

THE MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
Lobachevsky State University of Nizhni Novgorod
National Research University

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Business Economics

Tutorial

Recommended by the Methodical Commission
of the institute of economics and entrepreneurship for International Students,
studying at the B.Sc. Programme 38.03.01 “Economics” in English

Nizhni Novgorod

2017

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

**Федеральное государственное автономное
образовательное учреждение высшего образования
«Национальный исследовательский Нижегородский государственный
университет им. Н.И. Лобачевского»**

Институт экономики и предпринимательства

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Экономика фирмы

Учебно-методическое пособие

*Рекомендовано методической комиссией института экономики и предпринимательства для
иностраных студентов, обучающихся в ННГУ по направлению подготовки 38.03.01
«Экономика» (бакалавриат)
на английском языке*

Нижний Новгород

2017

УДК 658(075)

ББК 65.29я73

У 28

У 28 Удалов А.С., Удалова Н.А. Экономика фирмы: Учебно-методическое пособие. – Нижний Новгород: Нижегородский госуниверситет, 2017. – 45 с.

Рецензент: к.э.н., доцент Гриневич Ю.А.

В настоящем пособии изложены учебно-методические материалы по курсу «Экономика фирмы» для иностранных студентов, обучающихся в ННГУ по направлению подготовки 38.03.01 «Экономика» (бакалавриат).

Учебно-методическое пособие предназначено для студентов факультета иностранных студентов обучающихся по направлению подготовки 38.03.01 «Экономика»

Ответственный за выпуск:
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УДК 658(075)

ББК 65.29я73

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Unit 1: The firm as an economic subject

1.1 Essence of a firm

A business, also known as a firm or an enterprise, is an organization involved in the trade of goods, services, or both to consumers. Businesses are prevalent in capitalist economies, where most of them are privately owned and provide goods and services to customers in exchange for other goods, services, or money. Businesses may also be state-owned. A business owned by multiple individuals may be referred to as a company.

The etymology of "business" stems from the idea of being busy, and implies socially valuable and rewarding work. Business can refer to a particular organization or, more generally, to an entire market sector, e.g. "the music business". Compound forms such as agribusiness represent subsets of the word's broader meaning, which encompasses all activity by suppliers of goods and services.

The main characteristics of business are:

1. *Entrepreneur*: There must be someone to take initiative for establishing a business. The person who recognises the need for a product or service is known as entrepreneur. The entrepreneur is a key figure in the process of economic growth. The quality of entrepreneurship existing in any region determines the development of that region. The entrepreneur visualizes a business, combines various factors of production and puts them into a going concern.

2. *Economic Activities*: A Business includes only economic activities. All those activities relating to the production and distribution of goods and services are called economic activities. These activities are under-taken with economic motive. Business is carried on with a profit motive. Any activity undertaken without economic consideration will not be a part business. So, business covers only economic activities.

3. *Exchange of Goods and Services*: A business must involve exchange of goods and services. The goods to be exchanged may either be produced or procured from other sources. The exchange of goods and services is undertaken with profit motive. Production or purchasing of goods and services for personal consumption do not constitute business. The purchase of goods by a retailer constitutes business while the purchase of goods by a consumer is not business. The purchase of goods should be to sell them again. The same principle is applicable to services. If a person cooks his food at home it is not business, but if the same person cook at a restaurant, it is business, because he exchange his services for money.

4. *Profit Motive*: The profit motive is an important element of business. Any activity undertaken without profit motive is not business. A businessman tries to earn more and more profits out of his business activities. The incentive for earning profits

keeps a person in business and is also necessary for the continuity of the business. This does not mean that there will not be losses in business. The object of starting a business is to earn profit, though there may be losses. The profit motive does not entitle a businessman to start exploiting the consumers. The responsibility of business towards society restricts a businessman from earning exorbitant profit. The business activity will flourish more when the business serves the society.

5. *Risk and Uncertainty*: The business involves larger element of risk and uncertainty. In fact a business tries to foresee any future uncertainties and plan his business activities accordingly. The factors on which business depends are never certain, so the business opportunities will also be uncertain. These may be shift in demand, strike by employees, floods, war, fall in prices, fluctuations in money market etc. If a businessman is able to foresee uncertainties and is able to bear them, then he will successful, otherwise he may be forced out of business. The risk element in business keeps a person vigilant and he tries to ward off his risk by executing his policies properly.

6. *Continuity of Transactions*: In business, only those transactions are included which have regularity and continuity. An isolated transaction will not be called business, even if the person earns from that deal (e.g. a person builds a house for himself, but later on sells it on profit). So the transactions should have continuity and regularity, otherwise they will not be a part of business.

7. *Creation of Utility*: The utility may be form utility, place utility, time utility etc. When raw materials are converted into finished goods, it creates form utility. The goods are transported from the places of production to the ultimate consumers; it creates place utility. In the present industrial world, production is not done only for the present but it is undertaken for the future also. The process of storing goods when they are not required and supplying them at a time when they are needed is called creation of time utility. So the business creates many utilities in goods so that the consumers may use them according to their preferences and needs.

8. *Organization*: Every enterprise needs an organization for its successful working. Various business activities are divided into departments, sections, and jobs. An organization creates the framework for managerial performance and helps in coordinating various business activities. A proper organization is helpful in the smooth running of the business and helps to achieve its objectives.

9. *Financing*: Business enterprises cannot move a step without finance. The finances are required for providing fixed and working capital. The availability of other factors of production also depends upon the availability of finances. After estimating its financial requirements, the businessman tries to find out the sources from which these requirements will be met. A proper capital structure is needed for the success of the business.

10. *Consumer Satisfaction*: The goods are produced for the consumers. If the consumer is satisfied, then he will purchase the same thing again, otherwise he will look for an alternative commodity. The business should try to satisfy the consumer to

maintain the demand for his products. The existence and expansion of business depends upon the liking of the consumers for the products of that business. The businessman should try to produce goods according to the likings and tastes of consumers. The commodities should be made available when they are needed. Business and consumers exist for each other.

11. Satisfying Social Need: The business should also aim at serving the society. The business is a socio-economic institution. It must look to the public good. A great emphasis is laid, now-a-days, on the social aspect of business and social obligations of business. It is not only the public which needs business but business also needs public support. So business must serve public purpose.

Economic objectives of firms:

1. Profit maximization.

An assumption in classical economics is firms seek to maximise profits. Higher profit means:

- Higher dividends for shareholders.
- More profit can be used to finance research and development.
- Higher profit makes the firm less vulnerable to takeover.
- Higher profit enables higher salaries for workers

However, in the real world, firms may pursue other economic objectives apart from profit maximisation.

2. Profit Satisficing

In many firms there is separation of ownership and control. Those who own the company (shareholders) often do not get involved in the day to day running of the company.

This is a problem because although the owners may want to maximise profits, the managers have much less incentive to maximise profits because they do not get the same rewards, (share dividends)

Therefore managers may create a minimum level of profit to keep the shareholders happy, but then maximise other objectives, such as enjoying work, getting on with other workers. (e.g. not sacking them) This is the problem of separation between owners and managers.

This 'principal agent' problem can be overcome, to some extent, by giving managers share options and performance related pay although in some industries it is difficult to measure performance.

3. Sales Maximisation.

Firms often seek to increase their market share – even if it means less profit. This could occur for various reasons:

- Increased market share increases monopoly power and may enable the firm to put up prices and make more profit in the long run.

- Managers prefer to work for bigger companies as it leads to greater prestige and higher salaries.

- Increasing market share may force rivals out of business. E.g. supermarkets have led to the demise of many local shops. Some firms may actually engage in predatory pricing which involves making a loss to force a rival out of business.

4. *Growth Maximisation.*

This is similar to sales maximisation and may involve mergers and takeovers. With this objective, the firm may be willing to make lower levels of profit in order to increase in size and gain more market share.

5. *Long Run Profit Maximisation.*

In some cases, firms may sacrifice profits in the short term to increase profits in the long run. For example, by investing heavily in new capacity, firms may make a loss in the short run, but enable higher profits in the future.

Non-economic objectives of a firm:

1. *Welfare of employees*

The provision of employee welfare is an important objective; this relates to issues such as wages & salaries; comfortable and safe working conditions, training and development; pensions etc. The value of many businesses is critically-dependent on attracting and retaining high quality employees – which makes managing the welfare of such people even more important.

