

**ENTREPRENEURSHIP AND MANAGEMENT & SMART
TECHNOLOGY
SEMESTER-5TH
DEPARTMENT OF ELECTRICAL ENGINEERING**



**Lecture notes
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**GOVT. POLYTECHNIC
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UNIT-1

Concept/Meaning 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.

Entrepreneurship is the process of developing, organizing, and running a new business to generate profit while taking on financial risk.

Need of Entrepreneurship

Entrepreneurship usually plays a key part in contributing to the country's national economy by generating wealth and paying taxes, which generally adds to a country's gross domestic product (GDP). Entrepreneurs not only invest their own money, but they also draw money from the market.

Characteristics and Qualities of Entrepreneurship

1) Creativity:

Creativity gives birth to something new. For without creativity, there is no innovation possible. Entrepreneurs usually have the knack to pin down a lot of ideas and act on them. Not necessarily every idea might be a hit. But the experience obtained is gold.

Creativity helps in coming up with new solutions for the problems at hand and allows one to think of solutions that are out of the box.

2) Professionalism:

Professionalism is a quality which all good entrepreneurs must possess. An entrepreneur's behavior with their employees goes a long way in developing the culture of the organization.

Along with professionalism comes reliability and discipline. Self-discipline enables an entrepreneur to achieve their targets, be organized and set an example for everyone.

3) Risk-taking:

A risk-taking ability is essential for an entrepreneur. Without the will to explore the unknown, one cannot discover something unique. And this uniqueness might make all the difference. Risk-taking involves a lot of things. Using unorthodox methods is also a risk. Investing in ideas, nobody else believes in but you is a risk too.

Entrepreneurs have a differentiated approach towards risks. Good entrepreneurs are always ready to invest their time and money. But, they always have a backup for every risk they take.

4) Passion:

Your work should be your passion. So when you work, you enjoy what you're doing and stay highly motivated. Passion acts as a driving force, with which, you are motivated to strive for better.

It also allows you the ability to put in those extra hours in the office which can or may make a difference..

5) Planning:

Perhaps, this is the most important of all steps required to run a show. Without planning, everything would be a loose string as they say, "If you fail to plan, you plan to fail."

Planning is strategizing the whole game ahead of time. It basically sums up all the resources at hand and enables you to come up with a structure and a thought process for how to reach your goal.

6) Knowledge:

Knowledge is the key to success. An entrepreneur should possess complete knowledge of his industry. For only with knowledge can a difficulty be solved or a crisis is tackled. It enables him to keep track of the developments and the constantly changing requirements of the market that he is in.

7) Social Skills:

A skill set is an arsenal with which an entrepreneur makes his business work. Social Skills are also needed to be a good entrepreneur. Overall, these make up the qualities required for an entrepreneur to function.

Social Skills involve the following:

- Relationship Building
- Hiring and Talent Sourcing
- Team Strategy Formulation

8) Open-mindedness towards learning, people, and even failure:

An entrepreneur must be accepting. The true realization of which scenario or event can be a useful opportunity is necessary. To recognize such openings, an open-minded attitude is required.

An entrepreneur should be determined. He should face his losses with a positive attitude and his wins, humbly.

Types of Entrepreneurship

01. Small business entrepreneurship

This type of entrepreneurship refers to any kind of small business that has been created by one person, without the goal to expand or franchise. For example, if you were planning to open a nail salon or a general store your goal would be to launch a single store. You'd likely plan on hiring local employees or even family members to get your business off the ground and would need to invest your resources directly into the business.

02. Scalable startup entrepreneurship

Rooted in the idea of changing the world, scalable startups focus on how to create a business model that is both repeatable and scalable (more sales with more resources). From the get go, this style of entrepreneurship begins with the hope of rapid expansion and big profit returns. Amazon, Google and Apple are all examples of startups that have changed the world.

03. Intrapreneurship

Unlike an entrepreneur, who is also the founder, designer and manager of a business, an intrapreneur is a self-motivated, and action-oriented employee who thinks out of the box and works as an entrepreneur within a company. Intrapreneurship is a way that companies can support and encourage employees that have entrepreneurial spirit.

04. Large company entrepreneurship

Large company entrepreneurship refers to companies like Disney, Google, Toyota, and Microsoft who have finite life cycles, as in, they keep innovating and offering consumers new products that are variants around their core product-line.

06. Innovative entrepreneurship

Innovative entrepreneurs, as the name suggests, are constantly trying to come up with the next big thing. If you have groundbreaking ideas of how to start a business or specific services and products that can become business ventures, you might be an innovative entrepreneur.

07. Buyer entrepreneurship

You've probably heard the saying "money makes money", and for a buyer entrepreneur this definitely rings true. Instead of figuring out how to raise money for a business, a buyer entrepreneur purchases either a developing or well-established company and helps them thrive.

10. Social Entrepreneurship

Social entrepreneurs are innovators whose main goal is to create products and services that both benefit the world, and make money. Social entrepreneurship relates to nonprofit, for-profit, or hybrid companies that are committed to social or environmental change. Some examples include educational programs, microfinance institutions, and companies that provide banking services in undeveloped countries.

MANAGER Vs ENTREPRENEUR

The terms entrepreneur and manager are considered one and the same. But the two terms have different meanings.

Manager is a person who is responsible for performing the functions of management such as planning, organizing and directing the group towards the goals of management. Entrepreneur is also a person who starts the business and utilizes the resources of men, money, materials and machines.

The difference between entrepreneur and manager is given in the following Table.

Sl.No.	Criteria	Entrepreneur	Manager
1	Motive	The main motive of an entrepreneur is to start a venture by setting up an enterprise. He understands the venture for his personal gratification.	But the main motive of a manager is to render his services in an enterprise already set up by someone else i.e. entrepreneur.
2	Status	An entrepreneur is the owner of the enterprise.	A manager is the servant in the enterprise owned by the entrepreneur.
3	Risk Bearing	An entrepreneur being the owner of the enterprise assumes all risks and uncertainty involved in running the enterprise.	A manager as a servant does not bear any risk involved in the enterprise.
4	Rewards	The reward an entrepreneur gets for bearing risks involved in the enterprise is profit which is highly uncertain.	A manager gets salary as reward for the services rendered by him in the enterprise. Salary of a manager is certain and fixed.
5	Innovation	Entrepreneur himself thinks over what and how to produce goods to meet the changing demands of the customers. Hence, he acts as an innovator also called a 'change agent'	But, what a manager does is simply to execute the plans prepared by the entrepreneur. Thus, a manager simply translates the entrepreneur's ideas into practice.
6	Qualification	An entrepreneur needs to possess qualities and qualifications like high achievement motive, originality in thinking, foresight, risk-bearing ability and so on.	On the contrary, a manager needs to possess distinct qualifications in terms of sound knowledge in management theory and practice

Functions of an Entrepreneur –

1. To Prepare Plan:

The first and foremost function of an entrepreneur is to prepare the plan or scheme of production i. e. the scale of production, types of goods to be produced and its quantity.

2. Selection of the Site:

The entrepreneur makes the selection of the site for the factory to be installed. The place should be near the market, railway station or bus stand. The selection of the place may be near the source of raw materials also. The selection of the place has an important bearing on the cost of production.

3. Provision of Capital:

Capital is required to install a factory or an industry. Capital is required at all the stages of business. It is not necessary that the entrepreneur should invest his own capital. Therefore, he has to trace out a capitalist, to make provision for capital for the investment. He tries to obtain capital at the lowest possible rate of interest.

4. Provision of Land:

After making provision of capital and selection of site, he has to arrange for land. Land is either purchased or hired.

5. Provision of Labour:

In modern times; different types of labour are required to produce one type of commodity. The entrepreneur has to make provision for labour from different places.

6. Purchase of Machines and Tools:

It is the function of the entrepreneur to purchase machines and tools in order to start and continue the production.

7. Provision of Raw Materials:

It is the entrepreneur who makes provision for raw materials. He purchases the best quality of raw materials at the minimum cost. He also knows the sources of raw materials.

8. Co-Ordination of the Factors of Production:

One of the main functions of the entrepreneur is to coordinate different factors of production in proper combinations, so that the cost of production is reduced to the minimum.

9. Division of Labour:

The splitting up of production into different parts and entrusting them to different workers is also the function of an entrepreneur. Thus, the entrepreneur decides the level and type of division of labour.

10. Quality of Product:

Keeping in view the competition in the market, the entrepreneur has to determine the quality of his product. He is to decide whether the goods produced should be of superior quality only or both of superior and ordinary qualities.

11. Sale of Goods:

The responsibility of the entrepreneur is not only to produce goods but also to sell his produce. He employs a good number of salesmen to market the goods. He makes arrangement for publicity to push up the sales. He adopts both informative and persuasive methods to achieve his goal.

12. Advertisement:

It is the duty of an entrepreneur to do advertisement explaining the superiority and quality of his goods through newspapers, magazines, radio, TV, etc. Advertisement is done to create and increase the demand or sale of his goods.

13. Search for Markets:

The entrepreneur has to explore markets for his products. He produces goods in accordance with the consumers' tastes which can be known from market trends.

14. Supervision:

One of the main jobs of an entrepreneur is to supervise all the factors engaged production process. He has to supervise every little detail so as to ensure maximum production and economy.

15. Contact with the Government:

The entrepreneur has to make contacts with the government because the modern production system is controlled by the government in several ways. A licence is taken before the start of production. The entrepreneur has to abide by certain rules and regulations of production and has to pay taxes regularly.

16. Quantity of Production:

The entrepreneur determines the quantity of production keeping in view the demand for goods and the extent of market. How much goods are to be produced is the main decision taken by the entrepreneur.

17. Risk-Taking:

Risk-taking is the most important function of an entrepreneur. He has to pay to all the other factors of production in advance. There are chances that he may be rewarded with a handsome profit or he may suffer a heavy loss. Therefore, the risk-bearing is the final responsibility of an entrepreneur.

18. Innovation:

Innovation plays an important role in modern business. The entrepreneur makes arrangements for introducing innovations which help in increasing production on the one hand and reducing costs on the other. Innovations may take the form of the introduction of new methods in the process of production or introducing improvements in the existing methods.

Barriers to Entrepreneurship:

#1 Finances

We are all bustling with ideas that are unique and can make for an amazing business start-up. But no matter how good your idea is, you will always need stable finances and funding from the investors to begin the process and take the first step towards your journey of entrepreneurship.

#2 Fear of not to be a success

We all go through the fear of failure. And if the fear is associated with the risks and stakes taken in the stream of business and entrepreneurship, the level of fear elevates. There is a fear if we are on the right track, is the idea worthwhile, will there be profit, will I find investors, and various such fears and tensions act as the Barriers to Entrepreneurship.

#3 No strategic plan in place

Lack of proper planning and strategy in place is one of the most common Barriers to Entrepreneurship. Many of us think to build a business out of a hobby without having any sort of long term and short term vision and plan in mind. Running a fully-fledged business or being an entrepreneur requires a huge amount of skill set, passion for excelling, strategic vision, the mission to accomplish the goals, market research, and a lot more.

#4 Human resource issues

Entrepreneurs cannot handle and run a business alone by themselves. We require the support of human resource to carve a niche in the market. Employees with the required knowledge, expertise, and experience are needed for the efficiency of the business processes and high levels of productivity.

#5 Stringent rules and regulations of the market

It is not very easy for entrepreneurs to enter the new market as there are quite many rules and regulations imposed by the government authorities. Plus there are various laws and compliances to be adhered to such as taxation, environmental regulations, licenses, property rights, and much more than act as the Barriers to Entrepreneurship.

#6 Fewer opportunities

Even though there is a lot of talent pool in the market with the aspiring entrepreneurs buzzing with the ideas, but the opportunities presented to them are quite less and fewer. Reasons such as nepotism and corruption act as the Barriers to Entrepreneurship with not many vital and lucrative opportunities.

#7 Lack of capacity

Even if there are opportunities presented to the aspiring entrepreneurs, there is a lack of capacity in some them to embrace the opportunities with open arms. The reasons can vary from lack of knowledge, lack of education, lack of willingness, lack of strategic knowledge, and cultural hindrances amongst others; but the factor of motivation and zeal gets missing. To start a new business venture amidst all the risks and market-related issues, it requires a lot of hard work, passion, and high capacity to handle all of it.

#8 Less market experience

The experts always mention that one should never rush in setting up a business. It is quite necessary to gain a relative amount of work experience by working in the industry domain or sector of choice and as per the education levels. It also helps to sharpen the required expertise and find the ground in the career graph. Once the person is ready to take risks and have a relative amount of market exposure, he is ready to take the entrepreneurial plunge.

#9 Lack of risk-taking capacity

It is always said that entrepreneurs never sail in safe waters and are never confined to their comfort zones. Lack of risk-taking capacity is the psychological mindset and perspective towards the business and acts as one of the major Barriers to Entrepreneurship. The budding entrepreneur has to have a structured and organized approach towards the various business elements and should risks rather than averting them.

#10 Inadequate training

With no proper education, development, training, entrepreneurial skills, and technical know-how acts as the Barriers to Entrepreneurship.

#11 Lack of practical knowledge

Having a strong educational background is just not enough to pursue business as it requires practical knowledge as well to stay relevant amidst the various market cycles. And many entrepreneurs lack practical knowledge.

FORMS OF BUSINESS OWNERSHIP

1.Sole Proprietorships

The vast majority of small business start out as sole proprietorships. These firms are owned by one person, usually the individual who has day-to-day responsibility for running the business. Sole proprietors own all the assets of the business and the profits generated by it. They also assume complete responsibility for any of its liabilities or debts. In the eyes of the law and the public, you are one in the same with the business.

Advantages of a Sole Proprietorship

- Easiest and least expensive form of ownership to organize.
- Sole proprietors are in complete control, and within the parameters of the law, may make decisions as they see fit.
- Sole proprietors receive all income generated by the business to keep or reinvest.
- Profits from the business flow-through directly to the owner's personal tax return.
- The business is easy to dissolve, if desired.

Disadvantages of a Sole Proprietorship

Sole proprietors have unlimited liability and are legally responsible for all debts against the business. Their business and personal assets are at risk.

- May be at a disadvantage in raising funds and are often limited to using funds from personal savings or consumer loans.
- May have a hard time attracting high-caliber employees, or those that are motivated by the opportunity to own a part of the business.
- Some employee benefits such as owner's medical insurance premiums are not directly deductible from business income (only partially deductible as an adjustment to income).

2.Partnerships

In a Partnership, two or more people share ownership of a single business. The Partners should have a legal agreement that sets forth how decisions will be made, profits will be shared, disputes will be resolved, how future partners will be admitted to the partnership, how partners can be bought out, or what steps will be taken to dissolve the partnership when needed.

Advantages of a Partnership

- Partnerships are relatively easy to establish; however time should be invested in developing the partnership agreement.
- With more than one owner, the ability to raise funds may be increased.
- The profits from the business flow directly through to the partners' personal tax returns.
- Prospective employees may be attracted to the business if given the incentive to become a partner.
- The business usually will benefit from partners who have complementary skills.

Disadvantages of a Partnership

- Partners are jointly and individually liable for the actions of the other partners.
- Profits must be shared with others.
- Since decisions are shared, disagreements can occur.
- Some employee benefits are not deductible from business income on tax returns.
- The partnership may have a limited life; it may end upon the withdrawal or death of a partner.

Types of Partnerships that should be considered:

General Partnership

Partners divide responsibility for management and liability, as well as the shares of profit or loss according to their internal agreement. Equal shares are assumed unless there is a written agreement that states differently.

Limited Partnership and Partnership with Limited Liability

“Limited” means that most of the partners have limited liability (to the extent of their investment) as well as limited input regarding management decisions, which generally encourages investors for short term projects, or for investing in capital assets. This form of ownership is not often used for operating retail or service businesses. Forming a limited partnership is more complex and formal than that of a general partnership.

Joint Venture

Acts like a general partnership, but is clearly for a limited period of time or a single project. If the partners in a joint venture repeat the activity, they will be recognized as an ongoing partnership and will have to file as such, and distribute accumulated partnership assets upon dissolution of the entity.

3. Corporations

A corporation, chartered by the state in which it is headquartered, is considered by law to be a unique entity, separate and apart from those who own it. A corporation can be taxed; it can be sued; it can enter into contractual agreements. The owners of a corporation are its shareholders. The shareholders elect a board of directors to oversee the major policies and decisions. The corporation has a life of its own and does not dissolve when ownership changes.

Advantages of a Corporation

- Shareholders have limited liability for the corporation’s debts or judgments against the corporations.
- Generally, shareholders can only be held accountable for their investment in stock of the company. (Note however, that officers can be held personally liable for their actions, such as the failure to withhold and pay employment taxes.)
- Corporations can raise additional funds through the sale of stock.

- A corporation may deduct the cost of benefits it provides to officers and employees.
- Can elect S corporation status if certain requirements are met. This election enables company to be taxed similar to a partnership.

Disadvantages of a Corporation

- The process of incorporation requires more time and money than other forms of organization.
- Corporations are monitored by federal, state and some local agencies, and as a result may have more paperwork to comply with regulations.
- Incorporating may result in higher overall taxes. Dividends paid to shareholders are not deductible from business income, thus this income can be taxed twice.

4.Limited Liability Company (LLC)

The LLC is a relatively new type of hybrid business structure that is now permissible in most states. It is designed to provide the limited liability features of a corporation and the tax efficiencies and operational flexibility of a partnership. Formation is more complex and formal than that of a general partnership.

The owners are members, and the duration of the LLC is usually determined when the organization papers are filed. The time limit can be continued if desired by a vote of the members at the time of expiration. LLC's must not have more than two of the four characteristics that define corporations: Limited liability to the extent of assets; continuity of life; centralization of management; and free transferability of ownership interests.

What Is a Startup?

A startup is a young company founded by one or more entrepreneurs to develop a unique product or service and bring it to market. By its nature, the typical startup tends to be a shoestring operation, with initial funding from the founders or their friends and families.

KEY TAKEAWAYS

- A startup is an entrepreneurial venture in search of enough financial backing to get off the ground.
- The first challenge for a startup is to prove the validity of the concept to potential lenders and investors.
- Startups are always risky propositions but potential investors have several approaches to determining their value.

One of the startup's first tasks is raising a substantial amount of money to further develop the product. To do that, they have to make a strong argument, if not a prototype, that supports their claim that their idea is truly new or a great improvement to something on the market.

