuss the industry, your business structure, your particular product or service, and how you plan to make your business a success.
- **The second is the *marketplace section***, in which you describe and analyze potential customers: who and where they are, what makes them buy and so on. Here, you also describe the competition and how you'll position yourself to beat it.
- **Finally, the *financial section*** contains your income and cash flow statement, balance sheet and other financial ratios, such as break-even analyses. This part may require help from your accountant and a good spreadsheet software program.

Breaking these three major sections down even further, a business plan consists of seven key components:

1. Executive summary
2. Business description
3. Market strategies
4. Competitive analysis
5. Design and development plan
6. Operations and management plan
7. Financial factors

In addition to these sections, a business plan should also have a cover, title page and table of contents.

**How Long Should Your Business Plan Be?**  
Depending on what you're using it for, a useful business plan can be any length, from a scrawl on the back of an envelope to, in the case of an especially detailed plan describing a complex enterprise, more than 100 pages. A typical business plan runs 15 to 20 pages, but there's room for wide variation from that norm.

Much will depend on the nature of your business. If you have a simple concept, you may be able to express it in very few words. On the other hand, if you're proposing a new kind of business or even a new industry, it may require quite a bit of explanation to get the message across.

The purpose of your plan also determines its length. If you want to use your plan to seek millions of dollars in seed capital to start a risky venture, you may have to do a lot of explaining and convincing. If you're just going to use your plan for internal purposes to manage an ongoing business, a much more abbreviated version should be fine.

**Who Needs a Business Plan?**



## Finding the Right Plan for You

Business plans tend to have a lot of elements in common, like cash flow projections and marketing plans. And many of them share certain objectives as well, such as raising money or persuading a partner to join the firm. But business plans are not all the same any more than all businesses are.

Depending on your business and what you intend to use your plan for, you may need a very different type of business plan from another entrepreneur. Plans differ widely in their length, their appearance, the detail of their contents, and the varying emphases they place on different aspects of the business.

The reason that plan selection is so important is that it has a powerful effect on the overall impact of your plan. You want your plan to present you and your business in the best, most accurate light. That's true no matter what you intend to use your plan for, whether it's destined for presentation at a venture capital conference, or will never leave your own office or be seen outside internal strategy sessions.

When you select clothing for an important occasion, odds are you try to pick items that will play up your best features. Think about your plan the same way. You want to reveal any positives that your business may have and make sure they receive due consideration.

### **Types of Plans**

Business plans can be divided roughly into four separate types. There are very short plans, or miniplans. There are working plans, presentation plans and even electronic plans. They require very different amounts of labor and not always with proportionately different results. That is to say, a more elaborate plan is not guaranteed to be superior to an abbreviated one, depending on what you want to use it for.

- ***The Miniplan.*** A miniplan may consist of one to 10 pages and should include at least cursory attention to such key matters as business concept, financing needs, marketing plan and financial statements, especially cash flow, income projection and balance sheet. It's a great way to quickly test a business concept or measure the interest of a potential partner or minor investor. It can also serve as a valuable prelude to a full-length plan later on.

Be careful about misusing a miniplan. It's not intended to substitute for a full-length plan. If you send a miniplan to an investor who's looking for a comprehensive one, you're only going to look foolish.

- ***The Working Plan.*** A working plan is a tool to be used to operate your business. It has to be long on detail but may be short on presentation. As with a miniplan, you can probably afford a somewhat higher degree of candor and informality when preparing a working plan.

A plan intended strictly for internal use may also omit some elements that would be important in one aimed at someone outside the firm. You probably don't need to include an appendix with resumes of key executives, for example. Nor would a working plan especially benefit from, say, product photos.

Fit and finish are liable to be quite different in a working plan. It's not essential that a working plan be printed on high-quality paper and enclosed in a fancy binder. An old three-ring binder with "Plan" scrawled across it with a felt-tip marker will serve quite well.

Internal consistency of facts and figures is just as crucial with a working plan as with one aimed at outsiders. You don't have to be as careful, however, about such things as typos in the text, perfectly conforming to business style, being consistent with date formats and so on. This document is like an old pair of khakis you wear into the office on Saturdays or that one ancient delivery truck that never seems to break down. It's there to be used, not admired.

- ***The Presentation Plan.*** If you take a working plan, with its low stress on cosmetics and impression, and twist the knob to boost the amount of attention paid to its looks, you'll wind up with a presentation plan. This plan is suitable for showing to bankers, investors and others outside the company.

Almost all the information in a presentation plan is going to be the same as your working plan, although it may be styled somewhat differently. For instance, you should use standard business vocabulary, omitting the informal jargon, slang and shorthand that's so useful in the workplace and is appropriate in a working plan. Remember, these readers won't be familiar with your operation. Unlike the working plan, this plan isn't being used as a reminder but as an introduction.

You'll also have to include some added elements. Among investors' requirements for due diligence is information on all competitive threats and risks. Even if you consider some of only peripheral significance, you need to address these concerns by providing the information.

The big difference between the presentation and working plans is in the details of appearance and polish. A working plan may be run off on the office printer and stapled together at one corner. A presentation plan should be printed by a high-quality printer, probably using color. It must be bound expertly into a booklet that is durable and easy to read. It should include graphics such as charts, graphs, tables and illustrations.

It's essential that a presentation plan be accurate and internally consistent. A mistake here could be construed as a misrepresentation by an unsympathetic outsider. At best, it will make you look less than careful. If the plan's summary describes a need for \$40,000 in financing, but the cash flow projection shows \$50,000 in financing coming in during the first year, you might think, "Oops! Forgot to update that summary to show the new numbers." The investor you're asking to pony up the cash, however, is unlikely to be so charitable.

- ***The Electronic Plan.*** The majority of business plans are composed on a computer of some kind, then printed out and presented in hard copy. But more and more business information that once was transferred between parties only on paper is now sent electronically. So you may find it appropriate to have an electronic version of your plan available. An electronic plan can be handy for presentations to a group using a computer-driven overhead projector, for example, or for satisfying the demands of a discriminating investor who wants to be able to delve deeply into the underpinnings of complex spreadsheets.

### **Small Scale Industries ( SSI )**

Small scale industries are those industries in which the manufacturing, production and rendering of services are done on a small or micro scale. These industries make a one-time investment in machinery, plants, and industries, but it does not exceed Rs 1 Crore.

#### **1. Introduction of SSI**

2. [Characteristics of SSI](#)
3. [Role in the Indian economy](#)
4. [Objectives of SSI](#)
5. [Registration of SSI](#)

## 1. Introduction of SSI

Essentially the small scale industries are generally comprised of those industries which manufacture, produce and render services with the help of small machines and less manpower. These enterprises must fall under the guidelines, set by the Government of India.

The SSI's are the lifeline of the economy, especially in developing countries like India. These industries are generally labour-intensive, and hence they play an important role in the creation of employment. SSI's are a crucial sector of the economy both from a financial and social point of view, as they help with the per capita income and resource utilisation in the economy.

## Examples and Ideas of Small Scale Industries

- Bakeries
- School stationeries
- Water bottles
- Leather belt
- Small toys
- Paper Bags
- Photography
- Beauty parlours

## 2. Characteristics of SSI

- **Ownership:** SSI 's generally are under single ownership. So it can either be a sole proprietorship or sometimes a partnership.
- **Management:** Generally both the management and the control is with the owner/owners. Hence the owner is actively involved in the day-to-day activities of the business.
- **Labor Intensive:** SSI's dependence on technology is pretty limited. Hence they tend to use labour and manpower for their production activities.



- **Flexibility:** SSI's are more adaptable to their changing business environment. So in case of amendments or unexpected developments, they are flexible enough to adapt and carry on, unlike large industries.
- **Limited Reach:** Small scale industries have a restricted zone of operations. Hence, they can meet their local and regional demand.
- **Resources utilisation:** They use local and readily available resources which helps the economy fully utilise natural resources with minimum wastage.

### 3. Role in the Indian economy

- **Employment:** SSI's are a major source of employment for developing countries like India. Because of the limited technology and resource availability, they tend to use labour and manpower for their production activities.
- **Total Production:** These enterprises account for almost 40% of the total production of goods and services in India. They are one of the main reasons for the growth and strengthening of the economy.
- **Make in India:** SSI's are the best examples for the Make in India initiative. They focus on the mission to manufacture in India and sell the products worldwide. This also helps create more demands from all over the world.
- **Export contribution:** India's export industry majorly relies on these small industries for their growth and development. Nearly half of the goods that are exported from India are manufactured or produced by these industries.
- **Public Welfare:** These industries have an opportunity to earn wealth and create employment. SSI's are also important for the social growth and development of our country.

### 4. Objectives of SSI

The objectives of the small scale industries are:

- To create more employment opportunities.
- To help develop the rural and less developed regions of the economy.
- To reduce regional imbalances.
- To ensure optimum utilisation of unexploited resources of the country.
- To improve the standard of living of people.
- To ensure equal distribution of income and wealth.
- To solve the unemployment problem.
- To attain self-reliance.

- To adopt the latest technology aimed at producing better quality products at lower costs.

## 5. Registration of SSI

SSI registration is a registration provided by the Ministry of MSME. A business should obtain SSI registration in order to be eligible for a number of schemes, subsidies and other incentives provided by the Government to such SSI's. SSI registration can be obtained online too. Let's look at the process of SSI registration online:

### Overview of SSI registration

SSI registration is provided by the Ministry of Micro, Small and Medium Enterprises through the Directorate of Industries of the State Government. The main logic behind the SSI registration is to set up new SSI businesses in India. SSI registration helps the business to be eligible for a number of subsidies given by the Government. We can also get SSI registration online.

### Eligibility Criteria for SSI registration

SSI registration can be obtained for:

- Manufacturing enterprise; and
- Service enterprise

**For manufacturing enterprise, if the investment in plant and machinery (excluding land & buildings) is within any of the following levels:**

Micro Enterprises: Investment of up to Rs.25 lakhs in plant and machinery  
 Small Enterprises: Investment of up to Rs.5 crores in plant and machinery  
 Medium Enterprises: Investment of up to Rs.10 crores in plant and machinery

**For service enterprise, if the investment in plant and machinery (excluding land & buildings) is within any of the following levels:**

Micro Enterprises: Investment of up to Rs.10 lakhs in equipment  
 Small Enterprises: Investment of up to Rs.2 crores in equipment  
 Medium Enterprises: Investment of up to Rs.5 crores in equipment  
 If the investment is done within the above-mentioned limits then the SSI registration has to be obtained.