2. *Serving customers*

As all marketers understand, a critical activity of business is to understand and meet the needs and wants of customers. In the long-term, this objective is the foundation for a financially successful business. Non-financial objectives under this heading would include meeting defined delivery standards, product quality, reliability and after-sales service levels.

3. *Welfare of management*

Management can, and do set objectives which are essentially about their own welfare. These include objectives in relation to pay and conditions.

4. *Relationships with Suppliers*

Responsibilities to suppliers are expressed mainly in terms of trading relationships. Large businesses often have considerable buying power over their suppliers – which should be used with care. Supplier objectives would include those relating to the timing of payment and other terms of trade.

5. *Responsibilities to Society*

Businesses increasingly aware of their overall responsibility to society at large. The term that is often used is Corporate Social Responsibility. This includes a business complying with relevant laws and regulations (e.g. health and safety), minimising harmful externalities (such as pollution).

1.2 The market environment of the company.

The environment is a marketing term and refers to factors and forces that affect a firm's ability to build and maintain successful relationships with customers. Three levels of the environment are:

- Micro (internal) environment - small forces within the company that affect its ability to serve its customers.
- Meso environment – the industry in which a company operates and the industry's market(s).
- Macro (national) environment - larger societal forces that affect the microenvironment.

1. *Micro Environment (near environment)*

The micro environment refers to the business itself and to all the challenges that come from inside the business. Businesses can therefore take control over all the challenges and influences in the micro environment. Sometimes, the micro environment is also known as the internal environment. The micro environment refers to the forces that are close to the company and affect its ability to serve its customers. It includes the company itself, its suppliers, marketing intermediaries, customer markets and public.

The company aspect of micro-environment refers to the internal environment of the company. This includes all departments, such as management, finance, research and development, purchasing, operations and accounting. Each of these departments has an impact on marketing decisions. For example, research and development have input as to the features a product can perform and accounting approves the financial side of marketing plans and budget in customer dissatisfaction. Marketing managers must watch supply availability and other trends dealing with suppliers to ensure that product will be delivered to customers in the time frame required in order to maintain a strong customer relationship.

2. *Meso-Environment*

Marketing intermediaries refers to resellers, physical distribution firms, marketing services agencies, and financial intermediaries. These are the people that help the company promote, sell, and distribute its products to final buyers. Resellers are those that hold and sell the company's product. They match the distribution to the customers and include places such as Wal-Mart, Target, and Best Buy. Physical distribution firms are places such as warehouses that store and transport the company's product from its origin to its destination. Marketing services agencies are companies that offer services such as conducting marketing research, advertising, and consulting. Financial intermediaries are institutions such as banks, credit companies and insurance companies.

Another aspect of micro-environment is the customers. There are different types of customer markets including consumer markets, business markets, government markets, international markets, and reseller markets. The consumer market is made up of individuals who buy goods and services for their own personal use or use in their household. Business markets include those that buy goods and services for use in producing their own products to sell. This is different from the reseller market which includes businesses that purchase goods to resell as is for a profit. These are the same companies mentioned as market intermediaries. The government market consists of government agencies that buy goods to produce public services or transfer goods to others who need them. International markets include buyers in other countries and includes customers from the previous categories. Competitors are also a factor in the micro-environment and include companies with similar offerings for goods and services. To remain competitive a company must consider who their biggest competitors are while considering its own size and position in the industry. The company should develop a strategic advantage over their competitors.

3. *Macro-Environment (external environment)*

The macro-environment refers to all forces that are part of the larger society and affect the micro-environment. It includes concepts such as demography, economy, natural forces, technology, politics, and culture.

Demography refers to studying human populations in terms of size, density, location, age, gender, race, and occupation. This is a very important factor to study for marketers and helps to divide the population into market segments and target markets.

Another aspect of the macro-environment is the economic environment. This refers to the purchasing power of potential customers and the ways in which people spend their money. Within this area are two different economies, subsistence and industrialized. Subsistence economies are based more in agriculture and consume their own industrial output. Industrial economies have markets that are diverse and carry many different types of goods. Each is important to the marketer because each has a highly different spending pattern as well as different distribution of wealth.

The natural environment includes the natural resources that a company uses as inputs that affects their activities. The concern in this area is the increased pollution, shortages of raw materials and increased governmental intervention.

The technological environment is perhaps one of the fastest changing factors in the macro-environment. This includes all developments from antibiotics and surgery to nuclear missiles and chemical weapons to automobiles and credit cards. As these markets develop it can create new markets and new uses for products. It also requires a company to stay ahead of others and update their own technology as it becomes outdated.

The political environment includes all laws, government agencies, and groups that influence or limit other organizations and individuals within a society.

The final aspect of the macro-environment is the cultural environment, which consists of institutions and basic values and beliefs of a group of people. The values can also be further categorized into core beliefs, which passed on from generation to generation and very difficult to change, and secondary beliefs, which tend to be easier to influence.

1.3 Basic forms of business ownership

Forms of business ownership vary by jurisdiction, but several common forms exist:

1. Sole proprietorship:

A sole proprietorship is owned by one person and operates for their benefit. The owner may operate the business alone or with other people. A sole proprietor has unlimited liability for all obligations incurred by the business, whether from operating costs or judgements against the business. All assets of the business belong to a sole proprietor, including, for example, computer infrastructure, any inventory, manufacturing equipment and/or retail fixtures, as well as any real property owned by the business.

2. Partnership:

A partnership is a business owned by two or more people. In most forms of partnerships, each partner has unlimited liability for the debts incurred by the business. The three most prevalent types of for-profit partnerships are general partnerships, limited partnerships, and limited liability partnerships.

3. Corporation:

The owners of a corporation have limited liability and the business has a separate legal personality from its owners. Corporations can be either government-owned or owned by individuals. They can organize either for profit or as not-for-profit organizations. A non-government for-profit corporation is owned by its shareholders, who elect a board of directors to direct the corporation and hire its managerial staff. A privately owned, for-profit corporation can be either privately held by a small group of individuals, or publicly held, with publicly traded shares listed on a stock exchange.

4. Cooperative:

Often referred to as a "co-op", a cooperative is a limited liability business that can organize for-profit or not-for-profit. A cooperative differs from a corporation in that it has members, not shareholders, and they share decision-making authority. Cooperatives are typically classified as either consumer cooperatives or worker cooperatives. Cooperatives are fundamental to the ideology of economic democracy.

Unit 2: Resources of the company and the efficiency of their use

2.1 Factors of production.

Factors of production or resources are the inputs to the production process. Finished goods are the output. Input is the starting point and output is the end point of production process. There are three basic resources or factors of production: land, labour, capital. Some modern economists also consider entrepreneurship or time a factor of production. These factors are also frequently labeled "producer goods" in order to distinguish them from the goods or services purchased by consumers, which are frequently labeled "consumer goods." All three of these are required in combination at a time to produce a commodity. In economics, production means creation or an addition of utility.

Factors of production may also refer specifically to the primary factors, which are stocks including land, labor (the ability to work), and capital goods applied to production. Materials and energy are considered as secondary factors in classical economics because they are obtained from land, labour and capital. The primary factors facilitate production but neither become part of the product (as with raw materials) nor become significantly transformed by the production process (as with fuel used to power machinery). Land includes not only the site of production but natural resources above or below the soil.

The classical economics of Adam Smith, David Ricardo, and their followers focuses on physical resources in defining its factors of production, and discusses the distribution of cost and value among these factors. Adam Smith and David Ricardo referred to the "component parts of price" as the costs of using:

- *Land or natural resource* — naturally-occurring goods like water, air, soil, minerals, flora and fauna that are used in the creation of products. The payment for use and the received income of a land owner is rent.
- *Labor* — human effort used in production which also includes technical and marketing expertise. The payment for someone else's labor and all income received from ones own labor is wages. Labor can also be classified as the physical and mental contribution of an employee to the production of the good(s).
- *The capital stock* — human-made goods which are used in the production of other goods. These include machinery, tools, and buildings.

The classical economists also employed the word "capital" in reference to money. Money, however, was not considered to be a factor of production in the sense of capital stock since it is not used to directly produce any good.

Marx considered the "elementary factors of the labor-process" or "productive forces" to be:

- *Labor*
- *The subject of labor (objects transformed by labor)*
- *The instruments of labor (or means of labor).*

The "subject of labor" refers to natural resources and raw materials, including land. The "instruments of labor" are tools, in the broadest sense. They include factory buildings, infrastructure, and other human-made objects that facilitate labor's production of goods and services.