Though a vast majority of startups fail, some of history's most successful entrepreneurs created startups like Microsoft, founded by Bill Gates; Ford Motors, founded by Henry Ford; and McDonald's, founded by Ray Kroc.

Understanding Startups

In the early stages, startup companies have little or no revenue coming in. They have an idea that they have to develop, test, and market. That takes considerable money, and startup owners have several potential sources to tap:

- Traditional funding sources include small business loans from banks or credit unions, government-sponsored [Small Business Administration](#) loans from local banks, and grants made by nonprofit organizations and state governments.
- So-called [incubators](#), often associated with business schools and other nonprofits, provide mentoring, office space, and seed funding to startups.
- Venture capitalists and angel investors actively seek out promising startups to bankroll in return for a stake in the company once it gets off the ground

What does **DIC** mean?

The District Industries Center (DIC) is the institution at the district level, which provides all the services and support facilities to the entrepreneurs for setting up Small and Village Industries with the aim of promoting, facilitating and developing industrial growth.

National Small Industries Corporation

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

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. Although there are a number of other State Corporations looking after various aspects of industrial development,yet this is the only Corporation in the State exclusively engaged in the development of the MSMEs which form the back bone of industrial sector in the state.

Small Industries Development Bank of India (**SIDBI**) set up on 2nd April 1990 under an Act of Indian Parliament, acts as the Principal Financial Institution for Promotion,Financing and Development of the Micro, Small and Medium **Enterprise** (MSME) sector as well as for co-ordination of functions of institutions engaged in similar activities.

National Bank for Agriculture and Rural Development

National Bank for Agriculture and Rural Development (**NABARD**) is an Apex Development Financial Institution in India. The Bank has been entrusted with "matters concerning Policy Planning and Operations in the field of credit for Agriculture and other Economic activities in Rural areas in India"

Khadi and Village Industries Commission

The **Khadi and Village Industries Commission** (KVIC) is a [statutory body](#) formed in April 1957 (as per an RTI) by the [Government of India](#), under the Act of Parliament, 'Khadi and Village Industries Commission Act of 1956'. It is an apex organisation under the [Ministry of Micro, Small and Medium Enterprises](#), with regard to *khadi* and village industries within India, which seeks to - "plan, promote, facilitate, organise and assist in the establishment and development of khadi and village industries in the rural areas in coordination with other agencies engaged in rural development wherever necessary

What Is a Commercial Bank?

A commercial bank is a type of financial institution that accepts deposits, offers checking account services, makes various loans, and offers basic financial products like [certificates of deposit](#) (CDs) and savings accounts to individuals and small businesses. A commercial bank is where most people do their banking, as [opposed to an investment bank](#).

Commercial [banks](#) make money by providing loans and earning interest income from those loans. The types of loans a commercial bank can issue vary and may include mortgages, auto loans, business loans, and personal loans. A commercial bank may specialize in just one or a few types of loans.

Technology Business incubator (TBI)

is an entity, which helps technology-based start-up businesses with all the necessary resources/support that the start-up needs to evolve and grow into a mature business. Typically, TBIs provide budding entrepreneurs all necessary infrastructure support, technology/prototype development support, research assistance, help in getting funding, business consulting assistance, marketing assistance and do whatever is necessary to make the start-up a success.

The primary goal of a business incubator is to facilitate economic development by improving survival and growth of new entrepreneurial units. Incubators accelerate the development of young entrepreneurial units from 'idea stage' to independent self-sustaining successful business. The phenomenal growth of the incubators has taken place world over in last two decades. The concept has benefited many countries in utilizing technology as a means for their economic development.

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.

UNIT-2

MARKET SURVEY AND OPPORTUNITY IDENTIFICATION (BUSINESS PLANNING)

business planning

A business plan is a written document that describes in detail how a business usually a startup defines its objectives and how it is to go about achieving its goals. A business plan lays out a written roadmap for the firm from each of a marketing, financial, and operational standpoint.

SMALL SCALE INDUSTRIES (SSI)

The small scale industrial sector comprising micro and small enterprises (previously known as tiny and small industrial sector) has been recognized as an engine of growth all over the world. This sector is characterized by low investment requirement, operational flexibility, location wise mobility, and import substitutions. They have been the prime mover of industrial development in many developed economies. The small scale industrial units are the roots and fruits of economic activities. They provide way of life to more number of people. With less amount of capital investment, this sector contributes more towards GDP, provides more employment opportunities, offers unique product and service offerings, and serves customers with personal attention. Though the large and medium types of industries make the infrastructure and skeleton of an economy, the blood, flesh and skin of a flourishing economy is made up of small scale industrial units.

ANCILLARY UNIT

An industrial unit which is engaged or is proposed to be engaged in the manufacture or production of parts, components, sub- assemblies, tooling or intermediaries, or the rendering of services and the undertaking supplies or renders or proposes to supply or render not less than 50 percent of its production or services, as the case may be, to one or more other industrial takings and whose investment in fixed assets in plant and machinery whether held on ownership terms or on lease or on hire purchase, does not exceed Rs 75 lacs.

TINY UNIT

A **tiny unit** is the business enterprise whose investment in plant and machinery is not more than 25 lakhs. Investment limit is 25 lakhs in this type of unit. While an ancillary unit is the unit which supplies not less than 50% of its production to the parent unit.

SERVICE SECTOR UNIT

The service sector produces intangible goods, more precisely services instead of goods, and it includes 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.

- 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.

TIME SCHEDULE PLAN

Set a regular time to do your scheduling – at the start of every week or month, for example.

There are a number of different tools to choose from. A simple and easy way to keep a schedule is to use a pen and paper, organizing your time using a weekly planner. You can also use apps and software.

Step 1: Identify Available Time

Start by establishing the time you want to make available for your work. How much time you spend at work should reflect the design of your job and your personal goals in life.

For example, if you're pushing for promotion, it might be prudent to work beyond normal hours each day to show your dedication. If, on the other hand, you want to have plenty of time for out-of-work activities, you might decide to do your allocated hours and no more.

Step 2: Schedule Essential Actions

Next, block in the actions you absolutely must take to do a good job. These will often be the things you are assessed against.

For example, if you manage people, make sure that you have enough time available to deal with team members' personal issues, coaching, and supervision needs. Also, allow time to communicate with your boss and key people around you.

Step 3: Schedule High-Priority Activities

Review your **To-Do List**, and schedule in high-priority and urgent activities, as well as essential maintenance tasks that cannot be delegated or avoided.

Try to arrange these for the times of day when you are most productive – for example, some people are at their most energized and efficient in the morning, while others focus more effectively in the afternoon or evening.

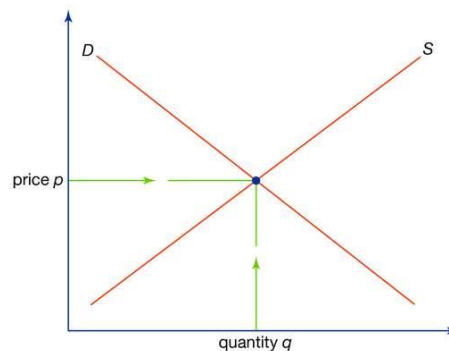
Step 4: Schedule Contingency Time

Next, schedule some extra time to cope with contingencies and emergencies. Experience will tell you how much to allow – in general, the more unpredictable your job, the more contingency time you'll need. (If you don't schedule this time in, emergencies will still happen and you'll end up working late.)

ASSESSMENT OF SUPPLY AND DEMAND

Supply and demand, in economics, relationship between the quantities of a commodity that producers wish to sell at various prices and the quantity that consumers wish to buy. It is the main model of price determination used in economic theory. The price of a commodity is determined by the interaction of supply and demand in a market. The resulting price is referred to as the equilibrium price and represents an agreement between producers and consumers of the good. In equilibrium the quantity of a good supplied by producers equals the quantity demanded by consumers.

Supply and demand



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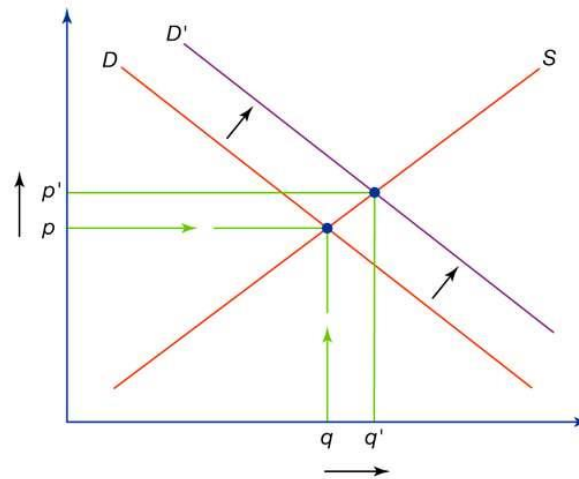
Illustration of the relationship of price to supply (*S*) and demand (*D*).

Demand Curve

The quantity of a commodity demanded depends on the price of that commodity and potentially on many other factors, such as the prices of other commodities, the incomes and preferences of consumers, and seasonal effects. In basic economic analysis, all factors except the price of the commodity are often held constant; the analysis then involves examining the relationship between various price levels and the maximum quantity that would potentially be purchased by consumers at each of those prices. The price-quantity combinations may be plotted on a curve, known as a demand curve, with price represented on the vertical axis and quantity represented on the horizontal axis. A demand curve is almost always downward-sloping, reflecting the willingness of

consumers to purchase more of the commodity at lower price levels. Any change in non-price factors would cause a shift in the demand curve, whereas changes in the price of the commodity can be traced along a fixed demand curve.

A shift in demand



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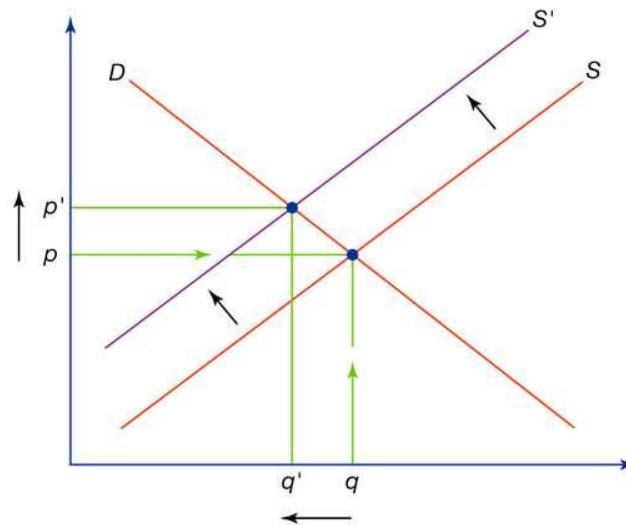
increase in demand Illustration of an increase in equilibrium price (p) and equilibrium quantity (q) due to a shift in demand (D)

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Supply Curve

The quantity of a commodity that is supplied in the market depends not only on the price obtainable for the commodity but also on potentially many other factors, such as the prices of substitute products, the production technology, and the availability and cost of labour and other factors of production. In basic economic analysis, analyzing supply involves looking at the relationship between various prices and the quantity potentially offered by producers at each price, again holding constant all other factors that could influence the price. Those price-quantity combinations may be plotted on a curve, known as a supply curve, with price represented on the vertical axis and quantity represented on the horizontal axis. A supply curve is usually upward-sloping, reflecting the willingness of producers to sell more of the commodity they produce in a market with higher prices. Any change in non-price factors would cause a shift in the supply curve, whereas changes in the price of the commodity can be traced along a fixed supply curve.

A shift in supply



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decrease in supply Illustration of an increase in equilibrium price (p) and a decrease in equilibrium quantity (q) due to a shift in supply (S).

Identification of business opportunities

1. Listen to your potential clients and past leads

When you're targeting potential customers listen to their needs, wants, challenges and frustrations with your industry. Have they used similar products and services before? What did they like and dislike? Why did they come to you? What are their objections to your products or services?

This will help you to find opportunities to develop more tailored products and services, hone your target market and identify and overcome common objections.

2. Listen to your customers

When you're talking to your customers listen to what they saying about your industry, products and services. What are their frequently asked questions? Experiences? Frustrations? Feedback and complaints?

This valuable customer information will help you identify key business opportunities to expand and develop your current products and services.

3. Look at your competitors

Do a little competitive analysis (don't let it lead to competitive paralysis though) to see what other startups are doing, and more importantly, not doing? Where are they falling down? What are they doing right? What makes customers go to them over you?

Analysing your competitors will help you identify key business opportunities to expand your market reach and develop your products and services.

4. Look at industry trends and insights

Subscribe to industry publications, join relevant associations, set Google alerts for key industry terms and news and follow other industry experts on social media.

Absorb yourself in your industry and continually educate yourself on the latest techniques and trends.

Final Product Selection Process

There are three basic stages/steps involved in product/venture selection. These are **idea generation, evaluation, and choice**.

Idea Generation: Product ideas or investment opportunities come from different sources such as business/financial newspapers, research institutes, consulting firms, natural resources, universities, competitors. etc

The starting point for idea generation could be a simple analysis of the business's strengths and weakness. Ideas could also be generated through brainstorming, desk research and various types of management consensus procedures.

Evaluation: Screening of the product ideas is the first step in evaluation. Such criteria as the potential value of the product, time money and equipment required, fitting of potential product into the business's long-range sales plan and availability of qualified people to handle its marketability need be thoroughly considered.

Each identified **product/investment opportunity** needs to be adequately evaluated. A **pre-feasibility study** of the product market, technical and financial aspect is necessary at this stage to have a clear picture of the associated cost and benefits.

A pre-feasibility is a preliminary version of a feasibility study. It is similar to a feasibility study except that it is less detailed. It is usually carried out for large and complex product/project to determine whether to proceed to the more elaborate feasibility study.

Choice: A choice is made of product which has been found to be commercially viable, technically feasible and economically desirable. At this stage, necessary machinery is set in motion.

UNIT-3

PROJECT REPORT PREPARATION

Preliminary Project Report

Preliminary Project Report is a formal document that describes specific activities, events, occurrences, or subjects of a project to explain progress of the project up to a certain point in time. This document is presented and communicated at project status meetings to explain what goals, deliverables and results are produced and what activities are still in progress. The document serves as the basis for developing the final project report.

PPR is much shorter than the project report and its reporting requirements light. PPR serves several purposes

- Providing an additional motivation for an early start on the project.
- Helping set some useful targets for delivery of intermediate results and their documentation.

A typical preliminary report for projects highlights the following data:

- **Problem/need:** A clear description of the problem or need the project aims to handle.
- **Proposed solution:** a brief description of how to address the problem/need.
- **Work effort:** An analysis summary of work relevant to the project.
- **Status:** current state of project work, including activities completed and unfinished.
- **Evaluation:** an analysis and assessment of project work by specific criteria such as cost-effectiveness, feasibility, manageability, performance, others.
- **Schedule:** a timeline with specific milestones and events related to project work.

The project preliminary report describes your progress so far. It should form the basis of your final report.

The preliminary report should include:

- **Problem:** A clear description of the problem you are addressing. This should be more refined and persuasive than the version in your original proposal.
- **Related work:** A good summary and analysis of the work relevant to your project. Everything you describe should be related directly to your project:
 - Why is it relevant? (Don't assume the reader can read your mind.)
 - If it attempts to solve a similar problem, why is it not a satisfactory solution?
 - What ideas in the other project can be applied to your project?

If there is related work you have not yet studied, list that in the related work section along with your plans for learning about it.

- **Proposed Solution:** Describe your idea for solving the problem. This need not yet be complete, but should include some specific ideas.
- **Research Plan:** Describe clearly exactly what you will do.
- **Evaluation Plan:** Describe how you will evaluate your work. This should include (possibly speculative) descriptions of specific sample programs you will use in your evaluation.
- **Schedule and Division of Labor:** Calendar showing specific milestones, when they will be accomplished, and how the team will split up the work.

There are no length constraints on the preliminary report, but you should aim to be as concise, clear and organized as possible. Since you are working in groups, the writing and presentation should be at a high quality. You should be able to reuse most of the preliminary report (after changing the verb tenses!) in your final report

Detailed Project Report

A Detailed Project Report is a document which provides details on the overall picture of the proposed business. The project report gives an account of the project proposal to ascertain the prospects of the proposed plan/activity. Project Report is a written document relating to any investment.

Project Details:

- a. Promoters
- b. Registered office
- c. Location of the factory

- d. Line of activity
- e. Background of other directors
- f. Scheme of project
- g. Land and site development
- h. Building and civil works
- i. Plant and machinery
- j. Contingencies to plant and machinery
- k. Utilities
- l. Miscellaneous fixed assets
- m. Vehicles
- n. Quality control and testing equipment
- o. Deposits
- p. Preliminary and preoperative expenses
- q. Working capital margin
- r. Schedule of implementation
- s. Management

Raw Materials Details:

- a. Requirement of raw materials
- b. Situation of raw material availability indigenously
- c. Feasibility of import of raw materials
- d. Areas from which raw material can be procured
- e. Suppliers of raw materials
- f. Annual requirement
- g. Transportation of raw materials
- h. Varieties and grades of raw material
- i. Cost of raw materials and transportation cost to the factory
- j. Linkages with suppliers of raw material.

Utilities Details:

- a. Power
- b. Steam
- c. Compressed air
- d. Fuel

- e. Water
- f. Chilled water
- g. Effluent and waste disposal

Technical Details:

- a. Plant capacity
- b. Capacity utilization
- c. Manufacturing process with flow chart
- d. Plant layout
- e. Product description and properties
- f. Packaging and its cost
- g. Plant and machinery details
- h. Plant and machinery suppliers

Manpower Details:

- a. Manpower requirement
- b. Organization chart
- c. Availability of manpower.

Financial Details:

- a. Cost of project, with details to individual cost items
- b. Means of finance
- c. Workings for financial projections
- d. Estimates of production and sales
- e. Estimated cost of production and profitability
- f. Estimated funds flow statement
- g. Projected balance sheet
- h. Statement of debt service coverage ratio

- i. Statement of computation of working capital
- j. Statement of break-even analysis
- k. IRR calculations
- l. Payback period calculations
- m. Return on investment calculations
- n. Debt-equity ratio calculations
- o. Promoters' contribution to Cost of project
- p. Promoter's contribution to Total equity

Marketing Details:

- a. Present state of the industry
- b. Consumer preferences
- c. Market requirements
- d. Market segments
- e. Distribution channels
- f. Market characteristics of the product
- g. Export prospects and international market
- h. Marketing and selling arrangements.