### Benefits of obtaining SSI registration

- There are various tax rebates offered to SSI's
- A credit for Minimum Alternate Tax (MAT) is allowed to be carried forward for up to 15 years instead of 10 years
- There are many government tenders which are only open to the SSI.
- They get easy access to credit.

- Once registered the cost of acquiring a patent, or the cost of setting up the industry reduces as many rebates and concessions are available.
- Business registered as SSI are given higher preference for government license and certification.

**Business registered as SSI are given higher preference for government license and certification.**

- To do the registration the SSI owner has to fill a single SSI online registration form. It can be done in the offline mode as well.
- If a person wants to get registration for more than one industry then also he/she can opt for an individual SSI registration done.
- To get registered he/she has to fill a single form which is available at the website.
- The documents required for the SSI registration are Aadhar number, industry name, address, bank account details and some common information.
- Here, the person can provide self-certified certificates.
- No registration fees is required for the registration.
- Once the SSI registration form is filled and uploaded, very soon you will obtain the SSI registration number.

**Ancillary unit**

Ancillary industries are those which manufacture parts and components to be used by larger industries. Eg- Companies like GE (ancillary) produce engines for the aircraft industry. The programme of ancillarisation includes motivation of public and private sector units to offload production of components, parts, sub-assemblies, tools, intermediates, services etc., to ancillary units. The programme of ancillary development has specific advantages both for large as well as small industries and also for the total economy of the country. The large scale units have the advantages in the form of savings in investments, inventories, employment of labour, etc. and getting the items of the desired specifications, while the small scale units have the advantage of getting assured market for their products, availability of technical assistance and improved technology from the parent units. This programme also helps in overall economy of the country. Small Industry Development Organisation (SIDO) is a nodal agency of the Central Government and Ancillary Division at Headquarters continued its function for the promotion of ancillarisation programme in the country. Constant liaison has been maintained with Administrative Ministries both at Central & State Levels, Department of Public enterprises, public/private sector undertakings and other industrial developmental agencies through various programmed such as Vendor Development Programmes, Buyer-Sellers Meet, Ancillary Exhibition, Seminars, Workshops, State Level Ancillary Advisory Meetings, Plant Level Committee Meetings and PSUs and visit to public/private sector undertakings for the promotion of small ancillary & sub-contracting units. Sub-contracting exchanges are functioning as a part of major SISIs in the country at important cities for the promotion of fruitful and lasting contracts between large & medium undertakings and small scale ancillary units. The spare capacity for different facilities as available with the competent small scale units are registered with these SCXs. These SCXs also obtain such items from large units which are required by them and can be manufactured in the small scale sector.

These SCXs organise contacts between Buyers & Sellers by way of organising Vendor Development Programmes, Buyers & Sellers Meet and Exhibition, etc.

### **Tiny unit**

The **Tiny (Micro) Small scale industries** have played a vital role in the overall economic development of our country where millions of people are unemployed, where most of the **entrepreneurs** are capable of making only small investment and where there is chronic shortage of resources to produce sophisticated machinery and ...**Tiny Industry: Tiny Scale industry** is one in which the investment in plant and machinery is less than Rs.25 lakhs irrespective of the location of the unit. • **Small Scale Industry:** An **industrial** undertaking in which the investment in plant.

### **What is the Service Sector?**

The service [sector](#) produces intangible goods, more precisely services instead of goods, and according to the [U.S. Census Bureau](#), it comprises various service industries including warehousing and transportation services; information services; [securities](#) and other investment services; professional services; waste management; health care and social assistance; and arts, entertainment, and recreation. Countries with economies centered around the service sector are considered more advanced than industrial or agricultural economies.

### **KEY TAKEAWAYS**

- The service sector is the third sector of the economy, after raw materials production and manufacturing.
- The service sector includes a wide variety of tangible and intangible services from office cleaning to rock concerts to brain surgery.
- The service sector is the largest sector of the global economy in terms of value-added and is especially important in more advanced economies.

### **Understanding Service Sector**

The service sector, also known as the tertiary sector, is the third tier in the three sector economy. Instead of the product production, this sector produces services maintenance and repairs, training, or consulting. Examples of service sector jobs include housekeeping, tours, nursing, and teaching. By contrast, individuals employed in the industrial or manufacturing sectors produce [tangible goods](#), such as cars, clothes, or equipment.

Among the countries that place heavy emphasis on the service sector, the United States, the United Kingdom, Australia, and China rank among the top. In the United States, the [Institute for Supply Management \(ISM\)](#) produces a monthly index that details the general state of business activity in the service sector. This index is regarded as a metric for the overall economic health of the country because approximately two-thirds of U.S. economic activity occurs in the service sector.

According to the CIA World Factbook, the following countries are the largest by service or tertiary output as of 2018:

1. United States: \$15.5 trillion
2. China: \$6.2 trillion
3. Japan: \$3.4 trillion
4. Germany: \$2.5 trillion
5. United Kingdom: \$2.1 trillion

6. France: \$2.0 trillion
7. Brazil: \$1.5 trillion
8. India: \$1.5 trillion
9. Italy: \$1.4 trillion
10. Canada: \$1.2 trillion

### **The Service Sector in the Three-Part Economy**

The service or tertiary sector is the third piece of a three-part economy. The first economic sector, the primary sector, covers the farming, mining, and agricultural business activities in the economy. The secondary sector covers manufacturing and business activities that facilitate the production of tangible goods from the raw materials produced by the primary sector. The service sector, though classified as the third economic sector, is responsible for the largest portion of the global economy's business activity.

### **Technology in the Service Industry**

Technology, specifically information technology systems, is shaping the way businesses in the service sector operate. Businesses in this sector are rapidly placing more focus on what is becoming known as the [knowledge economy](#), or the ability to surpass competitors by understanding what target customers want and need, and operate in a way that meets those wants and needs quickly with minimal cost. In nearly all industries within the sector, businesses adopt new technology to bolster production, increase speed and efficiency, and cut down on the number of employees required for operation. This cuts down on costs and improves incoming revenue streams.

### **Time schedule planning**

#### **1. Create a routine**

No matter what you are working on, create a routine. Block times for specific activities, and stick with the plan. Turn your calendar into a bunch of blocks, and put activities into those blocks. Whatever is not planned, you don't do. If you want free time, plan it.

Your routine may change through the year, but at any given time it's better to have a plan. For example, if you are working on launching a company, and need to do customer discovery, coding and hiring, then prioritize and block specific times for each activity. A [calendar app](#) is a very useful tool

#### **2. Group meetings and calls into blocks**

For example, if you need to have outside meetings, block two and a half days a week for those meetings, and go to the outside meetings only during those times. Do the same thing for in-office meetings. This way you are not only creating a chunk of time for meetings, you are also creating other blocks of time that you will be able to important work. Do the same thing with calls, and book them all back to back.

#### **3. Optimize time for different meeting types**

Personally, I am now a big fan of 30-minute meetings and 10-minute calls. I think 10-minute calls are a great way to initially connect with someone or give someone quick advice. You can do a Google Hangout or Skype if you prefer to see the person instead of just hearing

them. The reason 10-minute calls work is because people skip BS and get to the point. Try it. Ten minutes is actually a lot of time, if you focus. I prefer to do these calls on Fridays, when I am usually working from home.

I am not a big fan of introductory coffee meetings, lunches and dinners. I am a huge fan of coffee and meals with people I already know. Those meetings are typically productive and fun, but the first time you are meeting someone, it's more productive to do a call or an actual 30-minute meeting in the office.

Here are the types of meetings you might want to book:

- 30-minute meeting in the office to get to know someone or catch up
- 45-minute meeting outside of the office. Allow 15 minutes for travel.
- 10-minute call to help someone who needs advice
- 15-minute daily standup -- great for startups and engineering teams
- 30-minute weekly staff meeting

Whatever meetings you hold, group them into blocks depending on your particular schedule. If you feel like a particular type of meeting needs more or less time, then adjust the block accordingly.

#### **4. Use appointment slots**

There is a great feature in Google Calendar called Appointment Slots. It allows you to book a chunk of time, and then split it into pieces. For example, I can book three hours of outside meetings and then split it into three meetings -- one hour each. Or I can book one hour of calls and split it into six calls at 10 minutes each. There is also a bunch of specific tools, such as [doodle](#), that do that too.

The next step is to create bit.ly links for different blocks of time. You can have a link for your outside meetings, another link for 30-minute inside meetings and yet another one for 10-minute calls. You then share these links, and they can book the time with you. I've done this with Techstars candidate companies and it was amazingly effective. It minimized the back and forth on email and saved a ton of time for me and the companies.

**Related: [How to Use Technology to Increase Productivity, Not Distract You](#)**

This won't work with everyone, because some people may find this rude. In any case, if you are not comfortable sending the link to a someone, then you can use your own appointment slots, suggest a few meeting times, and then book the specific slot yourself.

If you are asking someone to meet, always propose several specific alternative times such as Tuesday at 4:30 p.m. or 5 p.m. on Wednesday. [David Tisch](#) gave a [great talk](#) that covers scheduling meetings and many more basics of communication.

#### **5. Block time for email**

This is the most important tip in the whole post. Email will own you unless you own it. To own your email you must avoid doing it all the time. To do that you need to schedule the time to do your email. It is absolutely a must. In fact it is so important that I wrote a whole [entire post about managing email](#).

#### **6. Plan your exercise and family time**

Unless you put it on the calendar, it won't get done. Well, that applies to your exercise and time with your family. Whether you go in the morning, afternoon or evening, do it

three times a week or every day, put exercise time on the calendar. My friend and mentor [Nicole Glaros](#) makes it very clear that her mornings, until 10 a.m., belong to her. She hits the pavement or the gym, depending on the weather, and rarely deviates from her routine.