2.2 Production function.

A production function relates physical output of a production process to physical inputs or factors of production. The production function is one of the key concepts of mainstream neoclassical theories, used to define marginal product and to distinguish allocative efficiency, the defining focus of economics. The primary purpose of the production function is to address allocative efficiency in the use of factor inputs in production and the resulting distribution of income to those factors, while abstracting away from the technological problems of achieving technical efficiency, as an engineer or professional manager might understand it.

A production function can be expressed in a functional form as the right side of

$$Q = f(X_1, X_2, X_3, \dots, X_n)$$

where Q – is the quantity of output and $X_1, X_2, X_3, \dots, X_n$ – are the quantities of factor inputs (such as capital, labour, land or raw materials).

If Q is not a matrix, then this form does not encompass joint production, which is a production process that has multiple co-products. On the other hand, if f maps from R^n then it is a joint production function expressing the determination of k different types of output based on the joint usage of the specified quantities of the n inputs.

One formulation, unlikely to be relevant in practice, is as a linear function:

$$Q = a + bX_1 + cX_2 + dX_3 + \dots$$

Where a, b, c, d are parameters that are determined empirically.

Another is as a Cobb-Douglas production function:

$$Q = aX_1^b X_2^c \dots$$

In its most standard form for production of a single good with two factors, the function is

$$Q = aL^\beta K^\alpha$$

where: Q = total production (the real value of all goods produced in a year)

L = labor input (the total number of person-hours worked in a year)

K = capital input (the real value of all machinery, equipment, and buildings)

A = total factor productivity

α and β are the output elasticities of capital and labor, respectively. These values are constants determined by available technology.

Output elasticity measures the responsiveness of output to a change in levels of either labor or capital used in production, *ceteris paribus*. For example if $\alpha = 0.45$, a 1% increase in capital usage would lead to approximately a 0.45% increase in output.

The Leontief production function applies to situations in which inputs must be used in fixed proportions; starting from those proportions, if usage of one input is increased without another being increased, output will not change. This production function is given by

$$Q = \min(aX_1, bX_2, \dots)$$

Other forms include the constant elasticity of substitution production function (CES), which is a generalized form of the Cobb-Douglas function, and the quadratic production function.

2.3 Noncurrent Assets

Assets are resources a company owns. They consist of both current and noncurrent resources. Current assets are ones the company expects to convert to cash or use in the business within one year of the balance sheet date. Noncurrent (Long-term assets) assets are ones the company reckons it will hold for at least one year. Typical examples of long-term assets are investments and property, plant, and equipment currently in use by the company in day-to-day operations.

Long-term assets includes:

- *Fixed assets*
- *Intangible assets*
- *Long-term investments*

Fixed assets. This category is the company's property, plant, and equipment. The account includes long-lived assets, such as a car, land, buildings, office equipment, and computers. Fixed assets, also known as "tangible assets" or property, plant, and equipment (PP&E), is a term used in accounting for assets and property that cannot easily be converted into cash. This can be compared with current assets such as cash or bank accounts, which are described as liquid assets. In most cases, only tangible assets are referred to as fixed. IAS 16 (International Accounting Standard) defines Fixed Assets as assets whose future economic benefit is probable to flow into the entity, whose cost can be measured reliably.

Any business or income producing activity using tangible assets may incur costs related to those assets. If an asset is expected to produce a benefit in future periods, some of these costs must be deferred rather than treated as a current expense. The business then records depreciation expense in its financial reporting as the current period's allocation of such costs. This is usually done in a rational and systematic manner. Generally this involves four criteria:

- cost of the asset,
- expected salvage value, also known as residual value of the assets,
- estimated useful life of the asset, and
- a method of apportioning the cost over such life (methods of depreciation).

There are several methods for calculating depreciation, generally based on either the passage of time or the level of activity (or use) of the asset.

- Straight-line depreciation
- Declining Balance Method
- Annuity depreciation
- Sum-of-years-digits method
- Units-of-production depreciation method
- Units of time depreciation
- Group depreciation method
- Composite depreciation method

The main indicator of how well the business is using its fixed assets to generate sales is **Fixed-asset turnover** - the ratio of sales (on the profit and loss account) to the value of fixed assets (on the balance sheet).

$$\text{Fixed Asset Turnover} = \frac{\text{Net Sales}}{\text{Average net fixed assets}}$$

Generally speaking, the higher the ratio, the better, because a high ratio indicates the business has less money tied up in fixed assets for each unit of currency of sales revenue. A declining ratio may indicate that the business is over-invested in plant, equipment, or other fixed assets.

Intangible assets. These assets lack a physical presence (you can't touch or feel them). Corporate intellectual property (items such as patents, trademarks, copyrights, business methodologies), goodwill and brand recognition are all common intangible assets in today's marketplace. An intangible asset can be classified as either indefinite or definite depending on the specifics of that asset. A company brand name is considered to be an indefinite asset, as it stays with the company as long as the company continues operations. However, if a company enters a legal agreement to operate under another company's patent, with no plans of extending the agreement, it would have a limited life and would be classified as a definite asset.

2.4 Current assets

Current Assets - a balance sheet account that represents the value of all assets that are reasonably expected to be converted into cash within one year in the normal course of business. Current assets include cash, accounts receivable, inventory,

marketable securities, prepaid expenses and other liquid assets that can be readily converted to cash.

- *Cash*: Cash includes accounts such as the company's operating checking account, which the business uses to receive customer payments and pay business expenses, or an imprest account, which keeps a fixed amount of cash in it (such as petty cash).

- *Accounts receivable*: This account shows all money customers owe to a business for a completed sales transaction. For example, Business A sells merchandise to Business B with the agreement that B pay for the merchandise within 30 business days.

- *Inventory*: Goods available for sale reflect on a merchandiser's balance sheet in this account. A merchandiser is a retail business, like your neighborhood grocery store, that sells to the general public. For a manufacturing company, a business that makes the items merchandisers sell, this category also includes the raw materials used to make items.

- *Prepaid expenses*: Prepaids are any expense the business pays for in advance, such as rent, insurance, office supplies, postage, travel expense, or advances to employees. They also list as current assets, as long as the company envisions receiving the benefit of the prepaid items within 12 months of the balance sheet date.

The main indicator of how well the business is using its fixed assets to generate sales is **Current Asset Turnover Ratio** - The amount of sales or revenues generated per dollar of current assets.

$$\text{Current Asset Turnover} = \frac{\text{Sales or revenue}}{\text{Current assets}}$$

Generally speaking, the higher the ratio, the better it is, since it implies the company is generating more revenues per dollar of current assets. But since this ratio varies widely from one industry to the next, comparisons are only meaningful when they are made for different companies in the same sector.

2.5 Human Resources

Human resources is the set of individuals who make up the workforce of an organization, business sector, or economy. "Human capital" is sometimes used synonymously with human resources, although human capital typically refers to a more narrow view (i.e., the knowledge the individuals embody and can contribute to an organization). Likewise, other terms sometimes used include "manpower", "talent", "labour", or simply "people". The professional discipline and business function that oversees an organization's human resources is called human resource management (HRM)

The scope of HRM refers to the follow activities:

Human resources planning

Human resource planning or HRP refers to a process by which the company to identify the number of jobs vacant, whether the company has excess staff or shortage of staff and to deal with this excess or shortage.

Job analysis design

Another important area of HRM is job analysis. Job analysis gives a detailed explanation about each and every job in the company. Based on this job analysis the company prepares advertisements.

Recruitment and selection

Based on information collected from job analysis the company prepares advertisements and publishes them in the news papers. This is recruitment. A number of applications are received after the advertisement is published, interviews are conducted and the right employee is selected thus recruitment and selection are yet another important area of HRM.

Orientation and induction

Once the employees have been selected an induction or orientation program is conducted. This is another important area of HRM. The employees are informed about the background of the company, explain about the organizational culture and values and work ethics and introduce to the other employees.

Training and development

Every employee goes under training program which helps him to put up a better performance on the job. Training program is also conducted for existing staff that have a lot of experience. This is called refresher training. Training and development is one area where the company spends a huge amount.

Performance appraisal

Once the employee has put in around 1 year of service, performance appraisal is conducted that is the HR department checks the performance of the employee. Based on these appraisal future promotions, incentives, increments in salary are decided.

Compensation planning and remuneration

There are various rules regarding compensation and other benefits. It is the job of the HR department to look into remuneration and compensation planning.

Motivation, welfare, health and safety

Motivation becomes important to sustain the number of employees in the company. It is the job of the HR department to look into the different methods of motivation. Apart from this certain health and safety regulations have to be followed for the benefits of the employees. This is also handled by the HR department.