Project Evaluation-Social Angle:

- a. Analysis of critical factors
- b. Socio Economic benefit
- c. Labour availability
- d. Impact on ecology
- e. Foreign exchange earnings
- f. Import substitution
- g. Technology absorption

Steps of preparation of DPR:

Evaluation of DPR:

The final responsibility of the project lies with the owners. Therefore, the owner's organization must have an appropriate mechanism for project evaluation of a DPR submitted by the consultant. Apart from care in selecting the most suitable consultant in the first place the owner's must pose the following questions.

- What are the sources of critical data & information that have form the basic premises of the DPR, like demand, capital cost, input cost etc?
- The extent to which the strategic plan of top management have been reflected in the design and the repair?
- What were the various alternative considered, and the methodology followed for choosing one among them?
- The extent to which the design fulfils all applicable statutory requirements and regulations, both currently in force and those may be foreseen?
- Identification of potential problems, bottlenecks and/or major risks involved in the project.
- Degree of detailing.
- Influence of complementary/ completing projects.
- Scope for future expansion/modification/adaptation to new technologies and so on.

The above list is a simple of the types of question that the owner's may pose to the consultant during the process of selection, appraisal of the first draft and before giving the approval.

Location of the Project:

One of the important issues related to project decisions and in DPR preparation is the location of the project. The location of project can be:

- Input or supply oriented
- Output or market oriented.

Input or supply oriented: The major consideration governing the location decision concerns with the availability of various inputs for the project & their transportation from respective sources to the project site. Whenever a project entails processing of bulky raw materials and the processing reduces the bulk by refining/processing operation, it makes economic sense to move the project nearer the supplies so as to cut down the transportation

costs. The strategy of NTPC to locate major pit head thermal power plants stems from this logic. Instead of transporting coal over long distance, it may be more economical to convert coal into electrical energy at the pit head itself and transmit the electrical energy into high voltage transmission system to consumption centres. With the advent of high voltage direct current transmission technology, such options have become more cost effective.

Output or market oriented: The gas based power plants may be located near the consumption centres, particularly if gas pipelines have already been laid nearby for other projects. This enables saving on the transmission line costs and power losses in transmission.

The location strategy is largely governed by total transportation cost for entire chain, including transportation of all inputs of various sources to the processing site and that of all outputs to the consumption centres. This exercise needs the sources and quantities of all the supplies available, their unit transportation cost to each location and the demands at different consumption centres, coupled with the unit transportation cost to the finished goods to each consumption centre of each location.

The location strategy also depends on:

- The regulatory framework of the region.
- Availability of skilled/unskilled manpower
- Industrial relations situation.
- Infrastructural support.

Layout of the project:

The layout itself has profound implication on the profitability and efficiency of any enterprises. Even safety considerations can lead to major changes in the layout.

The layout for a project determines the location of various departments, processes; work centres, machines & service function as well as transportation routes for the movement of materials through these facilities.

A good layout should try to reduce material handling cost to the minimum, ensure flow of men and materials between processes without any back tracking, provide adequate safety for men and equipment and enhance labour productivity & efficiency.

Safety must be a very important consideration for deciding locations of potentially hazardous facilities. For instance storage of hazardous & inflammable chemicals & materials must be located far away from the general centre of activities at economical & practically feasible distance.

Facilities which are prone to fire hazards should be located in a fashion that is easy and quick for multiple fire tenders to arrive & extinguish the fire. It may be worthwhile to give a specific safety check to a layout before finalising it.

Equipment & Process Technology (EPT):-

The equipment and process technology (EPT) decisions are related to design of facilities and system that produce and deliver goods, products and services of desired quality and required quantity. EPT are categorised as follows:

Output decisions are related to demand forecast and marketing strategy for achieving planned market share.

The input and process decisions are complementary to each other. The input and process decisions contribute significantly to “Make or Buy” type of decisions. The “Make or Buy” decisions lead to finalisation of various inputs as well as processing and assembly requirements.

Once the production processes are identified then next set of decisions are related to choice of technology. Choice of technology decisions has to be a judicious mix of capital and labour components which are the major factor of production.

Use of modern state of art technology ensures more automation, requiring less labour but leads to high initial investment. On the contrary use of traditional technology and processes leads to lower automation with requirement of more labour and lower initial investment.

Therefore, the trade off lies between high capital and lower labour cost on one hand and low capital and high labour cost on the other hand.

Apart from cost considerations and relative proportion of mechanisation, other factors that are to be considered are scale of operations: quality and level of skills required also influence the choice of technology decisions.

Depending on the market share & capacity forecasts, a particular level of technology may be the optimum choice. In event of low market demand & lack of availability of skilled work force to operate high end & high volume technology may lead to sub optimal utilisation of the said technology.

Also, there would be substantial increase in the subsequent maintenance costs which may raised affordability issues. Thus, the choice of EPT is a complex task, requiring wide knowledge & information about different options with relative merits and demerits of each option.

In case the procurement of EPT requires high initial investment or decision making process is taking unusually long time then the option of technology collaboration may be explored.

In this option, the organisation may explore possibilities of technical collaboration agreement with some organisation that has had considerable experience in use of the proposed technology and are in position to impart their knowledge to others. Such a collaborating organisation may be found in the country or may be from abroad.

Environmental Impact Assessment (EIA):-

EPT must have a dedicated section of environmental Impact Assessment (EIA). Such an assessment would have the specifications of the environment which is known as the base level specification before setting up a project.

Thereafter, an estimate should be made as to the impact of the project operations on various base level parameters. These could cover air, water and soil parameters. The disposal of soil, liquid and gaseous effluents generated by the project would lead to increase in pollution load over the base levels.

After estimating the impact of the project on the base level of the environment the DPR should recommend specific control measures & effluent treatment facilities so that the environment pollution can be controlled within permissible limits.

The DPR should ensure that the provisions are adequate for fulfilling the legal requirements in the locality where the project is scheduled to come up. This calls for the detailed knowledge of all the state level and national level provisions with respect to environmental protection.

Many of the provisions call for obtaining clearances from controlling bodies. The DPR should also include a time schedule for obtaining all the required clearances.

Commercial aspects:-

DPR is related to general guidelines and conditions that should govern all types of contractual relationships likely to be entered into during the project.

In particular, general guidelines for any eventual arbitration procedures are indicated, specifying the nature of issue that may be referred for arbitration, choice of arbitrator by both the parties and the place where such proceedings should be held.

DPR should also include guidelines related to supply, erection, and commissioning & guarantee test of various equipments required for the project.

DPR should also lay guidelines for tendering process whether to follow single stage or two stage tendering. It may also contain model document and formats related to invitation to tenders, specifications etc.

DPR will also contain guidelines for vendor short-listing and networking. Some points related to vendor detailing that are highlighted in the DPR are as cited below:

- Commitment with respect to delivery period & penalty conditions, in case of failure to fulfil the commitment.
- General terms of payment including progress payment.
- Inspection and testing procedure and customer hold points.

- Network plan for the contract and monitoring and control system.
- Guarantee test, schedule, procedure, criteria for success and accompanying bank guarantee.
- Responsibility for damage in transit or during erection and/ or commissioning.
- Condition of admissibility of any increase in the price of the contract.
- Contract variations and the manner of handling them.
- Mobilisation advance to be paid initially.
- Responsibility to supply the equipments and necessary accessories and spare parts.

Financial Aspects:-

The DPR incorporates a much detailed projection of the costs and revenues expected during the projected lifespan of the operation phase. The principal input to this comes from operational costs.

Also the other financing cost like depreciation, interest on long term loans and short term working capital loans, writing off of pre-operative & preliminary expenses, guarantee commission etc. Income tax calculation is also included.

The DPR provides projections for the following statements:

1. Profit and loss statement.
2. The balance sheet.
3. The fund flow statement.

For the project phase, the DPR provides an estimate of the phase requirement of capital. This plan forms the basis of a strategic plan for raising the funds from external sources like terms lending institutions and through public issue of stocks and/or bonds.

The DPR would include a recommendation schedule for ensuring adequate flow of funds for the timely completion of the project with adequate provision for normal contingencies.

The DPR would also include for the project phase a recommended system of monitoring & control of the financial progress of the project, vis-a-vis the physical progress. The system is an essential ingredient for adequate financial control during the execution & the termination phase of the project.

Socio-economic Aspects:-

Modern day projects also analyze the socio-economic impacts on their immediate surroundings. The attitude of local residents plays a crucial role in the successful completion of the project in any new locality or region.

Generally, any medium to large type of project will lead to displacement of original residents and tenants of the land & bring about a significant change in the pattern of earning livelihood, brings in wide disparity in the standards of living between those who are employed in the project and those who are left out of it, raises large employment expectations among the local population.

The effect are more glaring based on the size of investments, level of technology used & innovation potential of the project. However not all factors contribute in the socio-economic influence but it is for sure that a combination of factors based on the size & type of project will surely lead to creation of social discontent.

Community based & community participated demographic surveys may be conducted for identifying the options for direct as well as indirect source of employment. DPR should also highlight planning & execution methods of specific community development programmes which help in developing a symbiotic relationship with the local community.

TECHNO ECONOMIC FEASIBILITY

TECHNO-ECONOMIC ANALYSIS (TEA)

- Techno-economic assessment TEA in principle is a cost-benefit comparison using different methods. These assessments are used for tasks such as:
 - Evaluate the economic feasibility of a specific project
 - Investigate cash flows (e.g. financing problems) over the lifetime
 - Evaluate the likelihood of different technology scales and applications.
 - Compare the economic quality of different technology applications providing the same service.

What is Techno-Economic Feasibility of the project?

- Techno - Economic feasibility refers to the estimation of project demand potential and choice of optimal technology.
- Techno- Economic feasibility is an analysis on the existing market and technology.
- The choice of technology itself will be based on the demand potential in project design.
- Techno - Economic feasibility analyze the project on individual criteria or different aspects and sets the stage for detailed design development.

4

Project viability

A **project** is economically **viable** if the economic benefits of the **project** exceed its economic costs, when analyzed for society as a whole. The economic costs of the **project** are not the same as its financial costs—externalities and environmental impacts should be considered.

Feasibility study

A feasibility study is an assessment of how practical or doable a proposed method or plan is. It is an analysis that tries to find out whether it is possible to complete a project, successfully.

Viability study

A viability study is an investigation into a business idea. Specifically, whether the idea will make money, i.e., whether it will be profitable

UNIT-4

MANAGEMENT PRINCIPLES

Definition of management

Management is the coordination and administration of tasks to achieve a goal. Such administration activities include setting the organization's strategy and coordinating the efforts of staff to accomplish these objectives through the application of available resources. Management can also refer to the seniority structure of staff members within an organization.

To be an effective manager, you'll need to develop a **set of skills**, including planning, communication, organization and leadership. You will also need extensive knowledge of the company's goals and how to direct employees, sales and other operations to accomplish them.

Principles of management

1. Division of Work-

Segregating work in the workforce amongst the worker will enhance the quality of the product. Similarly, he also concluded that the division of work improves the productivity, efficiency, accuracy and speed of the workers. This principle is appropriate for both the managerial as well as a technical work level.

2. Authority and Responsibility-

These are the two key aspects of management. Authority facilitates the management to work efficiently, and responsibility makes them responsible for the work done under their guidance or leadership.

3. Discipline-

Without discipline, nothing can be accomplished. It is the core value for any project or any management. Good performance and sensible interrelation make the management job easy and comprehensive. Employees good behaviour also helps them smoothly build and progress in their professional careers.

4. Unity of Command-

This means an employee should have only one boss and follow his command. If an employee has to follow more than one boss, there begins a conflict of interest and can create confusion.

5. Unity of Direction-

Whoever is engaged in the same activity should have a unified goal. This means all the person working in a company should have one goal and motive which will make the work easier and achieve the set goal easily.

6. Remuneration-

This plays an important role in motivating the workers of a company. Remuneration can be monetary or non-monetary. However, it should be according to an individual's efforts they have made.

7. Order-

A company should maintain a well-defined work order to have a favourable work culture. The positive atmosphere in the workplace will boost more positive productivity.

8. Equity-

All employees should be treated equally and respectfully. It's the responsibility of a manager that no employees face discrimination.

9. Stability-

An employee delivers the best if they feel secure in their job. It is the duty of the management to offer job security to their employees.

10. Initiative-

The management should support and encourage the employees to take initiatives in an organization. It will help them to increase their interest and make them worth.

Functions of management

- **Planning-** is the purpose of ascertaining in advance what is supposed to be done and who has to do it. This signifies establishing goals in advance and promoting a way of delivering them effectively and efficiently. In an establishment, the aim is the obtainment and sale of conventional Indian handloom and workmanship articles. They trade furnishings, ready-mades, household items and fabrics made out of classical Indian textiles.
- **Organizing-** is the administrative operation of specifying grouping tasks, duties, authorizing power and designating resources needed to carry out a particular system. Once a definite plan has been set for the completion of an organizational intent, the organizing party reviews the actions and resources expected to execute the program. It ascertains what actions and resources are needed. It determines who will do a distinct job, where and when it will be done.
- **Staffing-** is obtaining the best resources for the right job. A significant perspective of management is to make certain that the appropriate people with the apt skills are obtainable in the proper places and times to achieve the goals of the company. This is also called the human resource operations and it includes activities such as selection, placement, recruitment and coaching of employees.
- **Directing-** involves directing, leading and encouraging the employees to complete the tasks allocated to them. This entails building an environment that inspires employees to do their best. Motivation and leadership are 2 chief elements of direction. Directing also includes communicating efficiently as well as managing employees at the workplace. Motivating workers means simply building an atmosphere that urges them to want to work. Leadership is inspiring others to do what the manager wants them to do.
- **Controlling-** is the management operation of controlling organizational achievement towards the accomplishment of organizational intentions. The job of controlling comprises ascertaining criteria of performance, computing the current performance, comparing this with

organized rules and taking remedial action where any divergence is observed. Here management should ascertain what activities and outputs are important to progress, how and where they can be regulated and who should have the power to take remedial response

Levels of Management

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/ Executor**
- 3. Low-level Management/ Supervisor**

1. Top Level Management

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

Middle-level Management is also referred to as the executor 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 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 manager represents 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.

- To allocate tasks and responsibilities to the operative employees.
- To ensure quality and be responsible for the production quantity.
- To communicate the goals and objective of the firm laid down by the higher level
- managers to the employees and also the suggestions, recommendations, appeals, and information concerning employee problems to the higher-level managers.
- To give instruction and guided direction to workers on their day to day jobs.
- To give periodic reports of the workers to the higher-level managers

UNIT-5

FUNCTIONAL AREAS OF MANAGEMENT

a)Production Management

The role of production management is very extensive. But the sole purpose is to ensure that the business produces quality products that meet the needs of customers on a regular basis. Below are the functions of production management.

Production Control – Here the manager oversees the production process. He or she must find and ensure the correct production plan, that is, followed during the production process. If there are deviations, the Product Manager should take corrective measures.

Planning – This function is important in every organization. It should plan for when the actual production will begin and end.

Cost and Quality Control – Every company knows how essential quality control and cost is. Customers are not just looking for the best products. But they want to keep them very cheap. Quality control is an important task that a production manager must perform. It involves a number of checks made on the product to ensure the quality remains intact.

Maintenance of Machinery – Production management ensures that the equipment used is in good working condition. That is, the engine replaces the non-functioning or damaged parts to make it work optimally.

Selection of Product and Design- First selects the right product for production. Then selects the right design for the product. You have to be careful when selecting the product and design because the life and success of the company depend on it. The product should be selected only after a thorough review of all other alternative products. After selecting the right product, you need to choose the right design. The design should be tailored to the needs of the customers. It should provide maximum value for customers at lower prices. Therefore, product management should use techniques such as value engineering and value analysis.

Productivity - Productivity describes various measures of the efficiency of production. Often, a productivity measure is expressed as the ratio of an aggregate output to a single input or an aggregate input used in a production process, i.e. output per unit of input, typically over a specific period of time.

b)Inventory Management

In simple terms, inventory management is a set of all those processes which you utilize to oversee and organize your goods or materials in your facility.

Need for Inventory Management-

1. Tracking Inventory-

A good system will help you keep track of your inventory and offer a centralized view of stock across sales channels – how much is in stock, and where. It will also allow allocating inventory to specific sales channels, which is important if you have warehouses and distribution centers at multiple locations, thus, enabling warehouse management.

2. Control your costs-

Keeping reports about your inventory helps you understand what stocks are doing well, versus which are just taking up shelf space. Lack of the right inventory at the right time can mean back orders, excess inventory, etc. These drive up costs.

3. Improve your delivery-

Late delivery due to stock-outs is bound to give you a bad reputation. For tracking, it is important for you to know when the vendor is shipping inventory and when it will arrive. This helps you manage customer expectations by delivery as, when and where they want.

4. Manage planning and forecasting-

The software can help you improve demand forecasting by analyzing data trends from well-performing stocks. This minimizes your holding and handling costs, improves revenues and frees up cash flows. Also, by planning and forecasting – you deliver on customer expectations better.

5. Reduce the time for managing inventory-

With a good inventory management solution, you can reduce the time taken to keep track of all the products you have on hand and on order. Additionally, you save the time taken up in inventory recounts if your records are in place.

Models/Techniques of Inventory Management

Inventory management is a highly customizable part of doing business. The optimal system is different for each company.

However, every business should strive to remove human error from inventory management as much as possible, which means taking of advantage inventory management software. Regardless of the system you use.

The following eight techniques to will help you improve your inventory management.

1. Set par levels

Make inventory management easier by setting “par levels” for each of your products. Par levels are the minimum amount of product that must be on hand at all times. When your inventory stock dips below the predetermined levels, you know it’s time to order more.

Ideally, you’ll typically order the minimum quantity that will get you back above par. Par levels vary by product and are based on how quickly the item sells and how long it takes to get back in stock. Although setting par levels requires some research and decision-making up front, having them set will systemize the process of ordering. Not only will it make it easier for you to make decisions quickly, it will allow your staff to make decisions on your behalf.

2. First-In First-Out (FIFO)

“First-in, first-out” is an important principle of inventory management. It means your oldest stock (first-in) gets sold first (first-out), not your newest stock. This is especially important for perishable products so you don’t end up with unsellable spoilage.

In order to manage a FIFO system, you’ll need an organized warehouse. This typically means adding new products from the back, or otherwise making sure old product stays at the front. If you’re working with a warehousing and fulfillment company they probably do this already, but it’s a good idea to call them to confirm.