The same applies to planning time with your family and significant others. If you are a workaholic like me, you will end up stealing time from your family unless you book it in advance and train yourself to promptly unplug. Many people in the industry have talked about planning family time. My favorite is Brad Feld, [who talks about it a lot](#).

## 7. Actually manage your time

I think about my time a lot. I think about where it goes. I think about where can I get more of it, and how to optimize it. When I was running GetGlue, I had an assistant who was managing my time. She was awesome. But when I joined Techstars, I decided that I will manage my calendar myself. I have to confess that I am happy about this decision.

I find myself thinking about what I am doing, who am I meeting with and why a lot more. I meet with a lot of people every week. My schedule is particularly insane during the selection process. Yet, because I manage my calendar, follow a routine, plan meetings in blocks and use appointment slots, I find myself less overwhelmed and less stressed.

### **Agencies to be contacted for Project Implementation**

**Project Implementation Unit** is a technical **project** management **unit** that serves as the technical secretariat for the GPC. PIU reports directly to GPC and is tasked to **implement** daily tasks, and manage and oversee the **project** development.

### **Setting up an Implementation Agency**

- What type of an Implementation Agency to set up – Society, Trust or Section 8 Company
- How to set up the Implementation Agency? What are the rules and regulations?
- Registration requirements:
  - With Registering bodies
  - Income Tax
  - Service Tax
  - Home Ministry
  - CAPART
- Setting up the Registered Office
- Opening a Bank Account
- Things to keep track of with regard to all regulations and compliances?

### **Governance of the Implementation Agency**

- How to ensure effective governance mechanisms are in place, with adequate checks and balances
- How to build on-time reporting system and effective documentation?

### **Funding**

- How to build a working revenue model and improve fundraising abilities?
- How to develop correct financial and reporting system with funders?
- How to obtain various tax exemptions to support fund raising?
- What are the ways to reach financial sustainability?

### **Project Development & Management**

- How to develop impactful projects?
- How to create projects that are scalable and can get funded?
- What are the strongest areas to build your activities around?

### Scaling

- How to ensure the current actions will lead to future growth?
- How to expand the projects to maximize impact?

### Skill-building

- Where to find professionals to hire and how to develop their skills further?
- Which skills are currently required in the market that can get the target client into future jobs?

### Evaluation and assessment

- How to evaluate the efficiency of a project and maximize impact?

## Assessment of Demand and supply and Potential areas of Growth

### What Is Demand?

Demand is the **amount of goods or services that consumers are willing to pay at each price point**. It is based on wants and needs and the ability to pay. If consumers are unable to pay for goods and services, demand does not exist. When the price of a good or service rises, demand decreases. Conversely, if the price of a good or service falls, demand goes up. This law of demand represents an inverse relationship between price and quantity demanded.

Take the price of gasoline, for example. When the price of a gallon of gasoline increases, consumers start finding ways to reduce consumption by combining errand trips, taking vacations closer to home, forming carpools or commuting by mass transit.

However, the demand for a product is not infinite; people usually want only a certain amount of a good. Purchasing additional quantities of a product yields less and less satisfaction.

### How to Graph a Demand Curve

A demand curve can be illustrated by constructing a graph with price plotted on the vertical axis and quantity demanded on the horizontal. The demand curve will slope downward from left to right as price declines and demand increases. Demand curves can be flat or steep, or they can be straight or curved. The relationship between price and demand will be unique for each good or service being analyzed.

### What Is Supply?

Supply is the **amount of goods or services available or produced**, based on a number of factors such as input resources, labor, technology and regulations. Let's consider again the price of gasoline.

If a new gas reserve is discovered unexpectedly, the supply suddenly increases. Because gas becomes less scarce, prices become more competitive to beat out other suppliers for sales volumes. Prices will decrease to the level where the demand matches, because demand will naturally increase: Cheaper gas is more attractive than its more expensive counterpart.

### How to Graph a Supply Curve

Graphically, a supply line is represented by an upward sloping curve from left to right with price on the vertical axis and quantity plotted on the horizontal axis. In the case of both



supply and demand relationships, all other variables are assumed to remain constant when constructing these graphs.

### **What Is Supply and Demand Equilibrium?**

Since the data for the supply and demand curves can both be plotted on the same graph, they will intersect at an equilibrium point. This is the price/quantity point where consumers and producers are satisfied with their decisions, and the market is in balance. The quantity supplied equals the quantity demanded.

The laws of supply and demand ensure that the market always recalibrates to equilibrium. When the market price is higher than the equilibrium price, the supply quantity will be greater than the quantity demanded, resulting in excess supply. Producers will then have the incentive to cut prices down to the equilibrium level to sell this excess supply.

If the market price is lower than equilibrium, competition between buyers creates excess demand. Producers then have the opportunity to raise prices up to the equilibrium level.

### **What Factors Affect Demand?**

The factors that affect demand cause a shift of the entire demand curve to either the left or the right. This is different from a movement along the demand curve, which would be a result of a price change.

The factors that affect the demand curve are changes in:

**Tastes and preferences.** Consumer tastes are constantly changing, and demand for products rises and falls as a result. Kale is an example of changing tastes. For years, kale was used as a decoration for commercial buffets, then its health benefits become more publicized. As a result, demand for kale rose and prices increased.

**Income level.** When consumer incomes increase, they are able to demand and buy more normal goods, which are products whose demand goes up as income rises. For example, suppose a car costs \$25,000 and 19 million buyers are willing to pay this price. Now, suppose consumer incomes increased; with more money available to spend, 21 million people can afford to pay \$25,000 for the car.

In this case, demand for cars increased with a rise in income, and the demand curve shifted to the right.

**Prices of substitutes.** An increase in the price of one product can increase the demand for its substitute. Coca-Cola and Pepsi are excellent examples of this effect. If Pepsi increases its price, consumers will quickly switch to buying more Coke.

**Complements.** Complementary goods are products typically bought together, like yoga classes and mats or bread and butter. If the price for yoga classes falls, more people will sign up, increasing the demand for mats. A drop in the price of bread will increase the demand for butter to put on the bread.

**Expectation of future prices.** If consumers expect prices to drop in the near future or go on sale, they will delay their purchases, shifting the demand curve to the left. English muffins, for example, are frequently offered at buy one, get one free. Consumers know this, so rather than pay full price for a single package, they wait for the special offer.

The opposite is true for anticipated price increases, shifting the demand curve to the right in advance of price rises.

**Changes in buyer demographics.** Changing demographics affect the demand for different products. For instance, the increasing percentage of elderly people in the population increases the demand for nursing homes, hearing aids and in-home health care.

### **What Factors Affect Supply?**

The factors that affect the shifts in a supply curve are changes in:

**Cost of production.** Changes in the costs to manufacture a product will cause the producer to modify production volume. Suppose a car manufacturer receives an increase in the price of steel and raises the price of cars to cover the increase. Consumers will demand a lower

quantity of cars at the higher price, causing the manufacturer to reduce output and shift the supply curve to the left.

**Technology.** Improvement in technology that reduces the cost of production will enable producers to lower selling prices and sell more cars. This shifts the supply curve to the right.

**Number of suppliers.** The addition of new suppliers increases the quantities available at the same prices and shifts the supply curve to the right.

**Government regulations.** Some government regulations can increase the cost of production. As a result, a manufacturer might reduce the quantity supplied because the profit is reduced, shifting the curve to the left.

### **What Is the Importance of Supply and Demand Analysis?**

All business managers and consumers use supply and demand analysis to make decisions. Business owners analyze the factors that affect supply and demand curves to determine what volume to produce and how to price their products. Consumers make buying decisions, either consciously or instinctively, based on their wants and needs and perceived value received at particular price points.

The basics laws of supply and demand form the foundation of a competitive, capitalistic environment.

### **growth potential**

Growth potential is an organization's future ability to generate larger [profits](#), expand its [workforce](#) and increase production. In the business sense, an organization's growth potential depends heavily upon its leadership's expectations for success, and the quantitative and qualitative measures used to determine expansion readiness.

Growth potential can be gauged from an organization's planned movement into new markets, the development of new product lines, the employment of more effective marketing techniques, or other methods that grow a business from a niche market to a more volume operation. Growth potential is often a barometer for investment interest from public and private investors, venture capitalists and other stakeholders.

## **Identification of Business Opportunity**

- I. 1. IDENTIFICATION OF BUSINESS OPPORTUNITY Made and Drafted By-  
Krishnkant Chaturvedi Gwalior (MP), INDIA Email:  
krishna.chaturvedi37@gmail.com WHAT IS OPPORTUNITY? Opportunity is  
defined as a situation that enables an entrepreneur to offer marketable products or  
services to interested buyers or end users 1KRISHNKANT CHATURVEDI
- II. 2. TYPES OF SITUATIONAL FACTORS •Product or service is still not in  
existence •Product or service is already in the market but failed to satisfy the  
customers – so need to be improved EMERGENCE OF OPPORTUNITY • when  
people decide they have certain needs and want to be satisfied, or when people  
discovered a problem of some kind that can be helped by a product or service. • The  
presence of unfulfilled needs and want and/or problems alerts the entrepreneur to the  
potential opportunity. • The entrepreneur later creates a business that is able to fulfill  
the needs or want and/or solve the problem. 2KRISHNKANT CHATURVEDI
- III. 3. OPPORTUNITY IDENTIFICATION Opportunity identification is a process that  
involved the search for and discovery of business opportunities APPROACH TO  
OPPORTUNITY IDENTIFICATION 1. Observe changes in the environment 2.  
Recognize a need that customers have that is not being satisfied 3. Recognize  
problems and find ways to solve it OBSERVING CHANGES IN THE  
ENVIRONMENT Changes in the environment give rise to needs and wants and/or

problems, and an opportunity emerges Important environment forces to observe include : 1. Economic forces 2. Social forces 3. Technological advances 4. Political and regulatory statues 3KRISHNKANT CHATURVEDI