Industrial relations

Another important area of HRM is maintaining co-ordinal relations with the union members. This will help the organization to prevent strikes lockouts and ensure smooth working in the company.

2.6 Compensation and benefits

Compensation and benefits (abbreviated “C&B”) is a sub-discipline of human resources, focused on employee compensation and benefits policy-making.

It is also known in the UK as “total reward” and as “remuneration” in Australia and New Zealand.

The basic components of employee compensation and benefits:

1. *Guaranteed pay* – a fixed monetary (cash) reward paid by an employer to an employee. The most common form of guaranteed pay is base salary.

2. *Variable pay* – a non-fixed monetary (cash) reward paid by an employer to an employee that is contingent on discretion, performance, or results achieved. The most common forms of variable pay are bonuses and incentives.

3. *Benefits* – programs an employer uses to supplement employees’ compensation, such as paid time off, medical insurance, company car, and more.

4. *Equity-based compensation* – stock or pseudo stock programs an employer uses to provide actual or perceived ownership in the company which ties an employee's compensation to the long-term success of the company. The most common examples are stock options.

Wage Payment Systems are the different methods adopted by organizations by which they remunerate labour. There exist several systems of employee wage payment and incentives, which can be classified under the following names:

Time Rate Systems: Under this systems, the worker is paid by the hour, day, week, or month.

- **High Wage plan:** Under this plan a worker is paid a wage rate which is substantially higher than the rate prevailing in the area or in the industry. In return, he is expected to maintain a very high level of performance, both quantitative and qualitative.

- **Measured day work :** According to this method the hourly rate of the time worker consists of two parts, namely, fixed and variable. The fixed element is based on the nature of the job i.e. the rate for this part is fixed on the basis of job requirements. The variable portion varies for each worker depending upon his merit rating and the cost-of-living index.

- **Differential time rate:** According to this method, different hourly rates are fixed for different levels of efficiency.

Payment on Result

- **Straight piecework system :** The wages of the worker depend upon his output and rate of each unit of output; it is in fact independent of the time taken by him.

- Differential piece work system: This system provide for higher rewards to more efficient workers. For different levels of output below and above the standard, different piece rates are applicable.

Combination of Time and Piece Work

- Gantt task and bonus system: the system consists of paying a worker on time basis if he does not attain the standard and on piece basis (high rate) if he does.

- Emerson's efficiency system: Under this system minimum time wages are guaranteed, but beyond a certain efficiency level, bonus in addition to minimum day wages is given.

Unit 3: Costs of production and sales

3.1 Costs and their classification

In production, research, retail, and accounting, a cost is the value of money that has been used up to produce something, and hence is not available for use anymore. In business, the cost may be one of acquisition, in which case the amount of money expended to acquire it is counted as cost. In this case, money is the input that is gone in order to acquire the thing. This acquisition cost may be the sum of the cost of production as incurred by the original producer, and further costs of transaction as incurred by the acquirer over and above the price paid to the producer. Usually, the price also includes a mark-up for profit over the cost of production.

Classification of cost means, the grouping of costs according to their common characteristics. The important ways of classification of costs are:

1. *By Element:* There are three elements of costing.

- Raw materials (Direct material/Indirect material)
- Labor (Direct labor/Indirect labor)
- Expenses/overhead (Production or works overheads; Administration overheads; Selling overheads; Distribution overheads; Maintenance & Repair; Supplies; Utilities; Other Variable Expenses; Salaries; Occupancy (Rent); Depreciation; Other Fixed Expenses)

2. *By Nature or Traceability:*

- Direct Costs
- Indirect Costs.

Direct Costs are Directly attributable/traceable to Cost Object. Direct costs are assigned to Cost Object. Indirect Costs are not directly attributable/traceable to Cost Object. Indirect costs are allocated or apportioned to cost objects.

3. *By Functions:*

- production,
- administration,
- selling and distribution,
- R&D.

4. *By Behavior:*

- fixed,
- variable,
- semi-variable.

Costs are classified according to their behavior in relation to change in relation to production volume within given period of time. Fixed Costs remain fixed irrespective of changes in the production volume in given period of time. Variable costs change according to volume of production. Semi-variable Costs costs are partly fixed and partly variable.

5. *By control ability:*

- controllable,
- uncontrollable costs.

Controllable costs are those which can be controlled or influenced by a conscious management action. Uncontrollable costs cannot be controlled or influenced by a conscious management action.

6. *By normality:*

- normal costs
- abnormal costs.

Normal costs arise during routine day-to-day business operations. Abnormal costs arise because of any abnormal activity or event not part of routine business operations. E.g. costs arising of floods, riots, accidents etc.

7. *By Time:*

- Historical Costs
- Predetermined costs.

Historical costs are costs incurred in the past. Predetermined costs are computed in advance on basis of factors affecting cost elements. Example: Standard Costs.

8. *By Decision making Costs:* These costs are used for managerial decision making.

- **Marginal Costs:** Marginal cost is the change in the aggregate costs due to change in the volume of output by one unit.
- **Differential Costs:** This cost is the difference in total cost that will arise from the selection of one alternative to the other.
- **Opportunity Costs:** It is the value of benefit sacrificed in favor of an alternative course of action.
- **Relevant Cost:** The relevant cost is a cost which is relevant in various decisions of management.
- **Replacement Cost:** This cost is the cost at which existing items of material or fixed assets can be replaced. Thus this is the cost of replacing existing assets at present or at a future date.
- **Shutdown Cost:** These costs are the costs which are incurred if the operations are shut down and they will disappear if the operations are continued.
- **Capacity Cost:** These costs are normally fixed costs. The cost incurred by a company for providing production, administration and selling and distribution capabilities in order to perform various functions.
- **Other Costs**

3.2 Cost accounting

Cost accounting is a process of collecting, analyzing, summarizing and evaluating various alternative courses of action. Its goal is to advise the management on the most appropriate course of action based on the cost efficiency and capability. Cost accounting provides the detailed cost information that management needs to control current operations and plan for the future. Cost accounting information is commonly used in financial accounting information, but its primary function is for use by managers to facilitate making decisions.

Unlike the accounting systems that help in the preparation of financial reports periodically, the cost accounting systems and reports are not subject to rules and standards like the Generally Accepted Accounting Principles. As a result, there is wide variety in the cost accounting systems of the different companies and sometimes even in different parts of the same company or organization.

Types of cost accounting

1. Standard cost accounting

The company's fixed costs allocated over a given period of time to the items produced during that period, and recording the result as the total cost of production. This allowed the full cost of products that were not sold in the period they were produced to be recorded in inventory using a variety of complex accounting methods, which was consistent with the principles of GAAP (Generally Accepted Accounting Principles). It also essentially enabled managers to ignore the fixed costs, and look at the results of each period in relation to the "standard cost" for any given product.

2. Activity-based costing

Activity-based costing (ABC) is a costing methodology that identifies activities in an organization and assigns the cost of each activity with resources to all products and services according to the actual consumption by each. This model assigns more indirect costs (overhead) into direct costs compared to conventional costing.

3. Absorption costing

A costing method that includes all manufacturing costs—direct materials, direct labour, and both variable and fixed manufacturing overhead—in unit product costs. According to the ICMA London "Absorption costing is a principle whereby fixed as well as variable costs are allocated to cost unit the term may be applied where production costs only or costs of all function are so allocated".

4. Variable Costing

Variable costing - A costing method that includes only variable manufacturing costs--direct materials, direct labor, and variable manufacturing overhead--in unit product costs.

Variable Costing is a managerial accounting cost concept. Under this method, manufacturing overhead is incurred in the period that a product is produced. This addresses the issue of absorption costing that allows income to rise as production

rises. Under an absorption cost method, management can push forward costs to the next period when products are sold. This artificially inflates profits in the period of production by incurring less cost than would be incurred under a variable costing system. Variable costing is generally not used for external reporting purposes. Under the Tax Reform Act of 1986, income statements must use absorption costing to comply with GAAP.

3.3 Ways of reducing the cost of production

1. Reduce Component Costs

One of the main costs of production is the cost of the components that make up the finished product. Reducing these costs even slightly on a percentage basis can have a substantial impact on the cost of production. Sometimes companies can reduce component costs by buying in bulk or substituting less expensive components that satisfy the requirements. Sometimes a design will allow for fewer fasteners or less material without affecting quality. A review of such possibilities often results in a decrease in production costs.