3. Manage relationships

Part of successful inventory management is being able to adapt quickly. Whether you need to return a slow selling item to make room for a new product, restock a fast seller very quickly, troubleshoot manufacturing issues, or temporarily expand your storage space, it’s important to have a strong

relationship with your suppliers. That way they'll be more willing to work with you to solve problems.

In particular, having a good relationship with your product suppliers goes a long way. Minimum order quantities are often negotiable. Don't be afraid to ask for a lower minimum so you don't have to carry as much inventory.

4. Contingency planning

A lot of issues can pop up related to inventory management. These types of problems can cripple unprepared businesses. For example:

- Your sales spike unexpectedly and you oversell your stock
- You run into a cash flow shortfall and can't pay for product you desperately need
- Your warehouse doesn't have enough room to accommodate your seasonal spike in sales
- A miscalculation in inventory means you have less product than you thought
- A slow moving product takes up all your storage space
- Your manufacturer runs out of your product and you have orders to fill
- Your manufacturer discontinues your product without warning

It's not a matter of if problems arise, but when. Figure out where your risks are and prepare a contingency plan. How will you react? What steps will you take to solve the problem? How will this impact other parts of your business? Remember that solid relationships go a long way here.

5. Regular auditing

Regular reconciliation is vital. In most cases, you'll be relying on software and reports from your warehouse to know how much product you have stock. However, it's important to make sure the facts match up. There are several methods for doing this.

Physical inventory

A physical inventory is the practice is counting your entire inventory at once. Many businesses do this at their year-end because it ties in with accounting and filing income tax. Although physical inventories are typically only done once a year.

Spot checking

If you do a full physical inventory at the end of the year and you often run into problems, or you have a lot of products, you may want to start spot checking throughout the year. This simply means choosing a product, counting it, and comparing the number to what it's supposed to be. This isn't done on a schedule and is supplemental to physical inventory.

Cycle counting

Instead of doing a full physical inventory, some businesses use cycle counting to audit their inventory. Rather than a full count at year-end, cycle counting spreads reconciliation throughout the year. Each day, week, or month a different product is checked on a rotating schedule.

6. Prioritize with ABC

Certain products need more attention than others. Using an ABC analysis lets you prioritize your inventory management by separating out products that require a lot of attention from those that don't. Do this by going through your product list and adding each product to one of three categories:

1. **High-value products** with a *low frequency of sales*
2. **Moderate value products** with a *moderate frequency of sales*
3. **Low-value products** with a *high frequency of sales*

Items in category A require regular attention because their financial impact is significant but sales are unpredictable. Items in category C require less oversight because they have a smaller financial impact and they're constantly turning over. Items in category B fall somewhere in-between.

7. Accurate forecasting

A huge part of good inventory management comes down to accurately predicting demand. Make no mistake, this is incredibly hard to do. There are countless variables involved and you'll never know for sure exactly what's coming—but you can try to get close. Here are a few things to look at when projecting your future sales:

- Trends in the market
- Last year's sales during the same week
- This year's growth rate
- Guaranteed sales from contracts and subscriptions
- Seasonality and the overall economy
- Upcoming promotions
- Planned ad spend

8. Consider dropshipping

Dropshipping is almost an ideal scenario from an inventory management perspective. Instead of having to carry inventory and ship products yourself—whether internally or through third-party logistics—the manufacturer or wholesaler takes care of it for you. Basically, you completely remove inventory management from your business.

Many wholesalers and manufacturers advertise dropshipping as a service, but even if your supplier doesn't, it may still be an option. Don't be afraid to ask. Although products often cost more this way than they do in bulk orders, you don't have to worry about expenses related to holding inventory, storage, and fulfillment.

C) FINANCIAL MANAGEMENT

FUNCTION OF FINANCIAL MANAGEMENT-

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise.

1. **Estimation of capital requirements:** A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programmes and policies of a concern.

Estimations have to be made in an adequate manner which increases earning capacity of enterprise.

2. **Determination of capital composition:** Once the estimation has been made, the capital structure have to be decided. This involves short- term and long- term debt equity analysis. This will depend upon the proportion of equity capital a company is possessing and additional funds which have to be raised from outside parties.
3. **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-
 - a. Issue of shares and debentures
 - b. Loans to be taken from banks and financial institutions
 - c. Public deposits to be drawn like in form of bonds.

Choice of factor will depend on relative merits and demerits of each source and period of financing.

4. **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.
5. **Disposal of surplus:** The net profits decision have to be made by the finance manager. This can be done in two ways:
 - a. Dividend declaration - It includes identifying the rate of dividends and other benefits like bonus.
 - b. Retained profits - The volume has to be decided which will depend upon expansional, innovational, diversification plans of the company.
6. **Management of cash:** Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintainance of enough stock, purchase of raw materials, etc.
7. **Financial controls:** The finance manager has not only to plan, procure and utilize the funds but he also has to exercise control over finances. This can be done through many techniques like ratio analysis, financial forecasting, cost and profit control, etc.

Working Capital Cycle (WCC)

The working capital cycle (WCC) is the amount of time it takes to turn the net current assets and current liabilities into cash. The longer the cycle is, the longer a business is tying up capital in its working capital without earning a return on it. Therefore, companies strive to reduce its working capital cycle by collecting receivables quicker or sometimes stretching accounts payable.

What Is Working Capital Management?

Working capital management is a business strategy designed to ensure that a company operates efficiently by monitoring and using its current assets and liabilities to the best effect. The primary purpose of working capital management is to enable the company to maintain sufficient cash flow to meet its short-term operating costs and short-term debt obligations

KEY TAKEAWAYS

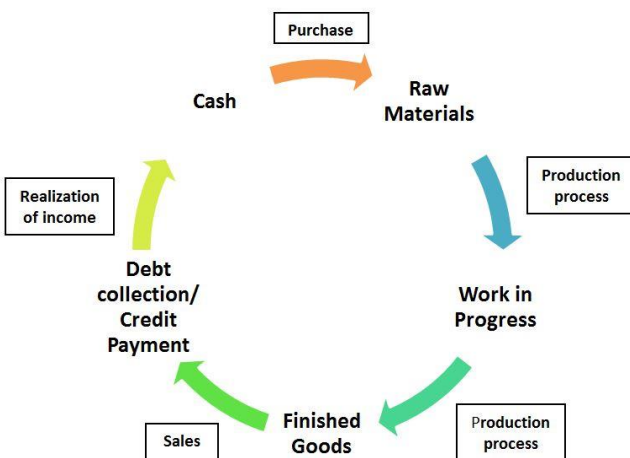
- Working Capital Management requires monitoring a company's assets and liabilities to maintain sufficient cash flow.
- The strategy involves tracking three ratios: the working capital ratio, the collection ratio, and the inventory ratio.
- Keeping those three ratios at optimal levels ensures efficient working capital management

Understanding Working Capital

Working capital is the difference between a company's current assets and its current liabilities.

Current assets include cash, accounts receivable, and inventories.

Current liabilities include accounts payable, short-term borrowings, and accrued liabilities.



Operating Cycle of a Business

Meaning of Costing:

Costing is the classifying, recording and appropriate allocation of expenditure for the determination of the costs of products or services, and for presentation of suitably arranged data for the purposes of control, and guidance of management.

Main aims of costing are:

1. To determine the exact cost of each article.
2. To determine the cost incurred during each operation to keep control over workers' wages.
3. To provide information to ascertain the selling price of the product.
4. To supply information for detection of wastage.
5. It helps in reducing the total cost of manufacture.
6. It suggests changes in design when the cost is higher.
7. To help in formulating the policies for charging the prices of the product.
8. To facilitate preparation of estimate for submitting the rates in tenders or quotations.
9. To compare the actual cost with the estimated cost of the component.

What is a Break-Even Analysis?

A break-even analysis is a financial tool which helps a company to determine the stage at which the company, or a new service or a product, will be profitable. In other words, it is a financial calculation for determining the number of products or services a company should sell or provide to cover its costs (particularly fixed costs). Break-even is a situation where an organisation is neither making money nor losing money, but all the costs have been covered.

Break-even analysis is useful in studying the relation between the variable cost, fixed cost and revenue. Generally, a company with low fixed costs will have a low break-even point of sale. For example, say Happy Ltd has fixed costs of Rs. 10,000 vs Sad Ltd has fixed costs of Rs. 1,00,000 selling similar products, Happy Ltd will be able to break even with the sale of lesser products as compared to Sad Ltd.

Components of Break Even Analysis

Fixed costs

Fixed costs are also called overhead costs. These overhead costs occur after the decision to start an economic activity is taken and these costs are directly related to the level of production, but not the quantity of production. Fixed costs include (but are not limited to) interest, taxes, salaries, rent, depreciation costs, labour costs, energy costs etc. These costs are fixed irrespective of the production. In case of no production also the costs must be incurred.

Variable costs

Variable costs are costs that will increase or decrease in direct relation to the production volume. These costs include cost of raw material, packaging cost, fuel and other costs that are directly related to the production.

Calculation of Break-Even Analysis

The basic formula for break-even analysis is derived by dividing the total fixed costs of production by the contribution per unit (price per unit less the variable costs).

CONTRIBUTION PER UNIT= (SELLING PRICE PER UNIT-VARIABLE COST PER UNIT)

BREAK EVEN POINT(BEP)= $\frac{\text{FIXED COST}}{\text{CONTRIBUTION PER UNIT}}$ OR

$\frac{\text{FIXED COST}}{(\text{AVERAGE PRICE PER UNIT- VARIABLE COST PER UNIT})}$

For an example:

Variable costs per unit: Rs. 400

Sale price per unit: Rs. 600

Desired profits: Rs. 4,00,000

Total fixed costs: Rs. 10,00,000

First we need to calculate the break-even point per unit, so we will divide the Rs.10,00,000 of fixed costs by the Rs. 200 which is the **contribution per unit** =(Rs. 600 – Rs. 400).

Break Even Point = Rs. 10,00,000/ Rs. 200 = 5000 units Next, this number of units can be shown in rupees by multiplying the 5,000 units with the selling price of Rs. 600 per unit.

We get Break Even Sales at 5000 units x Rs. 600 = Rs. 30,00,000. (Break-even point in rupees)

BRIEF IDEA ABOUT ACCOUNTING TERMINOLOGIES

Bookkeeping is the recording, on a day-to-day basis, of the financial transactions and information pertaining to a business. It ensures that records of the individual financial transactions are correct, up-to-date and comprehensive. Accuracy is therefore vital to the process.

A journal entry is a record of the business transactions in the accounting books of a business. A properly documented journal entry consists of the correct date, amounts to be debited and credited, description of the transaction and a unique reference number.

A journal entry is the first step in the accounting cycle. A journal details all financial transactions of a business and makes a note of the accounts that are affected. Since most businesses use a double-entry accounting system, every financial transaction impact at least two accounts, while one account is debited, another account is credited. This means that a journal entry has equal debit and credit amounts

The basic format of a journal entry is as follows:

	Debit	Credit
Account name and number	Rs.1000	
Account name and number		Rs.1000

The total amount you enter in the debit column equals the total amount entered in the credit column.

Petty Cash Book is maintained to record small expenses such as postage, stationery, telegram. A separate column is allotted for each type of expenditure. The difference between the total of the debit items and that of the 'total column' on the credit represents the balance of the petty cash in hand.

Format of Simple Petty Cash Book

Specimen of Simple Petty Cash Book

Cash Received	C.B. Folio	Date	Particulars	V.N.	Total Payment (\$)

Example of Simple Petty Cash Book

Record the following transactions in a Simple Petty Cash Book for the Month or January 2019.

2019		\$
Jan. 01	Cash received from head cashier for petty expenses	1,000
Jan. 05	Paid Telephone Expenses	100
Jan. 07	Paid Postage Expenses	15
Jan. 10	Cartage paid	50
Jan. 11	Traveling Expenses paid	100
Jan. 12	Paid Office Expenses	300
Jan. 15	Postage Expenses paid	20
Jan. 20	Paid Telephone Bill	100
Jan. 28	Miscellaneous Expenses	75
Jan. 31	Cartage paid	20

Solution

Cash Received	C.B. Folio	Date	Particulars	V.N.	Total Payment (\$)
		2019			
1,000		Jan. 01	Bank account		
		Jan. 05	Telephone Account		100
		Jan. 07	Postage Account		15
		Jan. 10	Cartage account		50
		Jan. 11	Traveling		100
		Jan. 12	Office Exp. Account		300
		Jan. 15	Postage Account		20
		Jan. 20	Telephone Account		100
		Jan. 28	Miscellaneous Exp. Account		75
		Jan. 31	Cartage Account		20
			Balance c/d		220
1,000					1,000
220		Feb. 01	Balance b/d		
780		Feb. 01	Bank Account		

Profit And Loss Account -

The account that shows annual net profit or net loss of a business is called **Profit and Loss Account**. It is prepared to determine the net profit or net loss of a trader. P&L account is a component of final accounts.

Example

From the Following trial balance of John & Co. prepare the Trading and Profit and Loss Account for the year ended 31st December 2019.

	\$		\$
Opening Stock	20,000	Sales	56,000
Sales Returns	1,000	Creditors	20,000
Purchases	31,000	Capital	1,00,000
Carriage Inwards	20,000	Purchases Return	1,000
Salaries	4,000	Loan	21,000
Investment	20,000	Interest on Investment	2,000
Commission	500		
Wages	2,000		
Customs Duty	4,000		
Building	80,000		
Insurance	1,200		
Discount	300		
Furniture	4,000		
Sundry Debtors	20,000		
Cash	8,000		
	2,00,000		2,00,000

The closing stock was valued at \$32,000.

Solution

John and Co.
Trading and Profit and Loss Account
For the year ended 31st Dec. 2019

	\$		\$
Opening Stock	20,000	Sales	56,000
Purchases	31,000	Less: Sales Return	<u>1,000</u> 55,000
Less: Purchases Return	<u>1,000</u> 30,000	Closing Stock	32,000
Carriage Inwards	4,000		
Wages	2,000		
Customs Duty	4,000		
Gross Profit (Transfer to P&L A/c)	<u>27,000</u>		
	87,000		<u>87,000</u>
Salaries	4,000	Gross Profit b/d	27,000
Insurance	1,200	Interest on Investment	2,000
Commission	500		
Discount	300		
Net Profit (Transferred to Capital A/c)	<u>23,000</u>		
	29,000		29,000

Balance Sheet

A balance sheet gives a statement of a business's assets, liabilities and shareholders' equity at a specific point in time. They offer a snapshot of what your business owns and what it owes as well as the amount invested by its owners, reported on a single day. A balance sheet tells you a business's worth at a given time, so you can better understand its financial position.

Balance sheet example

**TEDDY FAB INC.
BALANCE SHEET
December 31, 2100**

ASSETS

Current assets

Cash and cash equivalents	\$ 100,000
Accounts receivable	20,000
Inventory	15,000
Prepaid expense	4,000
Investments	10,000
Total current assets	149,000

Property and equipment

Land	24,300
Buildings and improvements	250,000
Equipment	50,000
Less accumulated depreciation	(5,000)

Other assets

Intangible assets	4,000
Less accumulated amortization	(200)

Total assets **\$ 472,100**

LIABILITIES AND SHAREHOLDERS' EQUITY

Current liabilities

Accounts payable	\$ 30,000
Notes payable	10,000
Accrued expenses	5,000
Deferred revenue	2,000
Total current liabilities	47,000

Long-term debt 200,000

Total liabilities **247,000**

Shareholders' Equity

Common stock	10,000
Additional paid-in capital	20,000
Retained earnings	197,100
Treasury stock	(2,000)

Total liabilities and shareholders' equity **\$ 472,100**

d) MARKETING MANAGEMENT-

Market

The market actually refers to a set up where potential buyers and sellers can meet to exchange goods or services. It is basically a medium that facilitates these transactions in an economy. It allows for the exchange of goods, services, information under the protection of the law and generally in exchange for consideration.

In marketing, businesses will design strategies that satisfy customers' needs, increase sales, maximize profit and beat their competition. That is a nice truth and statement, but many might ask, "what philosophy is the best for a company in setting marketing strategies?"

Well, in this article we will discuss 5 different concepts of marketing that each have a specific function in a holistic marketing strategy. The concepts are:

1. The Production Concept
2. The Product Concept
3. The Selling Concept
4. The Marketing Concept
5. The Societal Marketing Concept

The Production Concept

The production concept is the most operations-oriented than any of the other marketing concepts on this list. It speaks to the human truth that we prefer products that are easily available and inexpensive.

The basic idea of this concept is that businesses will want to produce widely cheap products in maximum volumes to maximize profitability and scale. Businesses assume that consumers are primarily interested in product availability and low prices while customer's needs might not be fully addressed.

Such an approach is probably most effective when a business operates in very high growth markets or where the potential for economies of scale is significant.

The Product Concept

The product concept is not so much about the production and business output but focuses more on the customer.

Potential customers favor products that offer quality, performance, or innovative features.

This marketing concept believes in potential customers and how their brand loyalty is closely tied to options of products, the quality of those products and the benefits they get from the product and the business they invest in.

This is seen most commonly with our obsession with Apple products and looking forward to their new gadgets and features upon launch!

The Selling Concept

The selling concept is the bread and butter of marketing efforts as it believes that people will not buy enough of a business's product so businesses need to persuade them to do so.

This concept puts a lot of power into the hands of a business who has a whole plan to effectively stimulate more buying with its potential customers. A lot of the time we also see this action used when a business has to deal with overcapacity and needing to sell what they make rather than what the market needs or wants.

Businesses that choose to use this marketing concept must be good at finding potential customers and emotionally sell them on the benefits of their "not needed product."

The Marketing Concept

The marketing concept is the concept of competition. It is a marketing concept that believes that the success of a business depends on the marketing efforts that deliver a better value proposition than its competitors.

This concept focuses on the needs and wants of target marketing as well as delivering value better than its competition. Through marketing, it's your goal to be the preferred option compared to your competitors.

The Societal Marketing Concept

The societal marketing concept is the most progressive and modern-day applicable marketing mindset to have. It is a marketing concept that believes in giving back to society by producing better products that help the world be a better place.

MARKETING TECHNIQUES

Social Networks and Viral Marketing

Social media marketing focuses on providing users with content they find valuable and want to share across their social networks, resulting in increased visibility and traffic. Social media shares of content, videos, and images also influence Search Engine Optimization (SEO) efforts in that they often increase relevancy in search results within social media networks like Facebook, Twitter, YouTube, and Instagram and search engines like Google and Yahoo.