- IV. 4. Examples of How Changes in the Environment Provides Openings for New Product and Service Opportunities Structure of Population and Income Number of teenagers higher than number of elderly and children Cyber cafes, Cineplex's, recording studios People have higher purchasing power Passenger cars, household furniture, DVD Social Increase incident of housebreaking Grills, alarm, sensor, security systems Increase interest in fitness Fitness center, dancing class, in-house exercise equipment, health food store Increase mobility of population Hand phone, laptop computers Increasing predominance of dual-income families leaves less time to cook at home Restaurants, food delivery services Technological Advances Advances in biotechnology Biotech-related pharmaceutical products, foodproducts, veterinary products Development of the internet E-commerce, improved communication Increase pressure to improve economicperformance Online marketing, cost control services Government Policies and Regulations Increased driving standards Smoke emission control, helmet, seatbelt 4KRISHNKANT CHATURVEDI
- V. 5. RECOGNIZE NEEDS AND WANTS Opportunity occurs whenever there is a need and want to fulfill. The term “needs” refer to basic needs that the consumer must have in order to live while the term “wants” refers to a personal desire for something that is more than a basic need. RECOGNIZE PROBLEM AND FIND SOLUTION Problems can be recognized by observing the challenges that people encounter in their daily lives. Solution to the problem represented a business opportunity OPPORTUNITY IDENTIFICATION PROCESS Search for Changes in the environment Recognize needs and wants, and solutions Discovery of Opportunity 5KRISHNKANT CHATURVEDI
- VI. 6. ABILITY TO SEARCH AND DISCOVER BUSINESS OPPORTUNITIES •Experience and exposure •Knowledge and skills •“Special alertness” •Social network •Creativity •Vigilant MECHANISM TO IDENTIFY OPPORTUNITIES • Customers • Retailers and distributors • Business associates • Bankers • Consultants • Employees • Others EVALUATION AND SELECTION PROCESS The evaluation and selection process involves judging the viability of the opportunity and assessing its potential. 6KRISHNKANT CHATURVEDI
- VII. 7. CRITERIA FOR EVALUATION AND SELECTION 1. Can make money and has potential for growth 2. Less competition 3. Good fit between entrepreneur and opportunity 4. Has competitive advantage 5. Workable and efficient 6. Not against the norms and values of the community 7. Conform with laws and regulations 7KRISHNKANT CHATURVEDI

### Final product selection

There are three basic stages/steps involved in **product/venture selection**. These are idea generation, evaluation, and choice. The starting point for idea generation could be a simple analysis of the **business's** strengths and weakness.

CONCEPT OF **PRODUCT SELECTION** • **Product selection** is a decision process, in which the design team selects one or few **product** concept for further development. • An **entrepreneur** establishes a business unit with a modest investments in a small scale level.

## QUESTIONS

1. What is Business Planning?
2. Write short note on
  - I. SSI
  - II. Time schedule planning
3. What is demand and supply explain?
4. Differentiate between an ancillary unit and Tiny unit?

### 3.Project Report Preparation

**PROJECT REPORT PREPARATION** • Project report: The document which contains the required details like the personal biodata of the entrepreneur, the product to be manufactured, its design manufacturing process, raw materials, machines and equipments required, staff needed, the amount of money required, the source of finance, cost of goods to be produced market demand of product and likely profits anticipated etc, is called a project report. •

Need of Project Report:

1. The project report is like a Roadmap. It describes the direction the enterprise is going in, what its goals are, where it wants to be and how it is going to get there. It also enables the entrepreneur to know whether he is proceeding in the right direction.
2. It helps the entrepreneur in getting provisional permanent registration of the project from the district industries centre.
3. It helps in allotment of industrial plot or shed for the project from state industrial development corporation.
4. It helps the entrepreneur in obtaining working capital loan or term loan from Banks/State Financial Corporation/other financial institution.
5. It helps in securing supply of scarce raw materials required for the product to be manufactured.
6. It helps the entrepreneur in establishing techno economic viability of the project.

Contents of a project report:

1. Objective and scope of the report.
2. Promotor's profile
3. Location
4. Land and Building
5. Plant and Machinery
6. Production Process
7. Other utilities
8. Raw materials
9. Market Potentials
10. Personal
11. Financial Implications
12. Sources of Finances
13. Financial viability of the project
14. Schedule of project implementation.

• **Preliminary Project Report (PPR):** A preliminary project report is a brief summary of a project describing the expected inputs and outputs like finance, manpower, machinery, material, technology, expenses, production, sales and profit etc of a project before the project is actually implemented.

- Detailed Project Report (DPR): Detailed project report is a detailed elaboration of each and every information and estimates mentioned in the preliminary project report while preparations a detailed project report (DPR) the entrepreneur may take the help of experts to do the job preparation of DPR requires a lot of time and hence it is a each and every item is necessary in a D.P.R.

- Project Appraisal: The exercise of project appraisal simply means the assessment of a project in term of its economic technical social and financial viability.

- Need of Project Appraisal: Project appraisal is a costs and benefits analysis of different aspects of proposed projects with an objective to adjudge its viability. A project involves employment of scare resources and entrepreneur needs to appraise various alternative projects before allocating the scare resources for the best project. Thus, project appraisal helps selecting the best project among available alternative projects. For appraising a project its economic, financial technical market managerial and social aspect are analyzed.

- Economic Analysis: The economic aspects of appraisal are functional as they logically precede all other aspects. This is so because the bank will not finance a project unless it stands assured that the project represents high priority use of a region's resources. An economic and social analysis looks at the project from the view pint of the whole economy, asking whether the latter will show benefits sufficiently greather than project costs to justify investment in it. i. Increased employment ii. Increased output iii. Increased services iv. Increased Govt. Revenues v. Higher Earning vi. Improves income distribution vii. Higher standard of living viii. Increased national income

2. Financial Analysis: Finance is one of the most important pre-required to establish an enterprise. It is finance only that facilities an entrepreneur to bring together the labour of one machine of another and raw materials of yet another to combine them to produce goods. An entrepreneur conceives the idea of starting a new enterprise with the ultimate objectives of proposed project are required to be analyzed with the help of various financial statements.

Fixed capital normally called fixed assets are those tangible and material facilities which purchased once are used again and again.

- i. Financial soundness
- ii. Efficient operation
- iii. Cost production
- iv. Return on Investment
- v. Prospects of marketing
- vi. Profitability
- vii. . Effective controls
- viii. Budgeting
- ix. Pricing

3. Technical feasibility: While making project appraisal the technical feasibility of the project also needs to be taken into consideration implies to mean the adequacy of the proposed plant and equipment to produce the product within the prescribed norms. As regards know how it denotes the availability of technical knowledge for the proposed assets and machinery. It should be ensured whether that know how is available with the entrepreneur or is to be procured from elsewhere. If the project requires any collaboration then the terms and conditions of the collaboration should also be spelt and comprehensively and carefully. While assessing the technical feasibility of the project, the following aspects need to be covered in the report.

- a. Process technology

- b. Economic size of the project.
- c. Technical know-how and consultancy

While assessing the technical feasibility of the project, the following aspects need to be covered in the report. a. Process technology

- b. Economic size of the project.
- c. Technical know-how and consultancy

. 4. Managing competence: Managing ability or competences play an important role in making an enterprise a success or otherwise strictly speaking in the absence of managing competences, the project which is otherwise feasible may fail. On the contrary even a poor project may become a successful one with good managerial ability. Hence, while doing project appraisal the managing competence or talent of the promoter should be taken into consideration. Research studies report that most of the enterprises fail because of lack of managerial competence or mismanagement

. 5. Market/Commercial Analysis: Before the production actually starts the entrepreneur needs to anticipate the possible market for the product. He has to anticipate who will be the possible customers for this product and where and when his product will be sold. This is because production has no value for the producer unless it is sold.

### **QUESTIONS**

1. What is a project report?
2. What details are required for preparation of project report?
3. Write short note on
  - I. Preliminary project report
  - II. Detailed project report
  - III. Technical feasibility

## **4. Management Principles**

### **Management:**

Management in all business and organizational activities is the act of getting people together to accomplish desired goals and objectives using available resources efficiently and effectively.

### Principles of Management

There are 14 Principles of Management described by Henri Fayol.

#### **1. Division of Labour**

- Work of all kinds must be divided and allotted to various persons according to their expertise in a particular area.
- Subdivision of work makes it simpler and results in efficiency.
- It also helps in increasing speed, accuracy in performance.
- Specialization leads to efficiency.

#### **2. Party of Authority & Responsibility**

- Authority & responsibility are co-existing.

- If authority is given to a person, he should also be made responsible.
- In a same way, if anyone is made responsible for any job, he should also have concerned authority..

- Authority without responsibility leads to irresponsible.

### 3. Principle of One Boss

- A sub-ordinate should receive orders and be accountable to one and only one boss at a time
- Unity of command provides the enterprise a disciplined, stable & orderly existence.
- It creates harmonious relationship between superiors and sub-ordinates.

### 4. Unity of Direction

- There should be one plan for a group of activities having similar objectives.
- Related activities should be grouped together.
- Efforts of all the members of the organization should be directed towards common goal.
- Without unity of direction, unity of action cannot be achieved.

### 5. Equity

- Equity means combination of fairness, kindness & justice.
- The employees should be treated with kindness & equity.
  - It implies that managers should be fair and impartial.
  - They should give similar treatment to people of similar position.
  - They should not discriminate with respect to age, caste, sex, religion, relation etc.

### 6. Order

- Proper & systematic arrangement of things and people.
- Arrangement of things is called material order and placement of people is called social order.
  - Material order- There should be safe and specific place for every article.
  - Social order- Selection and appointment of most suitable person on the suitable job.

### 7. Discipline

- Discipline means sincerity, obedience, respect of authority & observance of rules and regulations of the enterprise .
- Subordinate should respect their superiors and obey their order.
- It is an important requisite for smooth running of the enterprise.
  - Discipline is not only required on path of subordinates but also on the part of management.

## VIII. Initiative

- Workers should be encouraged to take initiative in the work assigned to them.
- Initiate actions without being asked to do so.
  - Management should provide opportunity to its employees to suggest ideas, experiences& new method of work.
- It helps in developing an atmosphere of trust and understanding.
- They can be encouraged with the help of monetary & non-monetary incentives.