2. Change Suppliers

If the supplier of components is not willing to consider price reductions and can't offer less expensive alternatives, a company can explore sourcing from different suppliers. It can send the component requirements to various possible suppliers and select those that offer the best value in terms of meeting the specifications and low pricing. Sourcing from two or three suppliers keeps prices low due to competition.

3. Change Design

An effective strategy for reducing production costs is to redesign the product. Companies have to identify the key characteristics of the product that are responsible for its success in the marketplace. Other features may be costly but add little value for customers. Companies can change the design of the product to reduce costs by eliminating unimportant features while retaining the characteristics that customers value.

4. Employee Training

A company evaluating its production costs may find that employees are not working efficiently or lack the awareness of costs that would allow them to help with reductions. Training employees to understand how the production cycle works and their role in cost reduction makes them part of the solution. When a company trains its employees to be aware of how to reduce costs and informs them of progress, production workers become partners in cost reduction.

5. Optimize With Technology

Technology allows cost reduction in two ways. It allows automation of certain production processes, resulting in greater consistency and reduced costs, and companies can use it to analyze their production work flow. Many companies already use a high degree of automation but have considerable scope for work flow

optimization. Software analyzes the production processes and identifies waiting times and their causes. It shows where material and components are not available when needed and allows companies to streamline production, increasing efficiency and reducing costs.

Unit 4: Prices & Pricing

In ordinary usage, price is the quantity of payment or compensation given by one party to another in return for goods or services.

In modern economies, prices are generally expressed in units of some form of currency. (For commodities, they are expressed as currency per unit weight of the commodity, e.g. euros per kilogram.) Although prices could be quoted as quantities of other goods or services this sort of barter exchange is rarely seen. In many financial transactions, it is customary to quote prices in other ways. The most obvious example is in pricing a loan, when the cost will be expressed as the percentage rate of interest.

Price sometimes refers to the quantity of payment requested by a seller of goods or services, rather than the eventual payment amount. This requested amount is often called the asking price or selling price, while the actual payment may be called the transaction price or traded price.

Economists sometimes define price more generally as the ratio of the quantities of goods that are exchanged for each other.

4.1 Cost-plus and value-based approaches in setting prices

Pricing is the process of determining what a company will receive in exchange for its product or service.

Value-based pricing (also value optimized pricing) is a pricing strategy which sets prices primarily, but not exclusively, on the value, perceived or estimated, to the customer rather than on the cost of the product or historical prices.

The approach is most successful when products are sold based on emotions (fashion), in niche markets, in shortages (e.g. drinks at open air festival at a hot summer day) or for indispensable additions (e.g. printer cartridges, headsets for cell phones). Goods that are very intensely traded (e.g. oil and other commodities) or that are sold to highly sophisticated customers in large markets (e.g. automotive industry) usually are sold using cost-plus pricing.

Cost-plus pricing is also known as mark-up pricing where $\text{cost} + \text{mark-up} = \text{selling price}$.

There are several variations of cost-plus pricing, but the most common method is to calculate the cost of the product, then add a percentage of the cost as markup. This approach sets prices that cover the cost of production and provide sufficient profit margin for the firm to reach its target rate of return. It also provides a way for companies to calculate how much profit they will make.

Cost-plus pricing is especially useful in the following cases:

- Public-utility Pricing
- Predetermined Selling Price
- Single-Buyer Product.

4.2 Pricing strategies

A business can use a variety of pricing strategies when selling a product or service. The Price can be set to maximize profitability for each unit sold or from the market overall. It can be used to defend an existing market from new entrants, to increase market share within a market or to enter a new market. Businesses may benefit from lowering or raising prices, depending on the needs and behaviors of customers and clients in the particular market. Finding the right pricing strategy is an important element in running a successful business. Here is several models of pricing:

1. *Line pricing*

Line pricing is the use of a limited number of prices for all product offerings of a vendor.

2. *Absorption pricing*

Types of pricing in which all costs are recovered. The price of the product includes the variable cost of each item plus a proportionate amount of the fixed costs and is a form of cost-plus pricing

3. *Contribution margin-based pricing*

Contribution margin-based pricing maximizes the profit derived from an individual product, based on the difference between the product's price and variable costs (the product's contribution margin per unit), and on one's assumptions regarding the relationship between the product's price and the number of units that can be sold at that price. The product's contribution to total firm profit (i.e. to operating income) is maximized when a price is chosen that maximizes the following: (contribution margin per unit) X (number of units sold).

4. *Creaming or skimming*

Selling a product at a high price, sacrificing high sales to gain a high profit is "skimming" the market. Skimming is usually employed to reimburse the cost of investment of the original research into the product

5. *Decoy pricing*

Method of pricing where the seller offers at least three products, and where two of them have a similar or equal price. The two products with the similar prices should be the most expensive ones, and one of the two should be less attractive than the other. This strategy will make people compare the options with similar prices, and as a result sales of the most attractive choice will increase.

6. *Freemium*

Freemium is a business model that works by offering a product or service free of charge while charging a premium for advanced features, functionality, or related products and services. The word "freemium" is a portmanteau combining the two aspects of the business model: "free" and "premium".

7. *High-low pricing*

Method of pricing for an organization where the goods or services offered by the organization are regularly priced higher than competitors, but through

promotions, advertisements, and or coupons, lower prices are offered on key items. The lower promotional prices are designed to bring customers to the organization where the customer is offered the promotional product as well as the regular higher priced products.

8. *Loss leader*

A loss leader or leader is a product sold at a low price (i.e. at cost or below cost) to stimulate other profitable sales. This would help the companies to expand its market share as a whole.

9. *Odd pricing*

In this type of pricing, the seller tends to fix a price whose last digits are odd numbers. This is done so as to give the buyers/consumers no gap for bargaining as the prices seem to be less and yet in an actual sense are too high, and takes advantage of human psychology.

10. *Pay what you want*

Pay what you want is a pricing system where buyers pay any desired amount for a given commodity, sometimes including zero. In some cases, a minimum (floor) price may be set, and/or a suggested price may be indicated as guidance for the buyer.

11. *Penetration pricing*

Penetration pricing includes setting the price low with the goals of attracting customers and gaining market share. The price will be raised later once this market share is gained.

12. *Predatory pricing*

Predatory pricing, also known as aggressive pricing (also known as "undercutting"), intended to drive out competitors from a market. It is illegal in some countries.

13. *Premium decoy pricing*

Method of pricing where an organization artificially sets one product price high, in order to boost sales of a lower priced product.

14. *Premium pricing*

Premium pricing (also called prestige pricing) is the strategy of consistently pricing at, or near, the high end of the possible price range to help attract status-conscious consumers. The high pricing of premium product is used to enhance and reinforce a product's luxury image.

15. *Multidimensional pricing*

Multidimensional pricing is the pricing of a product or service using multiple numbers. In this practice, price no longer consists of a single monetary amount, but rather consists of various dimensions (e.g., monthly payments, number of payments, and a downpayment).

16. *Price discrimination*

Price discrimination is the practice of setting a different price for the same product in different segments to the market. For example, this can be for different classes, such as ages, or for different opening times.

17. Price leadership

An observation made of oligopolistic business behavior in which one company, usually the dominant competitor among several, leads the way in determining prices, the others soon following.

18. Target pricing

Pricing method whereby the selling price of a product is calculated to produce a particular rate of return on investment for a specific volume of production.

Unit 5: The results of financial and economic activity of the firm

5.1 Profit as an economic category.

In neoclassical microeconomic theory, the term profit has two related but distinct meanings. Economic profit is similar to accounting profit but smaller because it reflects the total opportunity costs (both explicit and implicit) of a venture to an investor. Normal profit refers to a situation in which the economic profit is zero. A related concept, sometimes considered synonymous to profit in certain contexts, is that of economic rent.

Normal profit is a component of (implicit) costs and not a component of business profit at all. It represents the opportunity cost, as the time that the owner spends running the firm could be spent on running another firm.

In accounting, there are several important profit measures in common use. (Note that the words earnings, profit and income are used as substitutes in some of these terms)

- *Gross profit* equals sales revenue minus cost of goods sold (COGS), thus removing only the part of expenses that can be traced directly to the production or purchase of the goods. Gross profit still includes general (overhead) expenses like R&D, S&M, G&A, also interest expense, taxes and extraordinary items.

- *Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA)* equals sales revenue minus cost of goods sold and all expenses except for interest, amortization, depreciation and taxes. It measures the cash earnings that can be used to pay interest and repay the principal. Since the interest is paid before income tax is calculated, the debtholder can ignore taxes.