Paid Media Advertising

Paid media is a tool that companies use to grow their website traffic through paid advertising. One of the most popular methods is pay-per-click (PPC) links. Essentially, a company buys or “sponsors” a link that appears as an add in search engine results when keywords related to their product or service are searched (this process is commonly known as search engine marketing, or SEM). Every time the add is clicked, the company pays the search engine (or other third party host site) a small fee for the visitor — a literal “pay per click.”

Internet Marketing

Internet marketing, or online marketing, combines web and email to advertise and drive e-commerce sales. Social media platforms may also be included to leverage brand presence and promote products and services. In total, these efforts are typically used in conjunction with traditional advertising formats like radio, television, and print.

Email Marketing

Email marketing is a highly effective way to nurture and convert leads. However, it's not a game of chance, as to whether your message winds up in spam filters. Instead, email marketing is an automated process that targets specific prospects and customers with the goal of influencing their purchasing decisions. Email marketing success is measured by open rates and click-through rates, so strategy comes into play, particularly when it's used as a component of a larger internet marketing initiative.

Direct Selling

Direct selling accomplishes exactly what the name suggests — marketing and selling products directly to consumers. In this model, sales agents build face-to-face relationships with individuals by demonstrating and selling products away from retail settings, usually in an individual's home.

Point-of-Purchase Marketing

Point-of-Purchase marketing (or POP marketing) sells to a captive audience — those shoppers already in-store and ready to purchase. Product displays, on-package coupons, shelf talkers that tout product benefits, and other attention-getting “sizzle” often sway buying decisions at the shelf by making an offer simply too good — and too visible — to pass up.

CONCEPT OF 4P s

Marketing is simplistically defined as ‘putting the right product in the right place, at the right price, at the right time.’ Though this sounds like an easy enough proposition, a lot of hard work and research needs to go into setting this simple definition up.

The **marketing mix** is a crucial tool to help understand what the product or service can offer and how to plan for a successful product offering. The marketing mix is most commonly executed through the 4 P's of marketing: Price, Product, Promotion, and Place.



Product

The product is either a tangible good or an intangible service that is seen to meet a specific customer need or demand. All products follow a logical product life cycle and it is vital for marketers to understand and plan for the various stages and their unique challenges. It is key to understand those problems that the product is attempting to solve. The benefits offered by the product and all its features need to be understood and the unique selling proposition of the product need to be studied. In addition, the potential buyers of the product need to be identified and understood.

Price

Price covers the actual amount the end user is expected to pay for a product. How a product is priced will directly affect how it sells. This is linked to what the perceived value of the product is to the customer rather than an objective costing of the product on offer. If a product is priced higher or lower than its perceived value, then it will not sell. This is why it is imperative to understand how a customer sees what you are selling. If there is a positive customer value, then a product may be successfully priced higher than its objective monetary value. Conversely, if a product has little value in the eyes of the consumer, then it may need to be underpriced to sell. Price may also be affected by distribution plans, value chain costs and markups and how competitors price a rival product.

Promotion

The marketing communication strategies and techniques all fall under the promotion heading. These may include advertising, sales promotions, special offers and public relations. Whatever the channel used, it is necessary for it to be suitable for the product, the price and the end user it is being marketed to. It is important to differentiate between marketing and promotion. Promotion is just the communication aspect of the entire marketing function.

Place

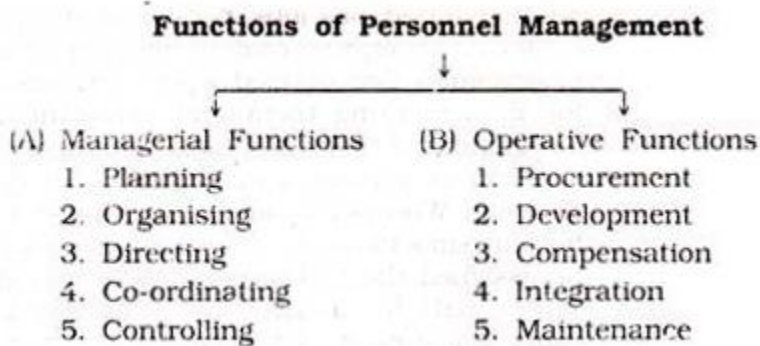
Place or placement has to do with how the product will be provided to the customer. Distribution is a key element of placement. The placement strategy will help assess what channel is the most suited to a product. How a product is accessed by the end user also needs to compliment the rest of the product strategy

HUMAN RESOURCE MANAGEMENT

Functions of personnel management

(A) Managerial Functions.

(B) Operative Functions.



A. Managerial Functions:

Management aims at getting things done by others. Managerial functions deal with planning, organizing, directing, coordinating and controlling the activities of employees in an enterprise.

1. Planning:

Planning involves thinking in advance. It is the determination of strategies, programmes, policies, procedures to accomplish organizational objectives. Planning is a difficult task which involves ability to think, to predict, to analyze, and to come to decisions.

2. Organizing:

Organization is a process of allocating the task among its members for achieving organizational objectives. This is done by designing the structure

or relationship among jobs, personnel and physical factors. For achieving enterprise goals a number of plans, policies and programmes are decided upon. Organization is a channel for implementing them and achieving good results. The assignment of tasks and fixing of responsibilities will be the function of personnel management.

3. Directing:

It is the basic function of managerial personnel. Directing means telling people to do a particular work. It does not mean only issuing orders to employees but also ensures that they perform as per the directions. The employees are also given instructions for carrying out their task. The orders and instructions should be clear and precise so that these are obeyed properly.

Motivating employees to accomplish their task is also a part of directing function. The circumstances, psychology, economic and social factors influencing employees should be taken into consideration while selecting the techniques of motivation. Though all these decisions are taken by the top level management but personnel department is consulted at every stage. The effectiveness of various plans and policies for motivating employees is also undertaken by personnel department.

4. Coordinating:

Organizational objectives will be achieved only if group activities in the enterprise are coordinated effectively. There may be a problem of each group or department trying to pursue its own goals without bothering about overall objectives. A coordinated approach will help in achieving common goals.

Coordination of personnel is required at all levels of management.

Personnel department coordinates the task of developing, interpreting and reviewing personnel policies and programmes related to employees. The final decisions may be left to line managers but personnel department makes suggestions for improvements.

5. Controlling:

Controlling is the act of checking, regulating and verifying whether everything occurs as per the standards set and plans adopted. The performance of persons is regularly reviewed to find out whether it is going according to the standards or not. In case, performance is low then steps are taken to improve it in future. Controlling function involves reviewing performance and taking corrective measures.

B. Operative Functions:

These functions are related to the procuring, developing, compensating, integrating and maintaining a work-force for attaining organizational goals. These functions are also known as service functions.

1. Procurement:

This function relates to the procuring of sufficient and appropriate number of persons for carrying out business work. The needs of the organization should be assessed to find out the requirements of persons. Besides number, the procurement of suitable persons is also essential. For this purpose, the requirements of various jobs should be studied for fixing the educational and technical experience of persons expected to man those jobs. Only the right type of persons will be able to give satisfactory results.

2. Development:

The development function is concerned with the development of employees by increasing their skill and proficiency in work. The persons are given proper training through various methods so that their performance is better in undertaking the jobs. Proper job description will enable the employees to know their weak points in performing various jobs. Training programmes are made suitable to cover up deficiencies in workers' performance.

3. Compensation:

It is concerned with securing adequate and equitable remuneration to persons working in the organization. Job analysis will enable in fixing the remuneration for various jobs. The needs of the jobs and qualifications of persons who will take up those jobs should be taken into consideration while fixing remuneration. If the employees are paid less than they should have got, they may leave the job at an earliest opportunity. So compensation should be fixed in such a way that it is able to attract and retain suitable persons in the organization.

4. Integration:

Integration is concerned with the attempt to effect reconciliation of individual, organization and social interest. It involves infusing among employees a sense of belonging to the enterprise. The employees should identify their personal interest with that of the organization. They should have a feeling that everything good of the enterprise will also be in their interest. This will bring about harmony of interests both of employees and the organization. There should be proper communication channel at all levels. The grievances of employees should be redressed at the earliest. This will help in creating good industrial relations and will integrate them.

5. Maintenance:

This function deals with sustaining and improving conditions that have been established. Better conditions of work should be maintained at all times. The employees will feel happy to work under such conditions. These conditions include establishment of health, sanitation and safety standards. If working conditions deteriorate, then employees will be prompted to leave the enterprise. Personnel department is put in charge of providing and maintaining healthy and conducive working conditions in the enterprise.

What is Manpower Planning?

Manpower planning is the process of estimating the optimum number of people required for completing a project, task or a goal within time. Manpower planning includes parameters like number of personnel, different types of skills, time period etc. It is a never ending continuous process to make sure that the business has the optimized resources available when required taking into consideration the upcoming future projects and also the replacement of the outgoing employees. It is also called as Human Resource Planning.

Recruitment-

Recruitment is a process of finding and attracting the potential resources for filling up the vacant positions in an organization. It sources the candidates with the abilities and attitude, which are required for achieving the objectives of an organization.

Recruitment process is a process of identifying the jobs vacancy, analyzing the job requirements, reviewing applications, screening, shortlisting and selecting the right candidate.

Sources of manpower

Recruitment is of 2 types

Internal Recruitment – is a recruitment which takes place within the concern or organization. Internal sources of recruitment are readily available to an organization. Internal sources are primarily three – Transfers, promotions and Re-employment of ex-employees. Re-employment of ex-employees is one of the

internal sources of recruitment in which employees can be invited and appointed to fill vacancies in the concern.

Internal recruitment may lead to increase in employee's productivity as their motivation level increases. It also saves time, money and efforts. But a drawback of internal recruitment is that it refrains the organization from new blood.

External Recruitment – External sources of recruitment have to be solicited from outside the organization. External sources are external to a concern. But it involves lot of time and money .The external sources of recruitment include – Employment at factory gate, advertisements, employment exchanges, employment agencies, educational institutes, labour contractors, recommendations etc.

Selection Process

Every organization creates a selection process because they have their own requirements. Although, the main steps remain the same. So, let's understand in brief how the selection process works.

- **Receiving Applications**

Potential employees apply for a job by sending applications to the organization. The application gives the interviewers information about the candidates like their bio-data, work experience, hobbies and interests.

- **Screening Applications**

Once the applications are received, they are screened by a special screening committee who choose candidates from the applications to call for an interview. Applicants may be selected on special criteria like qualifications, work experience etc.

- **Employment Tests**

Before an organization decides a suitable job for any individual, they have to gauge their talents and skills. This is done through various employment tests like intelligence tests, aptitude tests, proficiency tests, personality tests etc.

- **Employment Interview**

The next step in the selection process is the employee interview. Employment interviews are done to identify a candidate's skill set and ability to work in an organization in detail. Purpose of an employment interview is to find out the suitability of the candidate and to give him an idea about the work profile and what is expected of the potential employee. An employment interview is critical for the selection of the right people for the right jobs.

- **Medical Examination**

The medical exam is also a very important step in the selection process. Medical exams help the employers know if any of the potential candidates are physically and mentally fit to perform their duties in their jobs.

- **Final Selection and Appointment Letter**

This is the final step in the selection process. After the candidate has successfully passed all written tests, interviews and medical examination, the employee is sent or emailed an appointment letter, confirming his selection to the job.

The appointment letter contains all the details of the job like working hours, salary, leave allowance etc. Often, employees are hired on a conditional basis where they are hired permanently after the employees are satisfied with their performance.

Methods of Training:

1. On-the-job Training (OJT) Methods:

This is the most common method of training in which a trainee is placed on a specific job and taught the skills and knowledge necessary to perform it.

The advantages of OJT are as follows:

1. On the job method is a flexible method.
2. It is a less expensive method.
3. The trainee is highly motivated and encouraged to learn.
4. Much arrangement for the training is not required.

On-the-job training methods are as follows:

1. Job rotation:

This training method involves movement of trainee from one job to another gain knowledge and experience from different job assignments. This method helps the trainee understand the problems of other employees.

2. Coaching:

Under this method, the trainee is placed under a particular supervisor who functions as a coach in training and provides feedback to the trainee. Sometimes the trainee may not get an opportunity to express his ideas.

3. Job instructions:

Also known as step-by-step training in which the trainer explains the way of doing the jobs to the trainee and in case of mistakes, corrects the trainee.

4. Committee assignments:

A group of trainees are asked to solve a given organizational problem by discussing the problem. This helps to improve team work.

2. Off-the-job Methods:

On the job training methods have their own limitations, and in order to have the overall development of employee's off-the-job training can also be imparted. The methods of training which are adopted for the development of employees away from the field of the job are known as off-the-job methods.

The following are some of the off-the-job techniques:

1. Case study method:

Usually case study deals with any problem confronted by a business which can be solved by an employee. The trainee is given an opportunity to

analyse the case and come out with all possible solutions. This method can enhance analytic and critical thinking of an employee.

2. Incident method:

Incidents are prepared on the basis of actual situations which happened in different organizations and each employee in the training group is asked to make decisions as if it is a real-life situation. Later on, the entire group discusses the incident and takes decisions related to the incident on the basis of individual and group decisions.

3. Role play:

In this case also a problem situation is simulated asking the employee to assume the role of a particular person in the situation. The participant interacts with other participants assuming different roles. The whole play will be recorded and trainee gets an opportunity to examine their own performance.

4. Business games:

According to this method the trainees are divided into groups and each group has to discuss about various activities and functions of an imaginary organization. They will discuss and decide about various subjects like production, promotion, pricing etc. This gives result in co-operative decision making process.

6. Lectures:

This will be a suitable method when the numbers of trainees are quite large. Lectures can be very much helpful in explaining the concepts and principles very clearly, and face to face interaction is very much possible.

Payment of Wages

The Payment of Wages Act, 1936 (Act) is essentially meant to benefit industrial employees who do not have very high salaries. It applies to all employees working in a factory or working through a sub-contractor or directly with the railway administration or those employed in the industrial sector as the Act specifies.

In 2017, the Government of India increased the ceiling limit to Rs. 24,000 per month. This means that employees with wages up to the ceiling limit are covered under the Act.

Leadership

Leadership in business is the capacity of a company's **management** to set and achieve challenging goals, take fast and decisive action when needed, outperform the competition, and inspire others to perform at the highest level they can.

Need/Importance of Leadership

Leadership plays an important role in the development of any organization. No organization can work efficiently without effective leadership. Leadership is an important function of the management which helps to enhance productivity and to achieve organizational goals. In fact leadership is an essential part and a crucial component of effective management which helps to maximize efficiency and achieve organizational goals.

The importance of leadership in organizational development cannot be denied.

- **Influencing the behaviour of people:** A leader impresses his subordinates with his leadership ability. He brings them under his control in such a way that they put in their best efforts to achieve the goals of the organization. Good leaders usually get good results through their followers.
- **Helps employees in fulfilling their needs:** A leader establishes personal relationship with his subordinates and tries to meet their requirements. People follow a leader because he provides them security and the opportunities to earn wealth, gives them the right to work and tries to understand their feelings. Employees willingly accept him because he takes care of their needs.
- **Introducing required changes:** The business environment is changing at a quick pace, so in order to face the changing environment, many alterations have to be introduced in the organization. Since the people already happen to be under the influence of the leader, he can easily makes them agree to implement these changes.
- **Solving conflicts effectively:** A leader can effectively solve every type of conflict be it employee vs. employee or employees vs. employer. A leader allows his followers the liberty to express their views. That is the reason that he easily understands the reality of the conflict, in this way, by understanding the nature of the conflict he tries to provide timely solution and minimizes the possibility of adverse results.
- **Training and Development of Subordinates:** A leader helps in the training and development of the employees. He makes them aware of the modern techniques of work. In addition, he makes it possible for them to be good leaders in future.
- **Setting a clear vision:** This means Influencing employees to understand and accept the future state of the organization. A good leader will influence his

followers to perform their duties by explaining the vision and the importance of their role in the outcome.

- **Motivating and guiding employees:** This involves finding out the needs of the employees and fulfilling them. It is important to define the employees role in the work process and provide them with the tools needed. A good leader will explain the task and be available to assist them if they run into a problem.
- **Building morale:** This involves pulling everyone together towards a common goal. A good leader will let the employees know how much their work is appreciated. A simple gesture like providing praise for a task well done, or throwing a party to recognize small achievements, will regenerate their spirits.

Qualities of a Leader

Integrity

The importance of integrity should be obvious. Integrity is essential for the individual and the organization. It's especially important for top-level executives who are charting the organization's course and making countless other significant decisions.

Ability to Delegate

Delegating is one of the core responsibilities of a leader, but it can be tricky to delegate effectively. The goal isn't just to free yourself up — it's also to enable your direct reports, facilitate teamwork, provide autonomy, lead to better decision-making, and help your direct reports grow. In order to delegate well, you also need to build trust with your team.

Communication

Effective leadership and effective communication are intertwined. You need to be able to communicate in a variety of ways, from transmitting information to coaching your people. And you must be able to listen and communicate with a wide range of people across roles, social identities, and more. The quality and effectiveness of communication across your organization directly affects the success of your business strategy too.

Gratitude

Gratitude can lead to higher self-esteem, reduced depression and anxiety, and even better sleep. Few people regularly say "thank you" at work, even

though most people say they'd be willing to work harder for an appreciative boss. Learn how to give thanks and practice more gratitude in the workplace.

Learning Agility

Learning agility is the ability to know what to do when you don't know what to do. If you're a "quick study" or are able to excel in unfamiliar circumstances, you might already be learning agile. But anybody can foster learning agility through practice, experience, and effort.

Influence

For some people, "influence" feels like a dirty word. But being able to convince people through logical, emotional, or cooperative appeals is a component of being an inspiring, effective leader. Influence is quite different from manipulation, and it needs to be done authentically and transparently. It requires emotional intelligence and trust-building.

Courage

It can be hard to speak up at work, whether you want to voice a new idea, provide feedback to a direct report. That's part of the reason courage is a key skill for good leaders. Rather than avoiding problems or allowing conflicts to fester, courage enables leaders to step up and move things in the right direction.

Respect

Treating people with respect on a daily basis is one of the most important things a leader can do. It will ease tensions and conflict, create trust, and improve effectiveness. Respect is more than the absence of disrespect, and it can be shown in many different ways.

Functions of a Leader:

1. Setting Goals:

A leader is expected to perform creative function of laying out goals and policies to persuade the subordinates to work with zeal and confidence.

2. Organizing:

The second function of a leader is to create and shape the organization on scientific lines by assigning roles appropriate to individual abilities with the

view to make its various components to operate sensitively towards the achievement of enterprise goals.