## IX. Fair Remuneration

- Remuneration to be paid to the workers should be fair & rewarding of the efforts.
- It should accord satisfaction to both employer and the employees.
  - Logical & appropriate wage rates.
  - Fayol also recommended provision of other benefits such as free education, medical & residential facilities to workers.

## X. Stability of Tenure

- Employees should not be moved frequently from one job position to another.
- Employees should be appointed after keeping in view principles of recruitment & selection procedure.
- Time is required for an employee to get used to a new work and to succeed. And if he is removed the time, effort and money spent on training the worker will go waste.
- Stability of job creates team spirit and a sense of belongingness.

#### **XI. SCALAR CHAIN**

- Fayol defines scalar chain as The chain of superiors ranging from the ultimate authority to the lowest .
- Every orders, instructions, messages, requests, explanation etc. has to pass through Scalar chain.
- For the sake of convenience & urgency, this path can be cut short and this short cut is known as Gang Plank.
- A Gang Plank is a temporary arrangement between two different points to facilitate quick & easy communication.

#### **XII. Sub-Ordination of Individual Interest to General Interest**

- An organization is much bigger than the individual.
- As far as possible, reconciliation should be achieved between individual and group interests.
- But in case of conflict, individual must sacrifice for bigger interests.

#### **XIII. Espirit De'Corps**

- It refers to team spirit i.e. harmony in the work groups and mutual understanding among the members.
- Spirit De' Corps inspires workers to work harder.
- Fayol cautioned the managers against dividing the employees into competing groups because it might damage the moral of the workers and interest.
- There should be proper co-ordination of work at all levels
- Efficient employees should be rewarded and those who are not up to the mark should be given a chance to improve their performance.

#### **XIV. Centralization & De-Centralization**

- Centralization means concentration of authority at the top level. In other words, centralization is a situation in which top management retains most of the decision making authority.
- Decentralization means disposal of decision making authority to all the levels of the organization. In other words, sharing authority downwards is decentralization. According to Fayol, Degree of centralization or decentralization depends on no. of factors like size of business, experience of superiors, dependability & ability of subordinates etc

### **Functions of management**

#### **Planning**

It is the basic function of management.

- What to do, when to do & how to do.
- It bridges the gap from where we are & where we want to be”.
- It is an intellectual activity and it also helps in avoiding confusion, uncertainties, risks, wastages etc.

#### **Organizing**



It is the process of bringing together physical, financial and human resources and developing productive relationship amongst them achieve goal.

- Identification of activities.
- Classification of grouping of activities.
- Assignment of duties.
- Delegation of authority and creation of responsibility.
- Coordinating authority and responsibility relationships.

### **Staffing**

The main purpose of staffing is to put right man on right job.

- Manpower Planning
- Recruitment, Selection & Placement.
- Training & Development.
- Remuneration.
- Performance Appraisal.
- Promotions & Transfer.

### **4.Directing**

Direction of management which deals directly with influencing, guiding, supervising, motivating subordinate for the achievement of organizational goals. Direction has following elements: Supervision- Implies overseeing the work of subordinates by their superiors. Motivation- Means inspiring, encouraging the sub-ordinates Leadership- Guides the work of subordinates in desired direction. Communications- Is the process of passing information, experience, opinion etc from one person to another.

### **5.Controlling**

The purpose of controlling is to ensure proper progress is being made towards the objectives and goals and to correct any deviation. Therefore controlling has following steps: a. Establishment of standard performance. b. Measurement of actual performance. c. Comparison of actual performance with the standards and finding out deviation if any. d. Corrective action.

### **Level of Management in an organisation**

The three levels of management provide a separation between the managerial positions of the organization. The administrative rank of an organization worker determines the extent of authority, the status enjoyed, and the chain of command that can be controlled by the worker. There are three levels of management found within an organization, where managers at these levels have different roles to perform for the organization to have a smooth performance, and the levels are:

1. Top-Level Management/ Administrative level
2. Middle-Level Management/ Executory
3. Low-level Management/ Supervisory

The levels of Management and Their Functions are Discussed Below:

#### **1. Top Level Management**

Top-Level Management is also referred to as the administrative level. They coordinate services and are keen on planning. The top-level management is made up of the Board of Directors, the Chief Executive Officer (CEO), the Chief Financial Officer (CFO) and the Chief Operating Officer (COO) or the President and the Vice President. The Top-level management controls the management of goals and policies and the ultimate source of authority of the organization. They apply control and coordination of all the activities of the firm as they organize the several departments of the enterprise which would include their budget, techniques, and agendas. Top-level management is accountable to the shareholders for the performance of the organization. There are several functions

performed by the top-level management, but three of them are the most important, and they are: To lay down the policies and objective of the organization Strategizing the plans of the enterprise and aligning competent managers to the departments or middle level to carry them out. Keeping the communication between the enterprise and the outside world

## **2. Middle Level of Management**

READ Features of Organizations 9/25/2020 Three Levels of Management and Their Functions - Management Study HQ There are three levels of management found, Managem... Middle-level Management is also referred to as the executory level, they are subordinates of the top-level management and are responsible for the organization and direction of the low-level management. They account for the top level management for the activities of their departments. The middle-level managers are semi- executives and are made up of the departmental managers and branch manager. They could be divided into senior and junior middle-level management if the organization is big. They coordinate the responsibilities of the sub-unit of the firm and access the efficiency of lower-level managers. The middle-level managers are in charge of the employment and training of the lower levels. They are also the communicators between the top level and the lower level as they transfer information, reports, and other data of the enterprise to the top-level. Apart from these, there are three primary functions of the middle-level management in the organization briefed below: To carry out the plans of the organization according to policies and directives laid down by the top-level management. To organize the division or departmental activities. To be an inspiration or create motivation for junior managers to improve their efficiency.

## **3. Lower Level of Management**

The lower level Management is also referred to as the supervisory or the operative level of managers. They oversee and direct the operative employees. They spend most of their time addressing the functions of the firm, as instructed by the managers above them. The lower-level managers are the first line of managers as they feature at the base of operations, so they are essential personnel that communicates the fundamental found, Managem... problems of the firm to the higher levels. This management level is made up of the foreman, the line boss, the shift boss, the section chief, the head nurse, superintendents, and sergeants. They are the intermediary, they solve issues amidst the workers and are responsible for the maintenance of appropriate relationships within the organization. They are also responsible for training, supervising, and directing the operative employees. The lower level managers represent the management to the operative workers as they ensure discipline and efficiency in the organization. The duty of inspiration and encouragement falls to them, as they strengthened the workforce. They also organize the essential machines, tools, and other materials required by the employees to get their job done.

## **QUESTIONS**

1. Define the term Management.
2. Explain in details about principles of management.
3. What are the functions of management?
4. Briefly explain about levels of management in an organization?

## CHAPTER 5

### **Functional areas of management:**

#### **a) Functions of production are**

- Selection of product and designing.
- Selection of production process.
- Estimation of right production capacity.
- Production planning.
- Production control.
- Quality and cost control.
- Inventory Control.
- Maintenance and replacement of Machines.

#### **Productivity:**

Productivity is **a measure of economic performance that compares the amount of goods and services produced (output) with the amount of inputs used to produce those goods and services.**

#### **Quality Control:**

Quality control (QC) is a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets the requirements of the client or customer.

Production planning and control:

Production planning and control manages and schedules the allocation of human resources, raw materials, work centers, machinery, and production processes. It finds the most efficient way to produce finished goods with the lead times needed to meet production demand.

#### **b) Inventory management:**

Inventory management helps companies identify which and how much stock to order at what time. It tracks inventory from purchase to the sale of goods. The practice identifies and responds to trends to ensure there's always enough stock to fulfill customer orders and proper warning of a shortage.

#### **Models/Techniques of inventory management:**

Three of the most popular inventory control models are Economic Order Quantity (EOQ), Inventory Production Quantity, and ABC Analysis. Each inventory model has a different approach to help you know how much inventory you should have in stock. Which one you decide to use depends on your business.

#### **c) Financial management:**

Functions of financial management:

- Financial Planning and Forecasting. As a part of financial management function, financial managers have to do financial planning.
- Cash Management.
- Estimating Capital Expenses.
- Determining Capital Structure.
- Procurement of Funds.
- Investment of Funds.

- Surplus Disposal.

### **Management of working capital:**

Working capital management ensures the best utilisation of a business's current assets and liabilities for the company's effective operation. The main aim of managing working capital is to monitor a company's assets and liabilities to maintain adequate cash flow and meet short-term business goals.

### **Costing:**

Cost management is the process of planning and controlling the costs associated with running a business. It includes collecting, analyzing and reporting cost information to more effectively budget, forecast and monitor costs.

### **Break even analysis:**

A break-even analysis is a financial calculation that weighs the costs of a new business, service or product against the unit sell price to determine the point at which you will break even. In other words, it reveals the point at which you will have sold enough units to cover all of your costs.

### **Book keeping:**

Bookkeeping is the process of recording your company's financial transactions into organized accounts on a daily basis. It can also refer to the different recording techniques businesses can use. Bookkeeping is an essential part of your accounting process for a few reasons.

### **Journal Entry:**

Journal entries record all transactions for a business. Transactions are broadly defined as any financial activity that impacts the business. They are not limited to the buying and selling of goods and services, but include any exchange of monetary value, such as interest payments, depreciation, expenses, or payroll.

### **Petty Cash:**

A petty cash fund is a small amount of company cash, often kept on hand (e.g., in a locked drawer or box), to pay for minor or incidental expenses, such as office supplies or employee reimbursements.

### **P & L account:**

The purpose of the profit and loss statement, also referred to as the P&L, is to show you, and any investors, whether your small business is profitable. A profit and loss statement displays the company's revenue and expenses, which, when combined, result in the net income.

### **Balance Sheet:**

A balance sheet gives you a snapshot of your company's financial position at a given point in time. Along with an income statement and a cash flow statement, a balance sheet can help business owners evaluate their company's financial standing.

## **d)Marketing Management**

Marketing management is especially important for smaller businesses because **it gives them a level footing to compete with larger players in the field**. Thorough customer research, creative campaigns and marketing strategies and positive branding can go a long way in providing a brand with an edge over its competition.