- *Earnings Before Interest and Taxes (EBIT)/ Operating profit* equals sales revenue minus cost of goods sold and all expenses except for interest and taxes. This is the surplus generated by operations. It is also known as Operating Profit Before Interest and Taxes (OPBIT) or simply Profit Before Interest and Taxes (PBIT).

- *Earnings Before Taxes (EBT)/ Net Profit Before Tax* equals sales revenue minus cost of goods sold and all expenses except for taxes. It is also known as pre-tax book income (PTBI), net operating income before taxes or simply pre-tax Income.

- *Earnings After Tax/ Net Profit After Tax* equal sales revenue after deducting all expenses, including taxes (unless some distinction about the treatment of extraordinary expenses is made). In the US, the term Net Income is commonly used. Income before extraordinary expenses represents the same but before adjusting for extraordinary items.

- *Earnings After Tax/ Net Profit After Tax* minus payable dividends becomes *Retained Earnings*.

5.2 Scorecard: the ratios of business activity and liquidity.

Activity ratios

Activity Ratios indicate how much a company has invested in a particular type of asset (or group of assets), relative to the revenue the asset is producing. The most common activity ratios include; the average collection period and the inventory turnover ratio.

Average collection period

The average collection period ratio indicates the average length of time (in days) a business must wait before it receives payment from customers who buy merchandise on credit. Below shows how a business would calculate its average collection period ratio.

$$\text{Average collection period} = \frac{\text{Accounts receivable}}{\text{Sales}} \times 360 \text{ days}$$

Inventory turnover ratio:

The inventory turnover ratio provides an indication on whether a company has excessive or inadequate goods (products) in inventory. The ratio calculates the number of times per year a company uses or consumes an average stock of goods.

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Liquidity ratios.

Liquidity ratios attempt to measure a company's ability to pay off its short-term debt obligations. This is done by comparing a company's most liquid assets (or, those that can be easily converted to cash), its short-term liabilities.

The main liquidity ratios are the current, quick and cash ratios and we will also go over the cash conversion cycle, which goes into how the company turns its inventory into cash.

Current ratio

The current ratio is a popular financial ratio used to test a company's liquidity (also referred to as its current or working capital position) by deriving the proportion of current assets available to cover current liabilities.

The concept behind this ratio is to ascertain whether a company's short-term assets (cash, cash equivalents, marketable securities, receivables and inventory) are readily available to pay off its short-term liabilities (notes payable, current portion of term debt, payables, accrued expenses and taxes). In theory, the higher the current ratio, the better.

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Quick ratio

The quick ratio - aka the quick assets ratio or the acid-test ratio - is a liquidity indicator that further refines the current ratio by measuring the amount of the most liquid current assets there are to cover current liabilities. The quick ratio is more conservative than the current ratio because it excludes inventory and other current assets, which are more difficult to turn into cash. Therefore, a higher ratio means a more liquid current position.

$$\text{Quick Ratio} = \frac{\text{Cash \& Equivalents} + \text{Shortterm Investments} + \text{Accounts receivable}}{\text{Current liabilities}}$$

Cash ratio

The cash ratio is an indicator of a company's liquidity that further refines both the current ratio and the quick ratio by measuring the amount of cash, cash equivalents or invested funds there are in current assets to cover current liabilities.

$$\text{Cash Ratio} = \frac{\text{Cash} + \text{Cash equivalents} + \text{Invested Funds}}{\text{Current liabilities}}$$

The cash ratio is the most stringent and conservative of the three short-term liquidity ratios (current, quick and cash). It only looks at the most liquid short-term assets of the company, which are those that can be most easily used to pay off current obligations. It also ignores inventory and receivables, as there are no assurances that these two accounts can be converted to cash in a timely matter to meet current liabilities.

Cash conversion cycle

This liquidity metric expresses the length of time (in days) that a company uses to sell inventory, collect receivables and pay its accounts payable. The cash conversion cycle (CCC) measures the number of days a company's cash is tied up in the the production and sales process of its operations and the benefit it gets from payment terms from its creditors. The shorter this cycle, the more liquid the company's working capital position is. The CCC is also known as the "cash" or "operating" cycle.

$$\text{Cash conversion cycle} = \text{DIO} + \text{DSO} + \text{DPO}$$

Where :

DIO – Days Inventory Outstanding - a measure of the number of days it takes for the company's inventory to turn over,

DSO – Days Sales Outstanding - a measure of the number of days it takes a company to collect on sales that go into accounts receivables (credit purchases),

DPO – Days Payables Outstanding - a measure of how long it takes the company to pay its obligations to suppliers.

Unit 6: Innovation & Investment

6.1 The concept and classification of innovations.

Innovation - The process of translating an idea or invention into a good or service that creates value or for which customers will pay.

To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products. In business, innovation often results when ideas are applied by the company in order to further satisfy the needs and expectations of the customers. In a social context, innovation helps create new methods for alliance creation, joint venturing, flexible work hours, and creation of buyers' purchasing power.

Innovation is synonymous with risk-taking and organizations that create revolutionary products or technologies take on the greatest risk because they create new markets.

Imitators take less risk because they will start with an innovator's product and take a more effective approach. Examples are IBM with its PC against Apple Computer, Compaq with its cheaper PC's against IBM, and Dell with its still-cheaper clones against Compaq.

Innovation differs from invention in that innovation refers to the use of a better and, as a result, novel idea or method, whereas invention refers more directly to the creation of the idea or method itself. Innovation differs from improvement in that innovation refers to the notion of doing something different rather than doing the same thing better.

In the organizational context, innovation may be linked to positive changes in efficiency, productivity, quality, competitiveness, and market share. However, recent research findings highlight the complementary role of organizational culture in enabling organizations to translate innovative activity into tangible performance improvements. Organizations can also improve profits and performance by providing work groups opportunities and resources to innovate, in addition to employee's core job tasks.

According to Peter F. Drucker the general *sources of innovations* are different changes in industry structure, in market structure, in local and global demographics, in human perception, mood and meaning, in the amount of already available scientific knowledge, etc.

Types of Innovation

1. Sustaining innovation - An innovation that does not affect existing markets.

- a. Evolutionary innovation - An innovation that improves a product in an existing market in ways that customers are expecting. (E.g., fuel injection)
- b. Revolutionary (discontinuous, radical) innovation - An innovation that is unexpected, but nevertheless does not affect existing markets. (E.g., the automobile)
- 2. Disruptive innovation - An innovation that creates a new market by applying a different set of values, which ultimately (and unexpectedly) overtakes an existing market. (E.g., the lower priced Ford Model T)

6.2 Investment.

Investment - an asset or item that is purchased with the hope that it will generate income or appreciate in the future.

In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth.

In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or appreciate and be sold at a higher price.

Types of investment:

1. Autonomous Investment

Investment which does not change with the changes in income level, is called as Autonomous or Government Investment.

Autonomous Investment remains constant irrespective of income level. Which means even if the income is low, the autonomous, Investment remains the same. It refers to the investment made on houses, roads, public buildings and other parts of Infrastructure. The Government normally makes such a type of investment.

2. Induced Investment

Investment which changes with the changes in the income level, is called as Induced Investment.

Induced Investment is positively related to the income level. That is, at high levels of income entrepreneurs are induced to invest more and vice-versa. At a high level of income, Consumption expenditure increases this leads to an increase in investment of capital goods, in order to produce more consumer goods.

3. Financial Investment

Investment made in buying financial instruments such as new shares, bonds, securities, etc. is considered as a Financial Investment.

However, the money used for purchasing existing financial instruments such as old bonds, old shares, etc., cannot be considered as financial investment. It is a mere transfer of a financial asset from one individual to another. In financial investment, money invested for buying of new shares and bonds as well as debentures have a positive impact on employment level, production and economic growth.

4. Real Investment

Investment made in new plant and equipment, construction of public utilities like schools, roads and railways, etc., is considered as Real Investment.

Real investment in new machine tools, plant and equipments purchased, factory buildings, etc. increases employment, production and economic growth of the nation. Thus real investment has a direct impact on employment generation, economic growth, etc.

5. *Planned Investment*

Investment made with a plan in several sectors of the economy with specific objectives is called as Planned or Intended Investment.

Planned Investment can also be called as Intended Investment because an investor while making investment make a concrete plan of his investment.

6. *Unplanned Investment*

Investment done without any planning is called as an Unplanned or Unintended Investment.