3. Initiating Action:

The next function of a leader is to take the initiative in all matters of interest to the group. He should not depend upon others for decision and judgment. He should float new ideas and his decisions should reflect original thinking.

4. Co-Ordination:

A leader has to reconcile the interests of the individual members of the group with that of the organization. He has to ensure voluntary co-operation from the group in realizing the common objectives.

5. Direction and Motivation:

It is the primary function of a leader to guide and direct his group and motivate people to do their best in the achievement of desired goals, he should build up confidence and zeal in the work group.

6. Link between Management and Workers:

A leader works as a necessary link between the management and the workers. He interprets the policies and programmes of the management to his subordinates and represents the subordinates' interests before the management. He can prove effective only when he can act as the true guardian of the interests of his subordinates.

Manager Vs Leader

Basis	Manager	Leader
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.
Sanctions	Manager has command over allocation and distribution of sanctions.	A leader has command over different sanctions and related task records. These sanctions are essentially of informal nature.

Leadership Styles

Autocratic Leadership

Authoritarian leaders, also known as autocratic leaders, provide clear expectations for what needs to be done, when it should be done, and how it should be done. This style of leadership is strongly focused on both command by the leader and control of the followers. There is also a clear division between the leader and the members. Authoritarian leaders make decisions independently, with little or no input from the rest of the group.

Authoritarian leadership is best applied to situations where there is little time for group decision-making or where the leader is the most knowledgeable member of the group. The autocratic approach can be a good one when the situation calls for rapid decisions and decisive actions.

Democratic Leadership

Democratic leadership is typically the most effective leadership style. Democratic leaders offer guidance to group members, but they also participate in the group and allow input from other group members. Democratic leaders tend to make followers feel like they are an important part of the team, which helps foster commitment to the goals of the group.

Participative Leadership

Participative leaders encourage group members to participate, but retain the final say in the decision-making process. Group members feel engaged in the process and are more motivated and creative.

Need/Importance of motivation

1. Greater efficiency:

Motivation enhances the efficiency of the employees and of organization. When employees are motivated, they can perform with commitment and dedication.

2. Reduction in absenteeism and labour turnover:

Motivated employees may not remain absent or leave the organization. They develop a sense of belonging towards the organization and thus improve their overall performance.

3. Team spirit:

Motivation improves team spirit of employees, and this improves the work environment and the overall performance of the employee and the organization.

4. Reduction in wastages and breakages:

Motivated employees take great care in handling machines and other resources. This will reduce wastages and breakages, thus resulting in higher benefits to the organization.

5. Cordial relations:

Motivation enables cordial and healthy relationship in the organization. Motivation helps reduce labour grievances and disputes. It ensures sound relations between the management and the labour. It improves the overall efficiency of the organization.

6. Promotion of innovation:

Motivated employees use their initiative to find out innovative ways in the performance of their operations. Such employees are more creative and help the organization to gain the competitive advantage.

7. Optimum use of resources:

Motivation leads to greater employee involvement and lesser wastages. This leads to optimum utilization of resources.

8. Corporate image:

Motivated employees are more loyal to the organization. They work with a sense of commitment and dedication. This improves the overall performance of the employee, which enables better results for the company. This results in better relations with all the stakeholders.

Characteristics/Features of Motivation:

1. Interaction between the individual and the situation:

Motivation is not a personal trait but an interaction between the individual and the situation.

2. Goal-directed behaviour:

Motivation leads to an action that is goal oriented. Motivation leads to accomplishment of organizational goals and satisfaction of personal needs.

3. Systems oriented:

Motivation is influenced by two forces:

a. Internal forces:

These forces are internal to the individual, i.e., their needs, wants and nature.

b. External forces:

These forces are external to the individual, which may be organizational related such as management philosophy, organizational structure, and superior-subordinate relationship, culture, customs, religion and values.

4. Positive or negative:

Positive motivation or the carrot approach offers positive incentives such as appreciation, promotion, status and incentives. Negative motivation or stick approach emphasizes penalties, fines and punishments.

5. Dynamic and complex in nature:

Human behaviour is highly complex, and it becomes extremely difficult to understand people at work. Motivation is a dynamic and complex process.

Factors Affecting Motivation

1. Reward and recognition

There are many ways to reward employees. Rewards can vary in both cost and impact and it is best to offer a portfolio of rewards, examples include once in a lifetime trips and experiences, vouchers or something as simple as an extra day off. The aim of rewarding and recognising employees is to encourage and motivate them to exceed within their roles and promote positive behaviours.

2. Development

Development is very important for motivating employees; studies have shown that 20% of employees prefer career development opportunities and training to monetary reward. Development makes an employee self-dependent and allows them to contribute more effectively in the workplace. It also helps employees to enhance their input to your business.

3. Leadership

Only 2 in 10 employees strongly agree that their performance is managed in a way that motivates them to do outstanding work – this clearly displays how much a good leader motivates employees. A good leader has the knowledge of what truly inspires loyal and motivated humans to perform at a high level. It is important that a good leader has reasonable expectations, gives credit where credit is due and appreciates their staff.

4. Work life balance

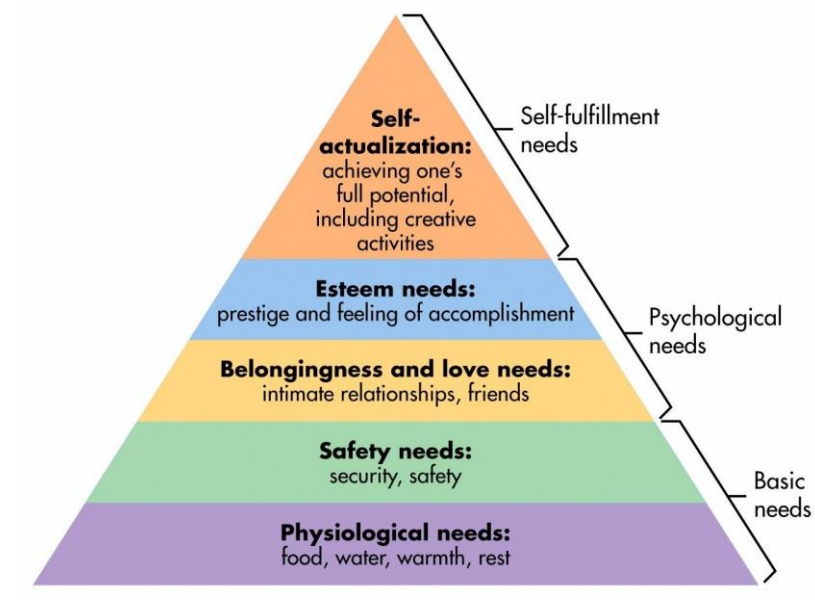
Providing a good work life balance nurtures employees. Motivated employees are less likely to take sick days, leave the organization and will be more prepared to work longer hours. Equally these same employees are more likely to 'burn out' and will feel less motivated if there is not a healthy work life balance. As an organization, it is important to ensure that employees are working reasonable hours and are combining work with activities that promote health and wellbeing.

5. Work environment

Motivated employees thrive in a positive work environment. This refers to the physical and non-physical environment – the physical environment is the office space and surrounding areas. Employees work better in open spaces that stimulate the senses.

Regarding the intangible environment, motivated employees value engagement and communication. Engagement is achieved through many different factors such as, giving regular feedback, development and daily challenges.

Theories of Motivation(Maslow)



1. **Physiological needs** - these are biological requirements for human survival, e.g. air, food, drink, shelter, clothing, warmth, sex, sleep.

If these needs are not satisfied the human body cannot function optimally. Maslow considered physiological needs the most important as all the other needs become secondary until these needs are met.

2. **Safety needs** - Once an individual's physiological needs are satisfied, the needs for security and safety become salient. People want to experience order, predictability and control in their lives. These needs can be fulfilled by the family and society (e.g. police, schools, business and medical care).

For example, emotional security, financial security (e.g. employment, social welfare), law and order, freedom from fear, social stability, property, health and wellbeing (e.g. safety against accidents and injury).

3. **Love and belongingness needs** - after physiological and safety needs have been fulfilled, the third level of human needs is social and involves feelings of belongingness. The need for interpersonal relationships motivates behavior

Examples include friendship, intimacy, trust, and acceptance, receiving and giving affection and love. Affiliating, being part of a group (family, friends, work).

4. **Esteem needs** are the fourth level in Maslow's hierarchy - which Maslow classified into two categories: (i) esteem for oneself (dignity, achievement, mastery, independence) and (ii) the desire for reputation or respect from others (e.g., status, prestige).

Maslow indicated that the need for respect or reputation is most important for children and adolescents and precedes real self-esteem or dignity.

5. **Self-actualization needs** are the highest level in Maslow's hierarchy, and refer to the realization of a person's potential, self-fulfillment, seeking personal growth and peak experiences. Maslow (1943) describes this level as the desire to accomplish everything that one can, to become the most that one can be

Methods of Improving Motivation

1. Recognize great work

One of the **most important factors** that contribute to employee motivation is how often their hard work is recognized. **70%** of employees say that motivation and morale would improve massively with increased recognition from managers. After all, if an employee puts a lot of effort into a project to produce exceptional results but their hard work isn't recognized, why would they continue to be a high-performing employee?

2. Celebrate results

Part of what makes setting small and measurable goals so important is that it provides plenty of opportunities to celebrate your team's hard work.

This doesn't mean you need to give a standing ovation to every employee who made it to work on time, but it is crucial to let everyone know exactly how much each of their contributions move the organization forward.

3. Stay positive

Negative emotions have their place, and some really good process or cultural changes can stem from having tough conversations. However, it's important to find ways to inject positive experiences into your team's interactions to create a **net positive workplace**.

4. Stay fueled

It's hard to stay focused and driven when you're hungry. That's why it's so important for everyone to stay fed, hydrated.

Unfortunately, it's common for employees to become so busy engrossed in their work that they can barely squeeze in time for lunch. That's not great for their health and even worse for their productivity.

5. Take regular breaks

Banging your head against a problem for three hours is rarely productive.

Stepping back and taking a moment to recalibrate isn't just helpful in staying motivated, it's also important to your health.

Sitting all day isn't good for you, and neither is working nonstop. Taking a short break every hour or two can have a positive effect on both your mind and body, especially for **remote workers**. Don't forget to get up from your desk and grab some fresh air.

6. Stay healthy

When you're ill, stay at home! It's unlikely that you'll be getting any of your best work done when you can hardly hold your head up, and not taking the time to rest will only prolong your sickness and prevent your body from recovering.

7. Be transparent

Every relationship, including work relationships, is built on trust. Defaulting to transparency is one of the best ways to encourage an atmosphere of trust amongst you and your team, and a team that trusts you will be more motivated and engaged with their work.

8. Provide clarity

In order to be motivated about your work, it's crucial that you actually understand what your goals and objectives are. For many employees, that

understanding starts with transparency, and ends with clarity. Without clarity, transparency begins to lose its effectiveness and motivational power.

9. Provide a sense of security

We're not talking about hiring a bouncer for your office (although you should make sure your employees feel safe at your workplace!). We're talking about employees feeling secure enough to show their full selves at work.

Once employees feel secure, they're more likely to be motivated to reach, and further stretch their potential.

10. Offer small, consistent rewards

Rewarding employees for their hard work is a motivational rule that nearly goes without saying. However, there are several ways to go about doing that, and some are more effective than others.

Annual bonuses are a common way many employers reward employees for their hard work.

Importance of Communication in Business

Communication is one of the most important functions of management. It promotes managerial efficiency and induces the human elements in an organisation to develop a spirit of cooperation.

1. Efficient and Smooth Running of an Enterprise:

The smooth and efficient functioning of an enterprise entirely depends upon the effectiveness of the system of communication. It provides the necessary basis of direction and leadership. It actuates people to action in accordance with the desires of the management. Without proper communication, performance and achievements of the goals may not be possible.

2. Basis of Decision Making:

Communication is the basis of decision making. It helps the management to take essential decision and conduct vital operations. The quality of decisions made in an organisation entirely depends on the amount and quality of information available to the management. The quality of information depends upon effective communication, and the quality of

communication exercises considerable influence on the quality of decision making. In the absence of effective communication it may not be possible for the top management to come in closer contacts with each other.

3. Proper Planning and Coordination:

Communication is very helpful in planning and coordinating the activities of business. If the system of communication is good, useful suggestions will come from the subordinates to the superiors. This would be helpful in the formation of plans.

4. For Higher Productivity at Minimum Cost:

Effective communication between employers and employees plays a vital role in obtaining maximum production with the minimum of cost. Communication will make the employee feel more secure and more interested in his work.

5. Morale Building:

Communication in industry is the basis for morale building. Under an effective system of communication, it is quite convenient for the employees to bring their grievances to the notice of the management and get a proper adjustment. It creates mutual trust and faith.

6. Binds People Together:

Effective communication induces the human elements in an organization to develop a spirit of cooperation and produces the will to do work before actually doing it. In this way, effective communication binds the people of an organization together.

7. Creates Mutual Trust and Confidence:

Effective communication creates mutual trust and confidence between the management and the labour. It gives job satisfaction to the workers. It is essential for healthy industrial relations. Sharing ideas and experiences with workers eliminates their fears and misunderstanding and helps in winning over their trust and confidence.

TYPES OF COMMUNICATION

1. VERBAL COMMUNICATION

Verbal communication is the use of language to transfer information through speaking or sign language. It is one of the most common types, often used during presentations, video conferences and phone calls, meetings and one-on-one conversations. Verbal communication is important because it is efficient. It can be helpful to support verbal communication with both nonverbal and written communication.

2. NON-VERBAL COMMUNICATION

Nonverbal communication is the use of body language, gestures and facial expressions to convey information to others. It can be used both intentionally and unintentionally. For example, you might smile unintentionally when you hear a pleasing or enjoyable idea or piece of information. Nonverbal communication is helpful when trying to understand others' thoughts and feelings

3. WRITTEN COMMUNICATION

Written communication is the act of writing, typing or printing symbols like letters and numbers to convey information. It is helpful because it provides a record of information for reference. Writing is commonly used to share information through books, pamphlets, blogs, letters, memos and more. Emails and chats are a common form of written communication in the workplace.

4. VISUAL COMMUNICATION

Visual communication is the act of using photographs, art, drawings, sketches, charts and graphs to convey information. Visuals are often used as an aid during presentations to provide helpful context alongside written and/or verbal communication. Because people have different learning styles, visual communication might be more helpful for some to consume ideas and information.

Barriers in Communication

1. Semantic Barriers:

Semantics is the study of right choice of words. The semantic network of sender may be different from that of the receiver and therefore, the message may not be understood as intended.

The word 'profits' has different meaning — pre-tax profits or post-tax profits, fixed amount of profit or rate of return.

(a) Symbols with different meanings — A word can have different meaning in different contexts. Wrong perception leads to communication problems.

(b) Badly expressed message — It may happen on account of omission of needed words, inadequate vocabulary, usage of wrong words, etc.

(c) Unclarified assumptions — Certain assumptions of the communication are subject to different interpretations.

(d) Technical Jargon — Sometimes people may not understand the actual meaning of technical jargon or language used by specialists.

(e) Faulty translations — Sometimes mistakes may creep in if translator who is not proficient in both English and Hindi is involved in translating the communication.

(f) Body language and gesture decoding — Communication may be wrongly perceived if there is no match between what is said and what is expressed in body movements.

2. Psychological/Emotional barriers:

Communication will be disrupted if state of mind of both sender and receiver of communication is not in an ideal position.

(a) Premature evaluation — If a person has pre-conceived notions against the communication, then he will evaluate the meaning of message before the sender completes his message.

(b) Loss by transmission and poor retention — Successive transmission of the message results in inaccurate information. Usually people cannot retain the information for long time if they are inattentive or not interested.

(c) Lack of attention – Non-listening of message due to pre-occupied mind of the receiver acts as a major psychological barrier.

3. Organisational Barriers:

(a) Organisational policy – Effectiveness of communication may be hampered if organisational policy is not supportive to free flow of communications.

(b) Status – A status conscious manager may not allow his subordinates to express their feelings freely.

(c) Rules and regulations – Rigid rules and cumbersome procedures may be a hurdle to communication.

(d) Complexity in organisation structure – Communication gets delayed and distorted if there are number of managerial levels in an organisation.

(e) Organisational facilities – Communications may be hampered if facilities for smooth, clear and timely communications are not provided.

4. Personal Barriers:

(a) Fear of challenge to authority – A superior may withhold or suppress communication if he thinks that a particular communication may adversely affect his authority.

(b) Lack of confidence of superior on his subordinates – Superiors may not seek advice or opinions of their subordinates if they do not have confidence on the competency of their subordinates.

(c) Unwillingness to communicate – If subordinates perceive that it may adversely affect their interests, then they may not be prepared to communicate with their superiors.

(d) Lack of proper incentives – Subordinates may not take initiative to communicate if there is no motivation or incentive for communication.

UNIT-7

HUMAN RELATIONSHIP AND PERFORMANCE IN AN ORGANISATION

A human relation is the relationship between human resources of the organization. Human resource is one of the important assets of an organization. Hence, healthy human relations lead to increased productivity and efficiency. It also plays crucial role in growth and success of the organization.

Relation with Peers, Superiors and Subordinates

It is always an experience to interact with the peer, superior and subordinate groups. All the three groups of people give a different feel and learning, when we interact with them. All the three groups are important and very much existent in all areas of life. Whether it is family, office, friends, mentors, teachers, bosses, acquaintances, etc, all of them are typically divided into three categories.

Peers:

The first category will always be peers because we respond to them very easily and very firstly. We normally tend to be comfortable with them in terms of talking and interacting. One more reason of a person being comfortable with peers is they have similar problems and they empathize very well with each other. For example colleagues in office, friends, cousins, acquaintances, social circles, etc.

Superiors:

The second category is superiors. The teachers, mentors, bosses, family, etc generally fall in this category. They are the ones who are higher than us as far as the knowledge or experience. They expect a certain kind of respectful treatment from us, while we deal with them. We normally tend to take time to interact with them directly; more so, particularly because they also have an expectation barrier to break first with us. They are the ones from whom you learn effortlessly because we know that they know more than us. For example uncles, aunts, bosses, bosses of bosses, mentors, aged consultants, senior positions in any way, etc.