### **Marketing techniques:**

- 1) Specialization and niche targeting.
- 2) Visible Experts.
- 3) Blogs and articles.
- 4) A lead-generating website.
- 5) Search engine optimization (SEO)
- 6) Speaking engagements.
- 7) Trade show participation.

#### **4Ps:**

Four Ps of marketing is a marketing concept that summarizes the four key factors of any marketing strategy. The four Ps are: **product, price, place, and promotion**

#### **e)Human Resource Management:**

##### **Functions of personnel Management:**

- Recruiting.
- Hiring.
- Determining wages and salaries.
- Administering benefits.
- Providing employee incentives.
- New employee orientation.
- Training and development.
- Performance appraisals.

#### **QUESTIONS**

1. What are the functions of production management?
2. Define Productivity?
3. What are the techniques used for Inventory management?
4. What are the 4Ps of marketing management?
5. State the functions of human resource management?
6. Define Break Even Analysis?

## **CHAPTER 6**

### **Leadership:**

Leadership means **creating and planning, securing resources, and looking out for and improving errors**. Leadership is about motivating people to work together and cooperate with themselves and in some cases, other teams, to achieve a certain goal.

### **Importance of leadership:**

Leadership is important because **it inspires, motivates, and sets an example for people to accomplish positive changes in the world**. Leaders establish a vision, provide a plan of action, and build strong relationships with their followers. As a result, they guide people to accomplish incredible feats together.

### **Qualities of leader:**

- Integrity.
- Delegation.
- Communication.
- Self-Awareness.
- Gratitude.
- Learning Agility.
- Influence.
- Empathy.

### **Functions of leader**

- Setting goals. A leader's most important function is to set goals for team members to encourage them to work confidently and enthusiastically.
- Organising.
- Take initiatives.
- Cooperation among employees.
- Motivation and direction.
- Liaison between workers and management.
- Policy making.

### Leader vs manager:

<b>Basis</b>	<b>Manager</b>	<b>Leader</b>
Origin	A person becomes a manager by virtue of his position.	A person becomes a leader on basis of his personal qualities.
Formal Rights	Manager has got formal rights in an organization because of his status.	Rights are not available to a leader.
Followers	The subordinates are the followers of managers.	The group of employees whom the leaders leads are his followers.
Functions	A manager performs all five functions of management.	Leader influences people to work willingly for group objectives.
Necessity	A manager is very essential to a concern.	A leader is required to create cordial relation between person working in and for organization.
Stability	It is more stable.	Leadership is temporary.
Mutual Relationship	All managers are leaders.	All leaders are not managers.
Accountability	Manager is accountable for self and subordinates behaviour and performance.	Leaders have no well defined accountability.

Concern	A manager's concern is organizational goals.	A leader's concern is group goals and member's satisfaction.
Followers	People follow manager by virtue of job description.	People follow them on voluntary basis.
Role continuation	A manager can continue in office till he performs his duties satisfactorily in congruence with organizational goals.	A leader can maintain his position only through day to day wishes of followers.

### **Motivation:**

Motivation is **the process that initiates, guides, and maintains goal-oriented behaviors**. It is what helps you lose extra weight, for instance, or pushes you to get that promotion at work. In short, motivation causes you to act in a way that gets you closer to your goals.

### **Characterstics:**

**Alignment of aims, purpose and values between staff, teams and organization** is the most fundamental aspect of motivation. The better the alignment and personal association with organizational aims, the better the platform for motivation.

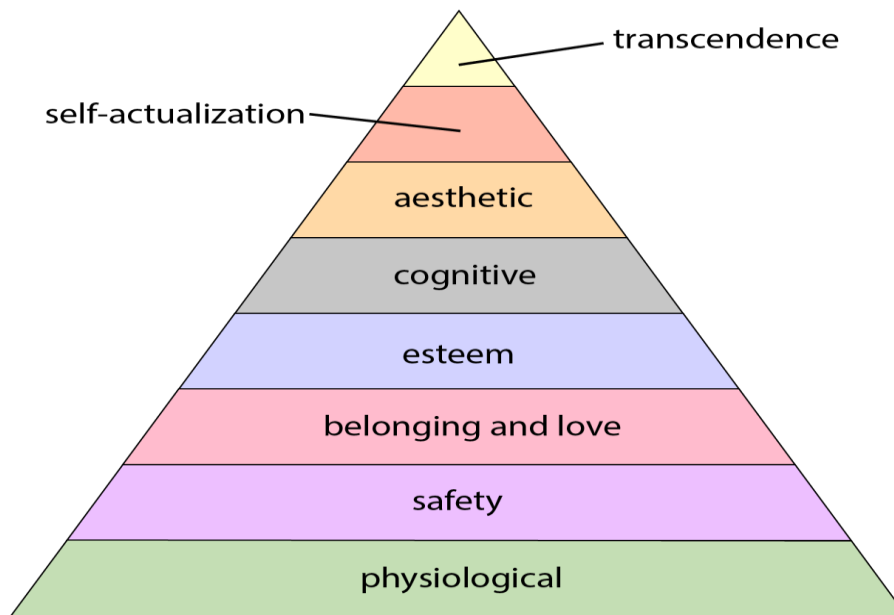
### **Factors affecting motivation:**

- Leadership style.
- Recognition and appreciation.
- Meaning and purpose.
- Positive company culture.
- Professional development opportunities.
- Job advancement opportunities.
- Financial benefits.
- Flexible work schedules.

### **Maslow's hierarchy Needs(pyramid):**

There are five levels in Maslow's pyramid. From the bottom of the hierarchy upwards, the needs are: **physiological (food and clothing), safety (job security), love and belonging needs (friendship), esteem, and self-actualization.**





### **b) Methods of motivation:**

- Make your business a pleasant .
- Be a respectful, honest and supportive manager.
- Offer employee rewards.
- Give them room to grow.
- Share positive feedback.
- Be transparent.
- Offer flexible scheduling.
- Offer food in the workplace.

### **Importance of Communication in organisation.**

- The Basis of Co-ordination.
- Fluent Working.
- The Basis of Decision Making.
- Increases Managerial Efficiency.
- Increases Cooperation and Organizational Peace.
- Boosts Morale of the Employees.

### **Types of communication:**

- Formal communication Being formal, clear and specific is a great way to ensure a proper flow of information in the workplace.
- Informal communication.
- Horizontal communication.
- Vertical communication.

### **Barriers to communication:**

- Dissatisfaction or Disinterest With One's Job.

- Inability to Listen to Others.
- Lack of Transparency & Trust.
- Communication Styles (when they differ)
- Conflicts in the Workplace. ...
- Cultural Differences & Language.

### **QUESTIONS**

1. What is leadership?
2. Explain the qualities and functions of a leader?
3. Differentiate between Leader and manager?
4. What is Motivation?
5. Briefly explain
  - I. The types of communication
  - II. Barriers to communication

## CHAPTER 7

### **Human relationship and performance in organization:**

Human relations refer to the ability to interact in a healthy manner with others and build strong relationships. From the perspective of managers in a company, it involves the process of creating systems and communication channels to enable group employee relationships as well as strong one-on-one relationships. Additionally, it includes the process of training people for specific roles, addressing their needs, resolving conflicts between employees or between management and employees and creating a positive workplace culture.

By developing key human relations skills, managers and employees both can build and maintain stronger relationships within a workforce and maintain a positive work environment. Here are the most critical human relations skills:

The results showed that superior-subordinate relationship have **positive relation with job satisfaction and organization commitment**. The study concluded by showing that strong leader-member exchange led to employee job satisfaction, which may result in improved organizational commitment.

**Maintain discipline among employees.** Maintain good work performance by accepting only quality work from subordinates. Build cooperation and morale among other employees. Be loyal to management and to the company.

Relationship among employee may be of following type:

- Direct Single Relationships:
- Direct Group Relationships:
- Cross-Relationships:

### **Total Quality Management**

**Total Quality management is defined as a continuous effort by the management as well as employees** of a particular organization to ensure long term customer loyalty and customer satisfaction. Remember, one happy and satisfied customer brings ten new customers along with him whereas one disappointed individual will spread bad word of mouth and spoil several of your existing as well as potential customers.

You need to give something extra to your customers to expect loyalty in return. **Quality can be measured in terms of durability, reliability, usage and so on.**

**There are five major steps to TQM, and each are essential to successful implementation.**

- Commitment and Understanding from Employees.
- Quality Improvement Culture.
- Continuous Improvement in Process.
- Focus on Customer Requirements.
- Effective Control.

Accidents:

1. Taking shortcuts
2. Being overconfident
3. Starting a task with Incomplete instructions

4. Poor housekeeping
5. Ignoring procedures
6. Mental distractions from work
7. Failure to pre-plan work

The following steps may be taken to prevent industrial accidents:

- \* Proper Safety Measures
  - \* Proper Selection
  - \* Safety Conscious
- \* Enforcement of Discipline
- \* Incentive
- \* Safety Committees
- \* Proper maintenance of Machines and Equipment
- \* **Safety Training etc.**

## **GENERAL SAFETY RULES**

### A. Introduction:

1. The following general safety rules are to be followed by all applicable departments.

### B. Responsibilities:

1. Environmental Health and Safety Department:
  - a. Develop and implement all general safety rules to be followed by employees.
  - b. Evaluate the general safety rules annually or as needed to ensure they are up to date.
  - c. Be a resource for any employee with questions on general safety rules.
  - d. Create and implement training programs for general safety rules.
2. Manager's, Supervisor's, and Department Heads:
  - a. Abide by all general safety rules set forth in the Safety Manual.
  - b. Ensure all employees are attending training sessions as required.
  - c. Guarantee that employees are following all general safety rules and provide disciplinary action when necessary if they are not.
3. Employees:
  - a. Abide by all general safety rules set forth in the Safety Manual.

b. Attend any training sessions online or in the classroom as required by your supervisor or the EHS department.

c. Provide any additional items that may need to be addressed under general safety rules.