In unplanned type of investment, investors make investment randomly without making any concrete plans. Hence it can also be called as Unintended Investment. Under this type of investment, the investor may not consider the specific objectives while making an investment decision.

7. *Gross Investment*

Gross Investment means the total amount of money spent for creation of new capital assets like Plant and Machinery, Factory Building, etc.

It is the total expenditure made on new capital assets in a period.

8. *Net Investment*

Net Investment is Gross Investment less (minus) Capital Consumption (Depreciation) during a period of time, usually a year.

It must be noted that a part of the investment is meant for depreciation of the capital asset or for replacing a worn-out capital asset. Hence it must be deducted to arrive at net investment

6.3 Investment project.

Investment project - Long-term allocation of funds (with or without recourse to the project's sponsor) to carry an investment idea through to its stable-income generation stage. A viable investment project aims at achieving a profitable return that ensures (1) timely payment of interest and principal, (2) attractive return on the invested capital, and (3) positive and consistent cash flows.

Stages of the investment project.

Realization of investment projects pursues the ultimate goal of increasing corporate profits by enhancing company's presence on the market and boosting regional sales. The process, however, is quite time/resource-consuming and requires a

great deal of planning work. After the decision to invest is taken a project should be planned for the following stages or phases:

1. *Preliminary stage*

1.1. Choice of location for the future project. Investors analyse and compare several regions or territories by several criteria: resource base, labour supply, market capacity, transportation facilities, engineering and business infrastructure, etc.

1.2. Market analysis. The selected territory is analysed for its marketing potential (demand and supply, local competition, etc).

1.3. Brief feasibility study. Goal of such a study is to make sure that the investment project is feasible (profitable) on the planned market.

2. *Project preparation stage*

2.1. Negotiations with resource suppliers, government officials, money lenders (banks, corporate co-investors, etc), investment advisors/agencies, design and construction companies, etc. Although this phase follows preliminary stage, some communication activities should start in the process of market analysis (with resource suppliers, government officials and investment consultants) as a part of gathering decision-making information. The result of negotiation with financial companies is obtaining a loan for project implementation stage.

2.2. Documents preparation.

2.2.1. Main document that describes investment project in all its financial and organizational aspects is a business plan. It is based on feasibility study, market analysis and preliminary information from resource suppliers, potential clients, government bodies and investment advisors. The plan basically covers issues of company's organization, production, marketing, financing, investors relations and risks of the project.

2.2.2. Design estimates usually contains work drawings of production and administration facilities, technology description, equipment specification and other planning documents.

2.2.3. Business plan, design estimates along with supporting documentation should undergo an expertise by investment advisors, government bodies and co-investors (or money lenders).

3. *Project implementation stage*

3.1. Engineering: plant layout, specifications and operations, equipment arrangements, transport and installation plan, communications design, manufacturing schedule, etc.

3.2. Construction works: site preparation, erection, construction, extension or structural alteration of a future production facility. The stage requires constant negotiations and approvals with area administrators, public service providers and design and contractor companies.

3.3. Company registration. It is advisable to register a new company as early as possible, but often the procedure starts along with construction works and before

equipment supply. The company may be registered as a joint stock company, limited liability company or as a branch of a foreign company.

3.4. Equipment supply. This phase follows a period of negotiations with equipment suppliers and starts when the construction works are at least 85% complete.

3.5. Start up: equipment testing, resource supply, hiring of workers and their training, checkout and adjustment of technology process, etc.

Evaluation of efficiency of the investment project.

1. Net present value (NPV)

Net present value is the difference between the present value of cash inflows and the present value of cash outflows. NPV compares the value of a dollar today to the value of that same dollar in the future, taking inflation and returns into account. NPV analysis is sensitive to the reliability of future cash inflows that an investment or project will yield and is used in capital budgeting to assess the profitability of an investment or project.

NPV is calculated using the following formula:

$$NPV = \sum_{t=0}^T \frac{NCF_t}{(1+r)^t}$$

Where:

t– the time of the cash flow

r– the discount rate (the rate of return that could be earned on an investment in the financial markets with similar risk.); the opportunity cost of capital

NCF– the net cash flow i.e. cash inflow – cash outflow, at time t .

For educational purposes, NCF₀ is commonly placed to the left of the sum to emphasize its role as (minus) the investment.

$$NPV = \sum_{t=1}^T \frac{NCF_t}{(1+r)^t} - I_0$$

If the NPV of a prospective project is positive, the project should be accepted. However, if NPV is negative, the project should probably be rejected because cash flows will also be negative.

2. Internal rate of return (IRR)

The internal rate of return on an investment or project is the "rate of return" that makes the net present value of all cash flows (both positive and negative) from a particular investment equal to zero. It can also be defined as the discount rate at which the present value of all future cash flow is equal to the initial investment or in other words the rate at which an investment breaks even.

$$\sum_{t=0}^T \frac{NCF_t}{(1+IRR)^t} = 0$$

3. *Profitability index (PI)*

Profitability index, is the ratio of payoff to investment of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment.

The ratio is calculated as follows:

$$PI = \sum_{t=1}^T \frac{NCF_t}{(1+r)^t} \div I_0$$

Assuming that the cash flow calculated does not include the investment made in the project, a profitability index of 1 indicates breakeven. Any value lower than one would indicate that the project's PV is less than the initial investment. As the value of the profitability index increases, so does the financial attractiveness of the proposed project.

4. *Alternative capital budgeting methods*

- Adjusted present value (APV): adjusted present value, is the net present value of a project if financed solely by ownership equity plus the present value of all the benefits of financing.
- Accounting rate of return (ARR): a ratio similar to IRR and MIRR
- Cost-benefit analysis: which includes issues other than cash, such as time savings.
- Modified internal rate of return (MIRR): similar to IRR, but it makes explicit assumptions about the reinvestment of the cash flows. Sometimes it is called Growth Rate of Return.
- Payback period: which measures the time required for the cash inflows to equal the original outlay. It measures risk, not return.
- Real option: which attempts to value managerial flexibility that is assumed away in NPV.
- Equivalent annual cost (EAC): a capital budgeting technique that is useful in comparing two or more projects with different

Unit 7: Planning at the firm

7.1 The essence and the basic principles of planning.

Planning - a basic management function involving formulation of one or more detailed plans to achieve optimum balance of needs or demands with the available resources.

The planning process (1) identifies the goals or objectives to be achieved, (2) formulates strategies to achieve them, (3) arranges or creates the means required, and (4) implements, directs, and monitors all steps in their proper sequence.

Principles of Planning

1. *Principle of Contribution:* The purpose of planning is to ensure the effective and efficient achievement of corporate objectives, in-fact, the basic criteria for the formulation of plans are to achieve the ultimate Objectives of the company. The accomplishment of the objectives always depends on the soundness of plans and the adequate amount of contribution of company towards the same.

2. *Principle of Sound and Consistent Premising:* Premises are the assumptions regarding the environmental forces like economic and market conditions, social, political, legal and cultural aspects, competitors actions, etc. These are prevalent during the period of the implementation of plans. Hence, Plans are made on the basis of premises accordingly, and the future of the company depends on the soundness of plans they make so as to face the state of premises.

3. *Principle of Limiting factors :* The limiting factors are the lack of motivated employees, shortage of trained personnel, shortage of capital funds, government policy of price regulation, etc. The company requires to monitor all these factors and need to tackle the same in an efficient way so as to make a smooth way for the achievement of its ultimate objectives.

4. *Principle of Commitment:* A commitment is required to carry-on the business that is established. The planning shall has to be in such a way that the product diversification should encompass the particular period during which entire investment on that product is recovered.

5. *Principle of Coordinated Planning:* Long and short-range plans should be coordinated with one another to form an integrated plan, this is possible only when latter are derived from the former. Implementation of the long-range plan is regarded as contributing to the implementation of the short-range plan. functional plans of the company too should contribute to all others plans i.e. implementation of one plan should contribute to all the other plans, this is possible only when all plans are consistent with one another and are viewed as parts of an integrated corporate plan.

6. *Principle of Timing:* Number of major and minor plans of the organisation should be arranged in a systematic manner. The plans should be

arranged in a time hierarchy, initiation and completion of those plans should be clearly determined.

7. *Principle of Efficiency:* Cost of planning constitute human, physical and financial resources for their formulation and implementation as well. Minimizing the cost and achieving the efficient utilization of resources shall has to be the aim of the plans. Cost of plan formulation and implementation, in any case, should not exceed the organisations output's monetary value. Employee satisfaction and development, and social standing of the organisation are supposed to be considered while calculating the cost and benefits of plan.