Subordinates:

The third category opens up the scope of being a mentor to others, as well as taking work from them or helping them to cope up. They are lesser either by age, experience, knowledge or relationship and that's why we feel good dealing with them and sometimes even show them off our seniority. They are the ones who need our reciprocation for their growth but still our responses to them are important; if we have to take work from them or they are in our social circles or fall in as a team to achieve targets in professional fronts.

Three golden rules to these three categories are:

- Be a good peer, only then you will be in a position to build up long term relationships for coming days. A good peer is one who values opinion of another peer helps him out when the other one needs and be a good pal who is genuinely interested in other person's growth.
- Be a good superior, only then you will be respected for what you do, by your juniors and appreciated as a team leader. A good superior takes a team to a new height and thereby take the organization and family to highs and achieve targets which are very difficult.
- Be a good subordinate, only then you can enhance the credit of your bosses, mentors which in turn will add to lot of credit to your standing. A good subordinate is one on whom the boss or family can rely on for whatever is given to finish and who gives unbiased opinions and is helpful in decision making with his genuine interest of his superior's progress.

TQM is a continuous process of improvement for individual, groups as well as the entire organization, whereby managers attempt to change the organization's way of working by developing people's knowledge about what to do, how to do, doing it with the right methods and measuring the improvement of the process and the current level of achievement.

TQM is widely used in manufacturing, education, hospitals, call centers, government, and service industries, as well as space and science programs

Basic concepts of TQM

- 1. Quality:** The totality of features and characteristics of product or service that bears on its ability to satisfy stated or implied needs of a customer.
- 2. Quality Policy:** The overall quality intentions and directions of an organization as regards quality formally expressed by top management. The quality policy forms an element of the corporate policy and is authorized by top management.
- 3. Quality Management:** The aspect of the overall management function that determines and implements quality policy. Quality management includes strategic planning, allocation of resources and other systematic activities for quality such as operations and evaluations.
- 4. Quality Assurance:** Quality assurance is all those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy

requirements of a customer. Unless the requirements of customer are fully reflected in the product or service, quality assurance will not be complete. Quality assurance serves as a management tool to provide confidence in supplier/manufacture in contractual situation. While taking a broad view of quality control, we come across different words such as limits, tolerance, allowance, fit etc. These words are described in terms of below limits. Limits for a dimension or other unit of measurement are the two extreme permissible measurements for that dimension or unit.

5. Quality Control: Quality controls are operational techniques and activities that are used to fulfill requirements for quality. Quality control techniques and activities aim both, at monitoring a process and at eliminating causes of unsatisfactory performance at relevant stages of the production in order to achieve economic effectiveness of an organization.

6. Conformity: An affirmative indication or judgment that the supplier/manufacturer of a product or service has met the requirements of the relevant specifications, contract or regulations and also the state of meeting requirements, is the real test of quality.

7. "Quality Circle": QC is a process that stimulates everyone to achieve greater satisfaction in the work environment. It is based on mutual trust and cooperation. It also includes group participation, information sharing and decision making. Its primary aim is to provide a better quality of working life to workmen at all levels in an organization. "QC is a small group of employees in the same work. Work area or doing a similar type of work who voluntarily meet regularly for about an hour every week to identify, analyze and resolve work-related problems, leading to improvement in their total performance and enrichment of their work life".

Workplace (Health, Safety and Welfare) Regulations 1992

The Workplace (Health, Safety and Welfare) Regulations 1992, as amended, apply to all workplaces except ships, building and construction sites.

The creation and maintenance of a safe place of work must be achieved by ensuring:

- workplace structures and buildings are safe at all times
- buildings are stable and suitable for the tasks to be carried out
- environmental conditions, eg heating, lighting and ventilation, provide for the comfort and well-being of employees and are suitable for the nature of work being done
- the workplace is free of hazards arising from the use, storage, transport and disposal of materials, substances and waste
- Floors, walkways and access arrangements (including roads) do not pose a hazard and space should be adequate to allow risk-free movements of people, materials and moving equipment.
- areas where it may be possible to fall from a height are guarded; such areas include:
 - roofs where access is required to ventilation equipment and for other maintenance purposes
 - process operations carried out at different heights (eg filling of high level hoppers, split or mezzanine floors in factories) protection is provided to guard against falling objects

The processes of keeping the workplace clean, ordered and tidy are adequate. provision for sanitary and washing facilities, storage and changing of clothing rest rooms and arrangements for meals and provision of drinking water are adequate

Causes of Accidents

Accidents are events that result from a complex interaction of a variety of factors. There is no single theory that can account for the way all accidents arise. It is possible, however, to recognize some of these factors and interactions to assist in identifying preventive measures. They can be classified into direct and indirect causes.

It is occasionally difficult to draw a line between direct and indirect causes and such classification should not be seen as setting hard and fast approaches to accident prevention and investigation. They do, however, provide a useful way of examining and rationalizing accidents.

Direct causes

These can be seen as directly causing the accident because they are mostly physically observable. They include the immediate and basic causes from Bird's approach and consist of a variety of circumstances and situations.

Unsafe conditions of premises

The conditions at the place of work can be hazardous and will give rise to accidents if the hazards are not controlled. Such conditions can include:

- unsafe design
- environment
- housekeeping
- plant and equipment
- substances
- radiation
- Fire

Maintenance

Failures or inadequacy in the provision of maintenance can give rise to accidents. The absence or inadequacy of maintenance of equipment can also give rise to failures that may cause injury.

Indirect causes

Management systems

Management systems are required to both identify and deliver the required risk control measures. Identification of control measures should be made on the basis of the hazards and associated risk in the workplace leading to the development of effective control measures. These include recruitment and training systems, as well as supervision, monitoring and compliance systems.

Where management systems are less than adequate or absent then the conditions in the organization will tend to be unsafe and the potential for accidents will be increased. The creation and maintenance of management systems is essential in order to comply with the Management of Health and Safety at Work Regulations 1999, Regulation 5(1), which requires every employer to “give effects to such arrangements...for the effective planning, organization, control, monitoring and review of preventive and protective measures”.

PREVENTIVE MEASURES

Accidents are unplanned occurrences that result in injuries, illness, death, and loss of property and/or production. While there is no way to completely eliminate accidents, there are certain plans, preparations, and actions that can be taken to reduce them.

Know the Hazards

- Be aware of surroundings. Look around and identify workplace hazards that could cause harm.
- Look for ways to reduce or eliminate hazards, and implement them.
- Report unsafe areas or practices.
- Dress for the weather.
- Use the EHS Job Hazard Analysis tools to identify hazards associated with job types.

Create a Safe Work Area

- Keep an orderly workplace. Poor housekeeping can cause serious health and safety hazards. The layout of the workplace should have adequate egress routes and be free of debris.
- Inspect vehicles before and after use. DRIVE SAFELY.
- Continually cultivate a safety standard.
- Take breaks and move around regularly throughout the day. Small breaks (standing up and moving around) can make a big difference in combating the dangers of staying in a static position all day long.
- Pay attention to workstation ergonomics.

Use Safe Lifting Techniques

Follow the following safe lifting practices:

- Lift from a position of power
- Keep the load close
- Use a staggered stance
- Don't twist while lifting
- Training in body mechanics can reduce strain injuries and keep employees safe during lifting and moving.

Personal Protective Equipment

- The proper use of Personal Protective Equipment (PPE) can dramatically reduce the risk of injury. Examples of PPE include gear such as earplugs, hard hats, safety goggles, gloves, air-purifying respirators and safety shoes.

Regular Communication

- Notify supervisors about safety hazards.
- Speak up and be involved in safety planning.
- Continually cultivate a safety standard.

Education and Training

- Ensure everyone has the proper safety training relating to the hazards of the job.
- Take advantage of Environmental Health and Safety online training programs. It is each employee's responsibility to take an active role in maintaining safety.

GENERAL SAFETY RULES

1. Report all work injuries and illnesses immediately.
2. Report all Unsafe Acts or Unsafe Conditions to your Supervisor.
3. Use seat belts when on Company business in any vehicles.
4. Firearms, weapons, or explosives are not permitted on Company Property.
5. Use, possession, sale or being under the influence of illegal drugs, misuse of prescription drugs and/or alcohol is not permitted on Company Property or while "on duty".
6. Only authorized and trained Employees may repair or adjust machinery and equipment. Lock and Tag out Procedures must be followed before removing any machine guards or working on powered machinery and equipment. Replace all guards when the job is completed.
7. Only qualified and trained Employees may work on or near Exposed Energized Electrical Parts or Electrical Equipment. Follow Electrical Safety Rules when working with electrically powered machinery and equipment.
8. Only authorized and trained Employees may enter a posted Confined Space. All confined spaces will be posted Confined Space - Permit Required. Entry is allowed only after permits are properly issued.
9. Only authorized and trained Employees may dispense or use chemicals. It is your responsibility to know where SDS's (Safety Data Sheets) are located and that they are available for your use and review.
10. Keep work areas clean and aisles clear. Do not block emergency equipment or exits.
11. Wear and use the prescribed Personal Protective Safety Equipment. This includes foot protection, head protection, gloves, etc.
12. Smoking is permitted only in the designated "Smoking Areas".

Personal protective equipment (PPE)

PPE is equipment that will protect the user against health or safety risks at work. It can include items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear and safety harnesses. It also includes respiratory protective equipment (RPE).

UNIT-8

LEGISLATION

The term "Intellectual Property Rights" refers to the legal rights granted with the aim to protect the creations of the intellect. These rights include Industrial Property Rights (e.g. patents, industrial designs and trademarks) and Copyright (right of the author or creator) and Related Rights (rights of the performers, producers and broadcasting organizations)

In most countries, there are four primary types of intellectual property (IP) that can be legally protected: patents, trademarks, copyrights, and trade secrets each have their own attributes, requirements and costs.

1. Patent-

A patent is the granting of a property right by a sovereign authority to an inventor. A patent provides the inventor exclusive rights to the patented process, design, or invention for a certain period in exchange for a complete disclosure of the invention.

2. Trademark-

A trademark is a brand name. A trademark or service mark includes any word, name, symbol, device, or any combination, used or intended to be used to identify and distinguish the goods/services of one seller or provider from those of others, and to indicate the source of the goods/services.

3. Copyright-

Copyright refers to the legal right of the owner of intellectual property. In simpler terms, copyright is the right to copy. This means that the original creators of products and anyone they give authorization to are the only ones with the exclusive right to reproduce the work.

SALIENT FEATURES OF FACTORY ACT 1948

The main objectives of the Indian Factories Act, 1948 are to regulate the working conditions in factories, to regulate health, safety welfare, and annual leave and enact special provision in respect of young persons, women and children who work in the factories.

1. Working Hours:

According to the provision of working hours of adults, no adult worker shall be required or allowed to work in a factory for more than 48 hours in a week. There should be a weekly holiday.

2. Health:

For protecting the health of workers, the Act lays down that every factory shall be kept clean and all necessary precautions shall be taken in this regard. The factories should have proper drainage system, adequate lighting, ventilation, temperature etc. Adequate arrangements for drinking water should be made. Sufficient latrine and urinals should be provided at convenient places. These should be easily accessible to workers and must be kept cleaned.

Cleanliness {Section 11}

Every factory should be kept clean and free from effluvia (Harmful discharge) arising from any drain.

Disposal of wastes and effluents {Section 12}

Effective arrangements should be made in every factory for the treatment and effluents due to the manufacturing process and for their disposal.

Ventilation and temperature {Section 13}

Effective and suitable provisions should be made in every factory for securing and maintaining in every workroom; adequate ventilation by the circulation of fresh air.

Dust and fume {Section 14}

Effective measures should be taken to prevent inhalation of dust and fume that may produce in the course of manufacturing process.

Artificial humidification {Section 15}

In any factory where the humidity of air is artificially increased, the State Government may make rules prescribing standards of humidification; regulating the methods used for artificially increasing humidity of the air; and directing prescribed test for determining the humidity of the air to be correctly carried out and recorded; and prescribing methods to be adopted for securing adequate ventilation and cooling of the air in the workrooms.

Overcrowding {Section 16}

No room in any factory should lie overcrowded to an extent injurious to the health of the workers employed therein.

Lighting {Section 17}

In every part of a factory where workers are working or passing, there should be provided and maintained sufficient and suitable lighting, natural or artificial, or both.

Drinking water {Section 18}

In every factory effective arrangements should be made to provide sufficient supply of drinking water.

Latrines and urinals {Section 19}

In every factory sufficient latrine and urinal point and also separate for male and female workers, at all times while they are at the factory.

Spittoons {Section 20}

In every factory there should be provided a sufficient number of spittoons in convenient places and they shall be maintained in a clean and hygienic condition.

3. Safety:

In order to provide safety to the workers, the Act provides that the machinery should be fenced, no young person shall work at any dangerous machine, in confined spaces, there should be provision for manholes of adequate size so that in case of emergency the workers can escape.

- The machinery in every factory should be properly fenced. **{Section 21}**
- Only the trained adult male worker, wearing tight fitting clothing which should be supplied by the Occupier, should be allowed to work near the machinery in motion. **{Section 22}**
- No young person shall be employed on dangerous machinery, unless he is fully instructed as to the danger arising in connection with the machine and the precautions to be observed and he has received sufficient training in work at the machine. **{Section 23}**
- Suitable arrangements should be made to provide striking gear and devices for cutting off power in case of emergencies. **{Section 24}**
- Sufficient precautions should be taken with regard to self-acting machines to avoid accidents. **{Section 25}**
- To prevent danger, all machinery driven by power should be encased and effectively guarded. **{Section 26}**
- Woman worker and children should not be employed in any part of the factory for pressing cotton in which a cotton-opener is at work. **{Section 27}**
- Hoists and Lifts in a factory should be periodically inspected by the Competent Person. **{Section 28}**
- Lifting Machines, Chains, Ropes and Lifting Tackles in a factory should be periodically inspected by the Competent Person. **{Section 29}**

- Where process of grinding is carried on, a notice indicating the maximum safe working peripheral speed of every grind-stone or abrasive wheel etc., should be fixed to the revolving machinery. **{Section 30}**
- Where any plant or machinery or any part thereof is operated at a pressure above atmospheric pressure, effective measures should be taken to ensure that the safe working pressure of such plant or machinery or part is not exceeded. **{Section 31}**
- Floors, stairs and means of access should be soundly constructed and properly maintained. **{Section 32}**
- Pits, sumps opening in floor etc., should be either securely covered or fenced. **{Section 33}**
- No workman shall be employed in any factory to lift, carry or move any load so heavy as to be likely to cause him injury. **{Section 34}**
- Necessary protective equipment should be provided to protect the eyes of the workman, where the working involves risk of injury to the eyes. **{Section 35}**

4. Welfare:

For the welfare of the workers, the Act provides that in every factory adequate and suitable facilities for washing should be provided and maintained for the use of workers.

Facilities for storing and drying clothing, facilities for sitting, first-aid appliances, shelters, rest rooms' and lunch rooms, crèches, should be there.

- Adequate and suitable 'washing facilities' should be provided in every factory. **{Section 42}**
- Provision should be made to provide suitable places for keeping clothing not worn during working hours and for the drying of wet clothing. **{Section 43}**
- In every factory, suitable arrangements for sitting should be provided and maintained for all workers obliged to work in a standing position, in order that they may take advantage of any opportunities for rest which may occur in the course of their work. **{Section 44}**
- First-Aid Boxes with the prescribed contents should be provided and maintained so as to be readily accessible during all working hours at the rate of at least one Box for every 150 workmen. **{Section 45}**
- In every factory wherein more than 500 workers are employed there should be provided and maintained an Ambulance containing the prescribed equipment and in the charge of such medical and nursing staff. **{Section 45(4)}**
- The Occupier should provide a canteen for the use of workers in every factory, where the number of workmen employed is more than 250. **{Section 46}**
- In every factory wherein more than 150 workers are employed adequate and suitable shelters or rest rooms and a suitable lunch room, with provision for

drinking water, where workers can eat meals brought by them, should be provided and maintained for the use of the workers. **{Section 47}**

- In every factory wherein more than 30 women workers are ordinarily employed there should be provided and maintained a suitable room for the use of children under the age of six years of such women. **{Section 48}**

5. Penalties:-

The provisions of The Factories Act, 1948, or any rules made under the Act, or any order given in writing under the Act is violated, it is treated as an offence. The following penalties can be imposed:-

- (a) Imprisonment for a term which may extend to one year;
- (b) Fine which may extend to one lakh rupees; or
- (c) Both fine and imprisonment.

If a worker misuses an appliance related to welfare, safety and health of workers, or in relation to discharge of his duties, he can be imposed a penalty of Rs. 500/-.