C. Policies, Practices, and Procedures:

1. General Safety Rules:

a. Observe and abide all warning signs and safety notices.

b. Smoking is prohibited everywhere on UNE property. UNE is now a smoke-free facility.

c. No running or horseplay is allowed in the workplace.

d. Guard all floor openings and edge of working platforms greater than 3 feet to prevent a fall.

e. Do not take unsafe short cuts or by-pass any safety devices or controls.

f. Never throw debris, tools or other objects from any height.

g. Report all unsafe acts, unsafe conditions or incidents/accidents to your supervisors and safety personnel.

h. Refer to Safety Data Sheet (SDS) before handling any hazardous materials.

i. For any hazardous work, safe operating procedure/safe work procedures must be referred and adhered to.

j. Label all chemical containers and store them in designated chemical storage area.

k. Do not deface or change any manufacturer's labels on incoming chemicals or industrial products.

l. Know the location of the nearest emergency equipment including fire extinguishers, fire alarms, fire blankets, eye wash stations, safety showers, AED's, etc.

m. Familiarize yourself with the emergency evacuation procedure and the location of the nearest exits and muster points. A list of muster point locations for each building can be found in UNE's Annual Clery Report on the Safety and Security portion of the UNE website.

n. Do not obstruct or block any exits, escape passage way or any emergency response equipment.

o. Follow the manufacturer's operating instructions when working with machinery.

p. Report all work related illness and injuries right away and submit an accident report.

## 2. General Tool and Device Safety:

The employer is responsible for the safe condition of tools and equipment used by employees but the employees have the responsibility for properly using and maintaining tools.

a. All electrical tools will be in good repair.

b. Saw blades, knives, or other tools should be directed away from aisle areas and other employees working in close proximity. Knives and scissors must be sharp. Dull tools can be more hazardous than sharp ones.

c. Appropriate personal protective equipment, e.g., safety goggles, gloves, etc., should be worn due to hazards that may be encountered while using portable power tools and hand tools.

d. Floors should be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

e. Keep all tools in good condition with regular maintenance.

PPE means personal protective equipment or equipment you use to guarantee your (own) safety.

Use PPE always and anywhere where necessary. Observe the instructions for use, maintain them well and check regularly if they still offer sufficient protection. But when do you use what type of protection?

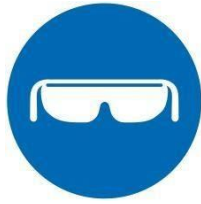
**These 7 tips will help you on your way.**

### 1. SAFETY FOR THE HEAD



Wearing a **helmet** offers protection and can prevent head injuries. Select a sturdy helmet that is adapted to the working conditions. These days you can find many elegant designs and you can choose extra options such as an adjustable interior harness and comfortable sweatbands.

### 2. PROTECT YOUR EYES



The eyes are the most complex and fragile parts of our body. Each day, more than 600 people worldwide sustain eye injuries during their work. Thanks to a good pair of **safety glasses**, these injuries could be prevented. Do you come into contact with bright light or infrared radiation? Then **welding goggles or a shield** offer the ideal protection!

### 3. HEARING PROTECTION



Do you work in an environment with high sound levels? In that case it is very important to consider hearing protection. **Earplugs** are very comfortable, but earmuffs are convenient on the work floor as you can quickly put these on or take them off.

### 4. MAINTAIN A GOOD RESPIRATION



Wearing a **mask** at work is no luxury, definitely not when coming into contact with hazardous materials. 15% of the employees within the EU inhale vapours, smoke, powder or dust while performing their job. **Dust masks** offer protection against fine dust and other dangerous particles. If the materials are truly toxic, use a **full-face mask**. This adheres tightly to the face, to protect the nose and mouth against harmful pollution.

### 5. PROTECT YOUR HANDS WITH THE RIGHT GLOVES



Hands and fingers are often injured, so it is vital to protect them properly. Depending on

the sector you work in, you can choose from gloves for **different applications**:

- protection against vibrations
- protection against cuts
- by sharp materials
- protection against cold or heat
- protection against bacteriological risks
- protection against splashes from diluted chemicals.

## 6. PROTECTION FOR THE FEET



Even your feet need solid protection. **Safety shoes** (type Sb, S1, S2 or S3) **and boots** (type S4 or S5) are the ideal solution to protect the feet against heavy weights. An **antiskid sole** is useful when working in a damp environment, definitely if you know that 16,2% of all industrial accidents are caused by tripping or sliding. On slippery surfaces, such as snow and ice, **shoe claws** are recommended. Special socks can provide extra comfort.

## 7. WEAR THE CORRECT WORK CLOTHING



Preventing accidents is crucial in a crowded workshop. That is why a good visibility at work is a must: a **high-visibility jacket and pants made of a strong fabric** can help prevent accidents. Just like the hand protection, there are versions for different applications.

### WORST-CASE SCENARIO

Prevention is better than cure. A smart thing is to be prepared for the worst. A **classic first-aid kit** is no luxury but a **first-aid kit for the eyes** can also be an essential first aid. If the employee comes into contact with chemicals, a **safety shower** is mandatory, so that he can rinse the substances off his body at any moment.



### PREVENTING ACCIDENTS: PICTOGRAMS

Not only is preparing your workshop for accidents a smart thing to do, it is even smarter to organise your workshop in such a way that no serious accidents can take place. A simple way to make your workshop safer is to use pictograms: indicating flammable materials, the necessary



use of hearing protection, indicating emergency exits ...

You can find all pictograms in the '[Labels & decals](#)' catalogue under 'Safety'.

### **QUESTIONS**

1. What is Total quality management?
2. Explain the general safety rules for accidents ?

## 8. LEGISLATION

### Intellectual property right (IPR)

Intellectual Property Rights in general refers to the set of intangible assets including invention, creation, and contribution to the contemporaneous field of knowledge which is owned and legally protected by an individual or company from the outside use or implementation without approved consent.

### Types of Intellectual Property

- Patents
- Trademarks
- Copyrights

#### Patents:

Patent is an intellectual property right, to make, use or sell an invention for a limited period of 20 years. A Patent is granted to an entity on disclosing a technical invention, which may be a product (system/apparatus/device) or process (method/manufacturing) or both, which is novel or new and demonstrate inventive step or technological advancement over the existing technologies.

#### Trademarks:

A trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks are protected by intellectual property rights

In principle, a trademark registration will confer an exclusive right to the use of the registered trademark. This implies that the trademark can be exclusively used by its owner, or licensed to another party for use in return for payment. Registration provides legal certainty and reinforces the position of the right holder, for example, in case of litigation.

#### Copyrights:

The word copyright is a mixture of two words – ‘copy’ and ‘right’. To be more precise copyright means ‘right to copy’, wherein only the creator or his authorised person has a right to reproduce a work. In simple words, a legal right which is possessed by the owner of [Intellectual property](#) is a copyright.

### Salient Features of the Factories Act, 1948

#### 1. OBJECTIVE

The main objective of the Act is to ensure adequate safety measures and promote health and welfare of the workers employed in factories as well as to prevent haphazard growth of factories. The Factories Act is meant to provide protection to the workers from being exploited and also provides for improvement of the working conditions within the factory premises.

## 2. COVERAGE OF THE ACT

The coverage of the Act is confined to the: -

- factories using power and employing 10 or more workers on any working day of the preceding twelve months;
- factories not using power and employing 20 or more workers on any working day of the preceding twelve months; and the
- factories specially notified under Section 85 of the Factories Act by the State Govts./Union Territories.

## 3. IMPORTANT CONCEPTS AND DEFINITIONS

(a) **Factory** means any premises including the precincts thereof:-

- i) wherein ten or more workers are working, or were working on any day of the preceding twelve months and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or
- ii) wherein twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on.

(b) **Worker** means a person (employed directly or through any agency including a contractor) with or without the knowledge of the principal employer, whether for remuneration or not in any manufacturing process, or in cleaning any part of the machinery or premises used for a manufacturing process, or in any kind of work incidental to or connected with the manufacturing process, or the subject of manufacturing process (but does not include any member of the armed forces of the Union).

(c) **Manufacturing process** means any process for: -

- i) Making, altering, repairing, ornamenting, finishing, packing, oiling, washing, cleaning, breaking up, demolishing or otherwise treating or adapting any article or substance with a view to its use, sale, transport, delivery or disposal or
- ii) Pumping oil, water, sewage or any other substance or
- iii) Generating, transforming or transmitting power or
- iv) Composing types for printing, printing by letter press, lithography, photogravure or other similar process or book binding,
- v) Constructing, reconstructing, repairing, refitting, finishing or breaking up ships or vessels,
- vi) Preserving or storing any article in cold storage.

(d) **Hazardous Process** means any process or activity in relation to an industry

specified in the First Schedule where, unless special care is taken, raw materials used therein or the intermediate or finished products, by-products, wastes or effluents thereof would cause material impairment of the health of the persons engaged in or connected therewith, or results in the pollution of the general environment, provided that the State Government may, by notification in the Official Gazette, amend the First Schedule by way of addition, omission or variation of any industry specified in the said Schedule.

(e) **Fatal Injury** means injury resulting from industrial accident which caused death to the worker.

(f) **Non-Fatal Injury** means injury resulting from industrial accident, which prevented injured worker from attending to work for a period of 48 hours or more immediately following the injuries.

(g) **Adult** means a person who has completed his eighteenth year of age.

(h) **Adolescent** means a person who has completed his fifteenth year of age but has not completed his eighteenth year.

(i) **Child** means a person who has not completed his fifteenth year of age.

(j) **Average Daily Number of Workers Employed** The average daily number of workers employed is calculated by dividing the aggregate number of attendances on all the working days (that is, mandays worked) by the number of working days in the year. Attendance on separate shifts (e.g. night and day shifts) should be counted separately. Days on which the factory was closed for whatever cause and days on which the manufacturing process was not carried on should not be treated as working days. Partial attendance for less than half a shift on a working day should be ignored, while attendance for half a shift or more on such day should be treated as full attendance.

(k) **Mandays Worked** Mandays Worked means total number of attendances during a calendar year.