8. *Principle of Flexibility:* Plans are supposed to be flexible to favour the organisation to cope-up with the unexpected environments. It is always required to keep in mind that future will be different in actuality. Hence companies, therefore, require to prepare contingency plans which may be put into operation in response to the situations.

9. *Principle of Navigational Change:* Since the environment is always not the same as predicted, plans should be reviewed periodically. This may require changes in strategies, objectives, policies and programmes of the organisation. The management should take all the necessary steps while reviewing the plans so that they efficiently achieve the ultimate goals of the organisation.

10. *Principle of Acceptance:* Plans should be understood and accepted by the employees, since the successful implementation of plans requires the willingness and cooperative efforts from them. Communication also plays a crucial role in gaining the employee understanding and acceptance of the plans by removing their doubts and misunderstanding about the plans also their apprehensions and anxieties about consequences of plans for achievement of their personal goal.

7.2 The system of plans of the company.

The planning sytem of the company includes three levels of plans:

Strategic Plans

To best understand the relationship between the different types of plans, let's start at the top. Strategic plans are designed with the entire organization in mind and begin with an organization's mission. Top-level managers, such as CEOs or presidents, will design and execute strategic plans to paint a picture of the desired future and long-term goals of the organization. Essentially, strategic plans look ahead to where the organization wants to be in three, five, even ten years. Strategic plans, provided by top-level managers, serve as the framework for lower-level planning.

Tactical Plans

Tactical plans support strategic plans by translating them into specific plans relevant to a distinct area of the organization. Tactical plans are concerned with the

responsibility and functionality of lower-level departments to fulfill their parts of the strategic plan.

Operational Plans

Operational plans are the plans that are made by frontline, or low-level, managers. All operational plans are focused on the specific procedures and processes that occur within the lowest levels of the organization. Managers must plan the routine tasks of the department using a high level of detail.

Operational plans can be either single-use or ongoing plans. Single-use plans are those plans that are intended to be used only once. They include activities that would not be repeated and often have an expiration.

Ongoing plans are those plans that are built to withstand the test of time. They are created with the intent to be used several times and undergo changes when necessary.

7.3 Business planning.

Business Plan - a written document that describes in detail how a new business is going to achieve its goals. A business plan will lay out a written plan from a marketing, financial and operational viewpoint. Sometimes a business plan is prepared for an established business that is moving in a new direction.

A business plan includes a description of a company or small business, its services and/or products and how the business will achieve its goals. The plan includes the overall budget, current and projected financing, a market analysis and its marketing strategy approach. In a business plan, a business owner projects revenues and expenses for a certain period of time and describes operational activity and costs related to the business.

Structure of a Business Plan:

Executive Summary

The executive summary gives a broad overview of the business plan, the history and future goals of the company. This is the most important section and should grab the reader's attention. Things that need to be included in the executive summary are the mission statement, the founders and their roles in the company, the location of the business, the products or services the company offers, investor information, financial growth summary, marketing highlights and future plans.

Market Analysis

This section of the business plan includes a thorough industry and market analysis. It should also analyze the size, growth rate, trends and characteristics of the industry. Detailed demographic descriptions are also included in this section. Analysis should define the target market and include characteristics, geographic location, seasonal trends and size of this market. A competitive analysis is also included which assesses the competition's product line, their strengths and weaknesses, and any barriers to entering the market.

Organization & Management

This section outlines the company's organizational structure and ownership and key leaders of the business. Legal structure, names of the owners, percentage of ownership, forms of ownership and overall organizational structure are included. Management profiles should also be included that provide background information on the key people running the company such as education, experience and skills, prior employment, track records, community involvement and industry recognition. If a board of directors is involved with the company, their positions, background and company involvement are also included in this section.

Marketing & Sales Strategies

This section includes the market penetration strategy and overall growth strategy. Detailed communication analysis of how to best reach target market through promotions, advertising, public relations and a sales strategy are outlined. Included is also a description of the distribution channels and the process for sales activities.

Service or Product Line

This section outlines what the company is selling and a detailed description of the product or service. This would include benefits of the product or service, its ability to meet customers' needs, distribution and pricing strategy, advantages over the competition and the current development stage. Copyright, patent or trade secret information is also outlined in this section, in addition to describing any existing legal agreements for the company.

Financials

If there is any historical data related to the finances of the company, it is included here. Items such as income statements, balance sheets and cash flow statements will provide the information investors and creditors are interested in. This section also includes a prospective financial analysis for five years out. Forecasted income statements, balance sheets, cash flow statements and capital expenditure budgets should be proposed for each future year of the company. Graphs and trend analysis charts are often used in this section.

Appendix

The appendix of the business plan includes items such as credit history, resumes, product pictures, letters of reference, market study details, magazine or book references, licenses, permits or patents, legal documents, copies of leases, building permits, contracts and lists of business consultants. This information is used on an as-needed basis.

7.4 Budget

Budget - an estimate of costs, revenues, and resources over a specified period, reflecting a reading of future financial conditions and goals.

One of the most important administrative tools, a budget, serves also as a (1) plan of action for achieving quantified objectives, (2) standard for measuring performance, and (3) device for coping with foreseeable adverse situations

Budget types

- Sales budget – an estimate of future sales, often broken down into both units and currency. It is used to create company sales goals.
- Production budget - an estimate of the number of units that must be manufactured to meet the sales goals. The production budget also estimates the various costs involved with manufacturing those units, including labor and material. Created by product oriented companies.
- Capital budget - used to determine whether an organization's long term investments such as new machinery, replacement machinery, new plants, new products, and research development projects are worth pursuing.
- Cash flow/cash budget – a prediction of future cash receipts and expenditures for a particular time period. It usually covers a period in the short term future. The cash flow budget helps the business determine when income will be sufficient to cover expenses and when the company will need to seek outside financing.
- Marketing budget – an estimate of the funds needed for promotion, advertising, and public relations in order to market the product or service.
- Project budget – a prediction of the costs associated with a particular company project. These costs include labour, materials, and other related expenses. The project budget is often broken down into specific tasks, with task budgets assigned to each. A cost estimate is used to establish a project budget.
- Revenue budget – consists of revenue receipts of government and the expenditure met from these revenues. Tax revenues are made up of taxes and other duties that the government levies.
- Expenditure budget – includes spending data items.
- Budgeting- process of expressing quantified resource requirements (amount of capital, amount of material, number of people) into time-phased goals and milestones.

Four Phases of the Budget Cycle

A business budget typically progresses in phases that in total produce a complete budget life cycle. Regardless of its focus, the budget cycle begins with planning and ends with a thorough evaluation. Although the terms used to identify the four phases within the cycle may differ between businesses, the objectives of the preparation, approval, execution and auditing phases are generally the same.

Preparation Phase

Budget preparation is a time-consuming process that typically takes from three to six months to complete. During this phase, department managers -- or the owner -- make plans, prioritize spending, crunch numbers and develop a preliminary budget plan. Because most businesses prepare separate budgets for each department or division and then combine these later, steps in the budget preparation phase may repeat themselves before creating a preliminary budget able to pass through the approval phase.

Budget Approval

The length of the approval phase generally depends on the size of a business and its organizational structure. For example, budget approval responsibilities in a small business with a flat organizational structure typically involve only the owner, or the owner and a few key managers. In contrast, mid-size and large businesses characterized by a formal, hierarchical organizational structure typically assign approval responsibilities to boards, committees or authorized senior-level managers. Budget approvals often require much discussion and a consensus vote before the approval phase is complete.

The Execution Phase

The execution or implementation phase of the budget life cycle most often runs from the beginning to the end of the fiscal or calendar year. Regular, consistent monitoring to make sure departments are following budgetary constraints and to maintain internal control is vital during this phase. If adjustments become necessary during the year, parts of an annual budget may return to the preparation phase and go through the cycle again. If monitoring uncovers discrepancies such as significant cost overruns or spending that doesn't match budget allocations, an internal audit may take place before the year's end.

End-of-Year Auditing

The audit phase -- which consists of internal auditing, external auditing or both -- typically take place after the fiscal year ends. Thoroughly examining year-end financial reports and statements provides ways to assess compliance with budgetary constraints and determine whether projections used to create the budget were accurate. An evaluation report created by the audit team, which includes recommendations for the coming year, completes both the audit phase and the current year's budget cycle.

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Экономика фирмы

Учебно-методическое пособие

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учреждение высшего образования
«Национальный исследовательский Нижегородский государственный
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