Salient features of the payment of wages act 1936

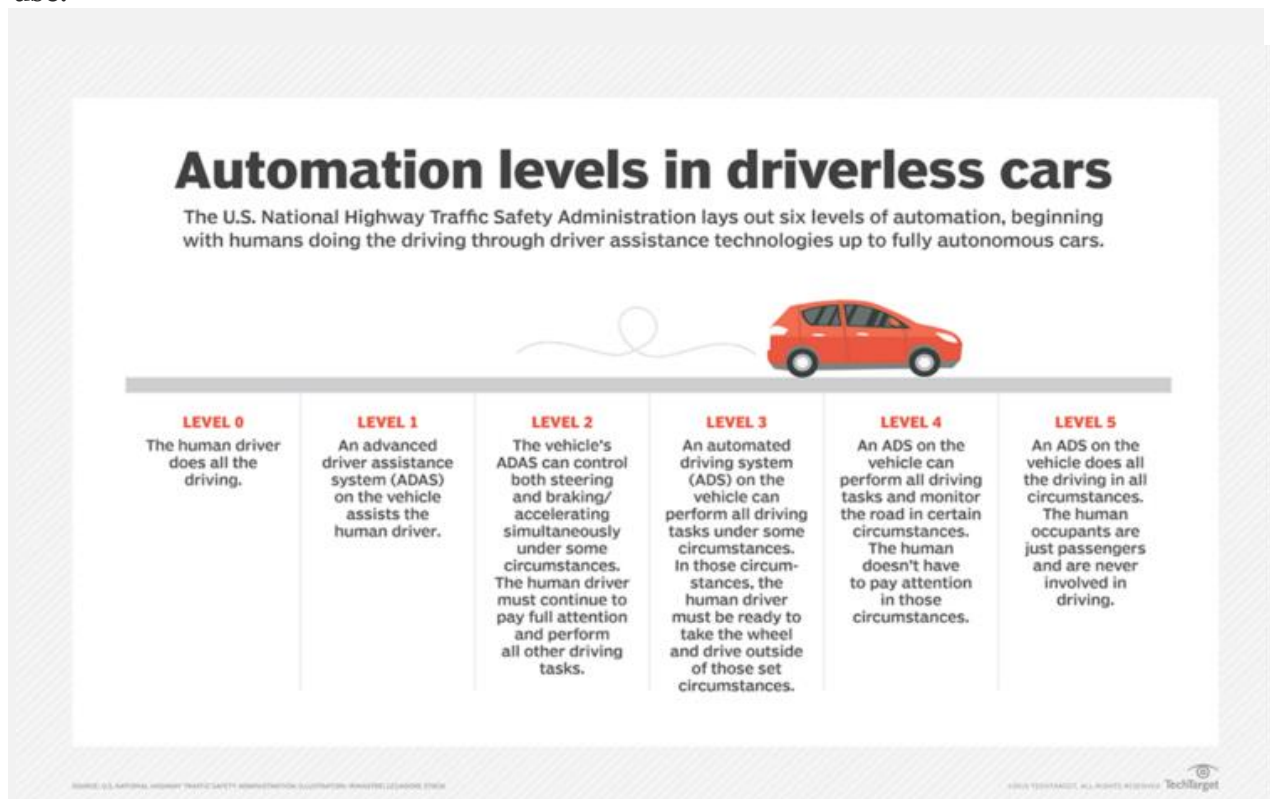
- a) The Act was formed with the intention to regulate timely payment of wages to specific class of workers employed in industry without any wrongful deductions apart from what is mentioned in the Act.
- b) The Act ensures that the salary be paid by **7th of each month** in factories/establishments having a workforce of less than 1000 workers and by **10th of each month** in other cases.
- c) The Act ensures fixing of wage period, time and mode of payment of wages.
- d) The Act does not cover those whose wage is **Rs. 24,000/-** or more per month.
- e) The Act provides a worker with its duly right as covered under the Act.
- f) The Act empowers a worker to file a claim directly or through a Trade Union or through an Inspector, before with the Authority appointed under the Payment of Wages Act in case there is a delay in wages or in case of an unauthorized deduction

What is IoT?

The IoT is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators and connectivity which enables these things to connect and exchange data. The term “Thing” in “Internet of Things” is used quite broadly. For example, a thing within the IoT could be a person with a heart monitor implant, a pet with a biochip transponder, a vehicle that has built-in sensors to alert the driver when tire pressure is low — or any other natural or man-made object that an IP address can be assigned to, thus gaining the ability to transfer data over a network. As a result, it is becoming increasingly easy to create opportunities to directly integrate the physical world into computer-based systems which results in improvements, efficiency, economic benefits and reduced human exertion(Physical or Mental effort).

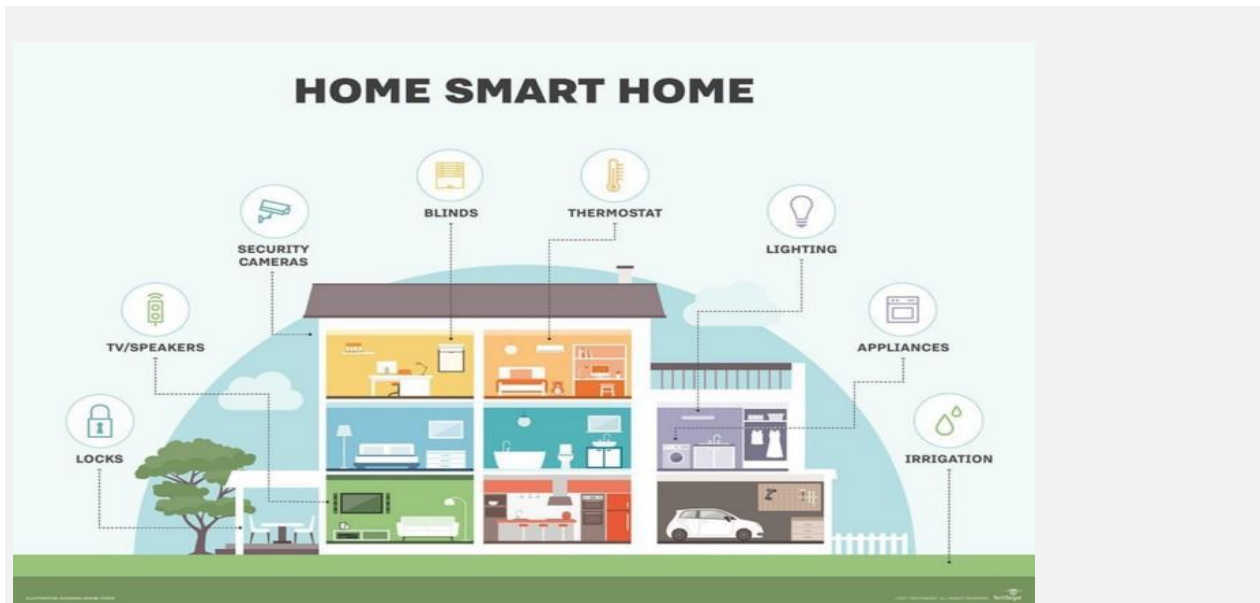
IoT Example: Autonomous Vehicles

An autonomous vehicle, sometimes referred to as self-driving cars or driverless cars, is a vehicle that uses a combination of sensors, camera, radar and artificial intelligence (AI) to travel between destinations without a human operator. In order to qualify as being completely autonomous, a vehicle must be able to navigate without needing human intervention to a predetermined destination via roads that have not been adapted for its use.



IoT Example: Smart Homes

Smart Home technology, also known as home automation is a classic example of the IoT in practice. Home automation provides home owners with comfort, security, convenience and improves energy efficiency by affording them the ability to control other smart devices, usually via a smart home app on their smartphone or a different networked device. Smart home systems and devices operate together and share consumer usage data among themselves in order to automate actions based on the owner's preferences.



Today, almost every appliance associated with domestic life has a smart home option. A few examples:

- Smart TVs connect to the internet to access content through applications, such as on-demand video and music. Some smart TVs also include voice or gesture recognition.
- Using smart locks and garage-door openers, users can grant or deny access to visitors. Smart locks can also detect when residents are near and unlock the doors for them.
- Pet care can be automated with connected feeders. Houseplants and lawns can be watered by way of connected timers.

IoT Explained

A complete IoT system integrates four distinct components: sensors/devices, connectivity, data processing, and a user interface. Below I will briefly explain each component and what it does.

1) Sensors/Devices

First, sensors or devices collect data from their environment. This could be as simple as a temperature reading or as complex as a full video feed.

I use “sensors/devices,” because multiple sensors can be bundled together or sensors can be part of a device that does more than just sense things. For example, your phone is a device that has multiple sensors (camera, accelerometer, GPS, etc), but your phone is not *just* a sensor.

However, whether it’s a standalone sensor or a full device, in this first step data is being collected from the environment by *something*.

2) Connectivity

Next, that data is sent to the cloud. The sensors/devices can be connected to the cloud through a variety of methods including: cellular, satellite, WiFi, Bluetooth, low-power wide-area networks (LPWAN), or connecting directly to the internet via ethernet.

Each option has tradeoffs between power consumption, range and bandwidth .

Choosing which connectivity option is best comes down to the specific IoT application, but they all accomplish the same task: getting data to the cloud.

3) Data Processing

Once the data gets to the cloud, software performs some kind of processing on it.

This could be very simple, such as checking that the temperature reading is within an acceptable range. Or it could also be very complex, such as using computer vision on video to identify objects such as intruders (in order to commit crime) in your house.

But what happens when the temperature is too high or if there *is* an intruder in your house? That’s where the user comes in.

4) User Interface

Next, the information is made useful to the end-user in some way. This could be via an alert to the user (email, text, notification, etc). For example, a text alert when the temperature is too high in the company’s cold storage.

Also, a user might have an interface that allows them to proactively check in on the system. For example, a user might want to check the video feeds in their house via a phone app or a web browser.

However, it’s not always a one-way street. Depending on the IoT application, the user may also be able to perform an action and affect the system. For example, the user might remotely adjust the temperature in the cold storage via an app on their phone.

And some actions are performed automatically. Rather than waiting for you to adjust the temperature, the system could do it automatically via predefined rules. And rather than just call you to alert you of an intruder, the IOT system could also automatically notify relevant authorities.

Components of IOT

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 (Radio Frequency Identification), temperature sensors, light sensors, electromagnetic sensors, etc. are used. For example, smart phones 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 Human activity 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.

4. Compute Engines

Industry grade IOT systems typically use multiple technology stacks inside an umbrella. For example in insurance premiums can be calculated as a variable component as per the driving pattern of the insurer. The data collected from smart devices are converted and preprocessed to a format on which machine learning models are developed.

Customers can use any cloud partners of their choice or develop their own infrastructure to execute a use case.

For example, the compute engines from PaaS (Product as a service) or IaaS (IoT as service) will differ from on-premise systems.

5. Technology and Governance Standards

Sensitive information flow over the various components of the IoT ecosystem. To cope up with this the systems need to adhere to proper technique and governance standard and KPIs

- Typical Technical standards: Wi-Fi, WAN, etc.
- Network Protocols: HTTP, TCP/IP, UDP, etc.
- Data management standards: ETL, CAP (for distributed systems), etc.
- IoT systems need to follow the regulations and quality standards of respective regulatory authorities and business standards.

6. Intelligent Insights and Actions

Most of the practical and industry-grade IoT use cases are intended to derive business insights or actionable recommendations. The preprocessed data need to be integrated with ML components and the trained models are deployed to the production environment. The choice of the technology stack to develop the intelligent business component is dependent on the compatibility with the in house existing systems, the scale of the business, the complexity of the use case, and precision and latency requirements of the domain, company partnerships, etc.

Characteristics of IoT:

1. **Connectivity.** This doesn't need too much further explanation. With everything going on in IoT devices and hardware, with sensors and other electronics and connected hardware and control systems there needs to be a connection between various levels.

2. **Things.** Anything that can be tagged or connected as such as it's designed to be connected. From sensors and household appliances to tagged livestock. Devices can contain sensors or sensing materials can be attached to devices and items.
3. **Data.** Data is the glue of the Internet of Things, the first step towards action and intelligence.
4. **Communication.** Devices get connected so they can communicate data and this data can be analyzed. Communication can occur over short distances or over a long range to very long range. Examples: Wi-Fi, LPWA network technologies such as LoRa or NB-IoT.
5. **Intelligence.** The aspect of intelligence as in the sensing capabilities in IoT devices and the intelligence gathered from big data analytics (also artificial intelligence).
6. **Action.** The consequence of intelligence. This can be manual action, action based upon debates regarding phenomena (for instance in smart factory decisions) and automation, often the most important piece.
7. **Ecosystem.** The place of the Internet of Things from a perspective of other technologies, communities, goals and the picture in which the Internet of Things fits. The Internet of Everything dimension, the platform dimension and the need for solid partnerships.

Categories of IOT

1. LPWANs

Low Power Wide Area Networks (LPWANs) are the new phenomenon in IoT. By providing long-range communication on small, inexpensive batteries that last for years, this family of technologies is purpose-built to support large-scale IoT networks sprawling over vast industrial and commercial campuses.

LPWANs can literally connect all types of **IoT sensors** – facilitating numerous applications from asset tracking, environmental monitoring and facility management to occupancy detection and consumables monitoring. Nevertheless, LPWANs can only send small blocks of data at a low rate, and therefore are better suited for use cases that don't require high bandwidth and are not time-sensitive.

2. Cellular (3G/4G/5G)

Well-established in the consumer mobile market, cellular networks offer reliable broadband communication supporting various voice calls and video streaming applications. On the downside, they impose very high operational costs and power requirements.

While cellular networks are not viable for the majority of IoT applications powered by battery-operated sensor networks, they fit well in specific use cases such as connected

cars or fleet management in transportation and logistics. For example, in-car infotainment, traffic routing, advanced driver assistance systems (ADAS) alongside fleet telematics and tracking services can all rely on the ubiquitous and high bandwidth cellular connectivity.

Cellular next-gen 5G with high-speed mobility support and ultra-low latency is positioned to be the future of autonomous vehicles and augmented reality. 5G is also expected to enable real-time video surveillance for public safety, real-time mobile delivery of medical data sets for connected health, and several time-sensitive industrial automation applications in the future.

3. Zigbee and Other Mesh Protocols

Zigbee is a short-range, low-power, wireless standard (IEEE 802.15.4), commonly deployed in mesh topology to extend coverage by relaying sensor data over multiple sensor nodes. Compared to LPWAN, Zigbee provides higher data rates, but at the same time, much less power-efficiency due to mesh configuration.

Because of their physical short-range (< 100m), Zigbee and similar mesh protocols (e.g. Z-Wave, Thread etc.) are best-suited for medium-range IoT applications with an even distribution of nodes in close proximity. Typically, Zigbee is a perfect complement to Wi-Fi for various home automation use cases like smart lighting, HVAC controls, security and energy management, etc. – leveraging home sensor networks.

4. Bluetooth and BLE

Defined in the category of Wireless Personal Area Networks, Bluetooth is a short-range communication technology well-positioned in the consumer marketplace. Bluetooth Classic was originally intended for point-to-point or point-to-multipoint (up to seven slave nodes) data exchange among consumer devices. Optimized for power consumption, Bluetooth Low-Energy was later introduced to address small-scale **Consumer IoT** applications.

BLE-enabled devices are mostly used in conjunction with electronic devices, typically smartphones that serve as a hub for transferring data to the cloud. Nowadays, BLE is widely integrated into **fitness and medical wearables** (e.g. smartwatches, glucose meters, pulse oximeters, etc.) as well as **Smart Home devices** (e.g. door locks) – whereby data is conveniently communicated to and visualized on smartphones.

5. Wi-Fi

There is virtually no need to explain Wi-Fi, given its critical role in providing high-throughput data transfer for both enterprise and home environments.

However, in the IoT space, its major limitations in coverage, scalability and power consumption make the technology much less prevalent.

Imposing high energy requirements, Wi-Fi is often not a feasible solution for large networks of battery-operated IoT sensors, especially in industrial IoT and smart building scenarios. Instead, it more pertains to connecting devices that can be conveniently connected to a power outlet like **smart home gadgets and appliances, digital signages or security cameras**.

Wi-Fi 6 – the newest Wi-Fi generation – brings in greatly enhanced network bandwidth (i.e. <9.6 Gbps) to improve data throughput per user in congested environments. With

this, the standard is poised to level up public Wi-Fi infrastructure and transform customer experience with **new digital mobile services** in retail and mass entertainment sectors. Also, **in-car networks for infotainment and on-board diagnostics** are expected to be the most game-changing use case for Wi-Fi 6. Yet, the development will likely take some more time.

6. RFID

Radio Frequency Identification (RFID) uses radio waves to transmit small amounts of data from an RFID tag to a reader within a very short distance. Till now, the technology has facilitated a major revolution in **retail** and **logistics**.

By attaching an RFID tag to all sorts of products and equipment, businesses can track their inventory and assets in real-time – allowing for better stock and production planning as well as optimized **supply chain management**. Alongside increasing IoT adoption, RFID continues to be entrenched in the retail sector, enabling new IoT applications like smart shelves, self-checkout, and smart mirrors.

Applications of IOT

Smart home

Smart Home clearly stands out, ranking as highest Internet of Things application on all measured channels. More than 60,000 people currently search for the term “Smart Home” each month. This is not a surprise. The IoT Analytics company database for Smart Home includes 256 companies and startups. More companies are active in smart home than any other application in the field of IoT. The total amount of funding for Smart Home startups currently exceeds \$2.5bn. This list includes prominent startup names such as Nest or AlertMe as well as a number of multinational corporations like Philips, Haier, or Belkin.

Smart City

Smart city spans a wide variety of use cases, from traffic management to water distribution, to waste management, urban security and environmental monitoring. Its popularity is fueled by the fact that many Smart City solutions promise to alleviate real pains of people living in cities these days. IoT solutions in the area of Smart City solve traffic congestion problems, reduce noise and pollution and help make cities safer

Smart Agriculture

Statistics estimate the ever-growing world population to reach nearly 10 billion by the year 2050. To feed such a massive population one needs to marry agriculture to technology and obtain best results. There are numerous possibilities in this field. One of them is the **Smart Greenhouse**.

A greenhouse farming technique enhances the yield of crops by *controlling environmental parameters*. However, manual handling results in production loss, energy loss, and labor cost, making the process less effective.

A greenhouse with embedded devices not only makes it easier to be monitored but also, enables us to control the climate inside it. Sensors measure different parameters according to the plant requirement and send it to the cloud. It, then, processes the data and applies a control action.

SmartEnergy

As worldwide energy consumption is expected to grow by 40% over the next 25 years, the need for smarter energy solutions has reached an all-time high. IoT is revolutionizing nearly every part of the energy industry from generation to transmission to distribution and changing how

energy companies and customers interact. Both solution providers and energy companies themselves understand the need for and value of connected IoT solutions in the sector

Smart Transportation

Smart transportation, a key internet of things vertical application, refers to the integrated application of modern technologies and management strategies in transportation systems. These technologies aim to provide innovative services relating to different modes of transport and traffic management and enable users to be better informed and make safer and 'smarter' use of transport networks.

In 2010, the European Union had defined Intelligent Transportation Systems (ITS) as a systems "in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport."

Smart transportation includes the use of several technologies, from basic management systems such as car navigation; traffic signal control systems; container management systems; automatic number plate recognition or speed cameras to monitor applications, such as security CCTV systems; and to more advanced applications that integrate live data and feedback from a number of other sources.

Smart Healthcare

IoT for healthcare can also be used for research purposes. It's because **IoT** enables us to collect a massive amount of data about the patient's illness which would have taken many years if we collected it manually. ... Even the existing devices are now being updated by **IoT** by simply **using** embedding chips of a **smart** devices.

Smart Industry

The Industrial world is changing in a trend which goes under a variety of names including **Industry 4.0**, **Industrial Internet of Thing (IIoT)** and **smart manufacturing**. This *Smart Industry* trend is bringing about a fundamental change in the way factories and workplaces function, making them safer, more efficient, more flexible and more environmentally friendly. With factories accounting for 40% of the world's energy consumption, reducing their energy use will play a major role in putting the planet on a more sustainable course. Machines are evolving to be aware of the humans around them and provide new interfaces such as smart tools, augmented reality and touchless interfaces for easier and safer interactions. Machines are also becoming connected inside the factory and to the cloud, enabling optimal planning and flexibility in manufacturing and maintenance.