(l) **Average Number of Hours Worked per week** The Average number of hours worked per week means the total actual hours worked by all workers during the year excluding the rest intervals but including overtime worked divided by the product of average number of workers employed daily in the factory and 52 weeks or  
$$\text{Average number of hours worked per week} = \frac{\text{total number of man hours worked}}{\text{number of weeks in which production process has taken place.}}$$
\* average number of workers employed daily. In case the factory has not worked for the whole year, the number of weeks during which the factory worked should be used in place of 52

## THE PAYMENT OF WAGES ACT, 1936

(m) [ACT 4 OF 1936]

(n) [23rd April, 1936]

(o) An Act to regulate the payment of wages of certain classes of 1[employed persons].

(p) Whereas it is expedient to regulate the payment of wages to certain classes of [employed persons];

(q) It is hereby enacted as follows:-

(r) Short title, extent, commencement and application.- (1) This Act may be called the Payment of Wages Act, 1936.

(s) 2[(2) It extends to the whole of India 3[\*\*\*].]

(t) It shall come into force on such date 4as the Central Government may, by notification in the Official Gazette, appoint.

(u) It applies in the first instance to the payment of wages to persons employed in any 5[factory, to persons] employed (otherwise than in a factory) upon any railway by a railway administration or, either directly or through a sub-contractor, by a person fulfilling a contract with a railway administration, 6[and to persons employed in an industrial or other establishment specified in sub- clauses (a) to (g) of clause (ii) of Section 2].

(v) The 7[Appropriate Government] may, after giving three months' notice of its intention of so doing, by notification in the Official Gazette, extend the provisions of 8[this Act or any of them to the payment of wages to any class of persons employed in 9[any establishment or class of establishments specified by the Central Government or a State Government under sub-clause (h) of clause (ii) of section 2.]

**Responsibility for payment of wages.-** Every employer shall be responsible for the payment of all wages required to be paid under this Act to persons employed by him and in case of persons employed,--

(a) in factories, if a person has been named as the manager of the factory under [clause (f) of sub-section (1) of Section 7 of the Factories Act, 1948 (63 of 1948)];

[(b) in industrial or other establishments, if there is a person responsible to the employer for the supervision and control of the industrial or other establishments;]

(c) upon railways (otherwise than in factories) if the employer is the railway administration and the railway administration has nominated a person in this behalf for the local area concerned.

(d) in the case of contractor, a person designated by such contractor who is directly under his charge; and

(e) in any other case, a person designated by the employer, the person so nominated or the person so designated, as the case may be, shall be responsible for such payment.

(1) Notwithstanding anything contained in sub-section (1), it shall be the responsibility of the employer to make payment of all wages required to be made under this Act in case the contractor or the person designated by the employer fails to make such payment.]

**4. Fixation of wage-periods.-** Every person responsible for the payment of wages under Section 3 shall fix periods (in this Act referred to as wage-periods) in respect of which such wages shall be payable.

(2) No wage-period shall exceed one month.

**5. Time of payment of wages.-** (1) The wages of every person employed

upon or in -

- (a) any railway, factory or <sup>4</sup>[industrial or other establishment] upon or in which less than one thousand persons are employed, shall be paid before the expiry of the seventh day.

**6. Deductions for absence from duty.-** (1) Deductions may be made under clause (b) of sub-section (2) of Section 7 only on account of the absence of an employed person from the place or places where, by the terms of his employment, he is required to work, such absence being for the whole or any part of the period during which he is so required to work.

(2) The amount of such deduction shall in no case bear to the wages payable to the employed person in respect of the wage-period for which the deduction is made a larger proportion than the period for which he was absent bears to the total period, within such wage-period, during which by the terms of his employment, he was required to work:

Provided that, subject to any rules made in this behalf by <sup>5</sup>[the appropriate Government], if ten or more employed persons acting in concert, absent themselves without due notice (that is to say without giving the notice which is required under the terms of their contracts of employment) and without reasonable cause, such deduction from any such person may include such

#### QUESTIONS

1. Define IPR?
2. Write short note on
  - I. Patent
  - II. Trademark
  - III. Copyright
3. What are the features of payment of Wages act 1936?

## **CHAPTER 9**

### **SMART TECHNOLOGY**

#### **Introduction to Components of IoT**

With the increasing bandwidth availability and cheap hardware cost, IoT is changing the industry landscapes in scale. From medical, construction, governance to Insurance, BFS the use cases of IoT are spreading day by day. The IT spending of multinational corporations, banks, and other institutes are also increasing along with all these developments. Though the hardware, software and infrastructure requirements of Industry grade IoT differ from domain to domain, the basic components remain the same. In this article, we will discuss the standard components of an IoT system.

#### **Key Components of IoT**

We can list down the below components as key parts of an IoT ecosystem.

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#### **1. Sensors or End Devices**

For any IoT use case, the components of the endpoint are sensors. Sensors capture electric pulse or analog signals which are passed through the IoT ecosystems. Based on the use case and domains RFID, temperature sensors, light sensors, electromagnetic sensors, etc. are

used. For example,

smartphones and smart wearables are equipped with sensors like accelerometer, Gyroscope sensors, etc. Data obtained from these IoT endpoints can be used in various domains like Humanactivity recognition, medical stability, etc. Based on the use case and precision requirements

sensors can be chosen keeping the following parameters in mind

- ◆ Accuracy of the input readings
- ◆ Reliability percentage of the inputs
- ◆ The purpose of the use case, for example, sensors required for a temperature-dependent use case, will differ from use cases based on motions.
- ◆ Industry grade IoT systems can be integrated with multi-technology, cross-functional and cross-vendor products. Based on the complexity and compatibility sensors are chosen for a particular use case.

## **2. Network or Connectivity Layer**

In a typical IoT ecosystem, sensors are connected with computation layers and intelligent layers via network or connectivity layers. IoT endpoints need to be always connected with various other components seamlessly over the connectivity layer. Based on the scale of the implementations IoT components can be connected over LANs, MANs or WANs. It can also be connected through

telephony networks like LTE (Long Term Evolution or popularly known as 4G Network) or light-based technologies like Li-Fi (where light is used as a mode of communication to maintain interconnections). For local use cases, Bluetooth and Wi-Fi can also be used.

An IoT network consists of various network components like routers, gateways, switches, various

network protocols, etc. Based on the use case and domain proper network infrastructure is needed to be chosen.

## **3. Security Layers**

The heart of any industry-grade IoT user story is 'data'. In a standard use case, analog or



digital signal is acquired by sensors and the signal is then converted to a format on top of which AI/ML

components can work. In the total flow of data, proper security systems and methodologies need to be enforced. The data can be compromised in any layers starting from the data acquisition to

business insights derivations. We can enforce proper security by using strong encryption in various layers of communication, using proper firmware and anti-malware systems, etc.

- ◆ **Intelligence:** This will be essential for smart product
  
- ◆ **Connectivity:** This feature will be responsible for network accessibility and compatibility features of the devices and hence one of the prime characteristics.
  
- ◆ **Sensing:** Like collecting the information basing the retrieval capacity and providing it for intelligent decision
  
- ◆ **Expressing:** This will enable interactivity with humans and the world.
  
- ◆ **Energy:** Without this, there will not be the creation of our devices. Energy harvesting and proper infrastructure to charge and all will be important features for our IoT devices
  
- ◆ **Safety:** The prime feature on which the customer rely and use the product. Hence no compromise on this is allowed and all the details need to be checked and validated. For some feature, if you see there are even government regulations as well.

### **Benefits of IoT Technology**

There are many benefits of IoT technology which is a niche technology and some of them are listed below:

**1. Business Opportunity:** There will be enhanced opportunities for the business with IoT and new revenue tracks can be easily developed. IoT driven products and innovations will be an asset to the organization.

**2. Enhanced and Efficient Asset Utilisation:** with IoT, there will be improved tracking of the assets and efficient products can be achieved on a real-time basis.

**3. Enhance Device Communication:** Establishing the interaction between machines will be boom and IoT will one step further in this process.

**4. Automation and Control:** IoT with its device interaction and connectivity strives towards achieving automation with minimal or no human intervention since machines can lead to a faster and timely output.

**5. Time-Saving and Efficiency:** IoT which uses the machine to machine interaction will help us to utilize human time efficiently and also the work gets faster results which will define its efficiency.

The IoT is a complex system with a number of characteristics. Its characteristics vary from one

domain to another. Some of the general and key characteristics identified during the research study are as follows:

### **1. Intelligence**

IoT comes with the combination of algorithms and computation, software & hardware that makes it smart. Ambient intelligence in IoT enhances its capabilities which facilitate the things to respond in an intelligent way to a particular situation and supports them in carrying out specific tasks. In spite of all the popularity of smart technologies, intelligence in IoT is only concerned as means of interaction between devices, while user and device interaction is achieved by standard input methods and graphical user interface.

### **2. Connectivity**

Connectivity empowers Internet of Things by bringing together everyday objects. Connectivity of these objects is pivotal because simple object level interactions contribute towards collective intelligence in IoT network. It enables network accessibility and compatibility in the things. With this connectivity, new market opportunities for Internet of things can be created by the networking of smart things and applications.

### **3. Dynamic Nature**

The primary activity of Internet of Things is to collect data from its environment, this is achieved with the dynamic changes that take place around the devices. The state of these devices changes dynamically, example sleeping and waking up, connected and/or disconnected as well as the context of devices including temperature, location and speed. In addition to the state of the device, the number of devices also changes dynamically with a person, place and time.

### **4. Enormous scale**

The number of devices that need to be managed and that communicate with each other will be much larger than the devices connected to the current Internet. The management of data

generated from these devices and their interpretation for application purposes becomes more critical. Gartner (2015) confirms the enormous scale of IoT in the estimated report where it stated that 5.5 million new things will get connected every day and 6.4 billion connected things will be in use worldwide in 2016, which is up by 30 percent from 2015. The report also forecasts that the number of connected devices will reach 20.8 billion by 2020.

### **5. Sensing**

IoT wouldn't be possible without sensors which will detect or measure any changes in the environment to generate data that can report on their status or even interact with the environment.

Sensing technologies provide the means to create capabilities that reflect a true awareness of the physical world and the people in it. The sensing information is simply the analogue input from the physical world, but it can provide the rich understanding of our complex world.

### **QUESTIONS**

1. Define IOT?
2. Briefly explain the component of Internet of things?
3. What are the applications of IOT in day to day life?