ECONOMICS OF ORGANISATION

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Кафедра «Экономика и управление на транспорте»

M.G. DANILINA

ECONOMICS OF ORGANISATION

Учебное пособие
для студентов бакалавриата и магистратуры
по направлениям «Экономика», «Менеджмент», «Торговое дело»

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В учебном пособии рассмотрены основные вопросы экономики организации: основные понятия, экономические категории, уделено внимание экономическим аспектам производственного процесса, рассмотрены базовые экономические категории такие, как основные средства, оборотный капитал, затраты, прибыль.

Учебное пособие предназначено студентам бакалавриата и магистратуры по направлениям «Экономика», «Менеджмент», «Торговое дело».

Рецензенты:
Доцент кафедры «Международный финансовый и управленческий учёт» РУТ (МИИТ), к.э.н И.В. Сёмина.
Заместитель генерального директора АО «Федеральная пассажирская компания», к.э.н. А.А. Мусловец.

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INTRODUCTION

The object of the discipline “Economics of Organisation” is a production organisation/enterprise, and the subject is production and socio-economic relations between economic entities, between business entities and the state, between structural divisions of an organisation/enterprise, as well as between an employer and an employee, between members of an enterprise’s collective.

The "Economics of Organisation" is specifically oriented economic subject, closely related to the following courses: "Management", "Marketing", "Pricing", "Accounting", "Financial Accounting" and others. The tutorial addresses the following methodological issues: production resources and indicators of the effectiveness use; forms of remuneration and elements of staff motivation; production activity of the organisation/enterprise; organisation/enterprise costs; pricing policy of the organisation/enterprise; the resulting performance of the organisation/enterprise; profitability and its types.

The tutorial "Economics of Organisation " will be useful for students studying economics in English.
1. ORGANISATION/ENTERPRISE AND ENTREPRENEURIAL ACTIVITY

1.1. Entrepreneurship and Business concepts

Entrepreneurship (entrepreneurial activity) is independent undertaking a venture aimed at receiving systematical profit from use of property, selling goods and services, by legally organized entities.

The concept of Entrepreneurship is connected with such terms as business, enterprise, company, manufacturing etc.

Entrepreneurship has a lot of meanings. But whatever we mean using this term. It is very important for entrepreneurial activity to keep continuity of the reproduction process. The reproduction process is based on demand reproduction and satisfying needs. Besides, the needs change and increase constantly. As you know, the needs can be of a person, a community, as well as of a society at large.

As it was said before, we can use different terms meaning "an enterprise". For example, business, company, organisation.

A business can be described as an organisation that provides goods and services for human needs. The word "business" can refer to a particular organisation or to an entire market sector (for example, "the finance business" is "the financial sector") or to all economic sectors collectively ("the business sector").

A company, abbreviated as co., is a legal entity made up of an association of people, be they natural, legal, or a mixture of both, for carrying on a commercial or industrial enterprise.

In addition, a business venture is a commercial undertaking, such as the launch of a new company, in which there is a risk of loss as well as an opportunity for profit.

An enterprise is the same as a company and business.

We also must mention a corporation. A corporation is a company or group of people authorized to act as a single entity (legal person) and recognized as such in law.

According to Russian law an enterprise is a separate commercial entity established in accordance with the procedure set by enterprise and entrepreneurship law to produce goods, execute works and provide services in order to satisfy social needs and to earn profit. An enterprise is obliged to be regresrated as a legal entity.

1.2. Organisation Classification

All enterprises can be classified according to three criteria: form of ownership, types of products and legal form of organisation.

If we talk about form of ownership they can be public, private and sole trader without organizing a legal person (fig. 1.1). In public enterprises, activities are undertaken by the state. In private enterprises, they are enterprises activities undertaken by private individuals and business.

The sole trader or simply a proprietor, is a type of enterprise that is owned and run by one natural person and in which there is no legal distinction between the owner and the business entity.

The owner is in direct control of all elements and incurs legal liability for the finances of such business and this may include debts, loans, loss, etc.
Next criterion is types of products (fig. 1.2). The productive sectors of the economy are divided into primary, industrial and service sectors.

Primary sector deals with raw materials and farming. Industrial sector deals with manufacturing, construction, gas & electricity. And service sector includes retailing, banking and tourism.

The last criterion is a legal form of organisation. All organisations are divided into commercial/noncommercial and corporate/unitarian. According to Russian law corporate organisations are economic partnership, partnership, business entity, farm enterprise and producers' cooperative (fig. 1.3).
The organisation life cycle is the life cycle of an organisation from its creation to its termination. Generally, there are five stages of an organisation life cycle (fig. 1.4).

Stage 1: Existence: Commonly known as the birth or entrepreneurial stage, «existence signifies the start of an organisation’s expansion. The main importance is centered around having a sufficient amount of customers to keep the organisation or business active. Some organisations enjoy adequate growth to be able to enter the next stage, whilst others are unsuccessful in achieving this and consequently fail to survive.

Stage 2: Survival: At this stage, organisations look to pursue growth, establish a framework and develop their capabilities. There is a focus on regularly setting targets for the organisation, with the main aim being to generate sufficient revenue for survival and expansion. Some organisations enjoy adequate growth to be able to enter the next stage, whilst others are unsuccessful in achieving this and consequently fail to survive.

Stage 3: Maturity: This stage signifies the organisation entering a more formal hierarchy of management (hierarchical organisation). Organisations look to safeguard their growth as opposed to focusing on expansion. Top and middle level management specialize in different tasks, such as planning and routine work respectively.
Stage 4: Renewal: Organisations experience a renewal in their structure of management, from a hierarchical to a matrix style, which encourages creativity and flexibility. 

If the organisation does not successfully pass this stage, then the next stage of the Decline comes.

Stage 5: Decline: This stage initiates the death of an organisation. The decline is identified by the focus on political agenda and authority within an organisation, whereby individuals start to become preoccupied with personal objectives, instead of focusing on the objectives of the organisation itself. This slowly destroys the functionality and feasibility of the entire organisation.

The redefinition of something is the act or process of causing people to consider it in a new way.

The redevelopment is the action or process of developing something again or differently.

1.4. INTERNAL & EXTERNAL ENVIRONMENT

To illustrate this, let's look at the functioning scheme of the company as an open system (fig. 1.5).

![Input Process](physical, labour, financial, technical resources and information content)

![Production](is all the processes involved in making a product)

![Output Process](a product, profits, satisfaction of needs etc.)

Fig. 1.5. The functioning scheme of the company as an open system.

Input process includes physical, labour, financial, technical resources and information content. Production is all the processes involved in making a product. Output process includes a product, profits, satisfaction of needs etc. In this case, a business process should be understood as the process of transforming inputs into outputs, representing the customer value.

A business concept that looks perfect on paper may prove to be imperfect in the real world. Sometimes failure is due to the internal environment: the company's finances, personnel or equipment. Sometimes it's the environment surrounding the company. Knowing how internal and external environmental factors affect your company can help your business thrive.

Organisations don't exist in vacuum. Rather, each organisation operates in an environment that affects everything, from the availability of skilled workers, to the price of raw materials. Understanding your organisation's external environment helps you proactively take advantage of opportunities and nimbly sidestep threats.

An external environment is composed of all the outside factors or influences that impact the operation of business.

Characteristics of the external environment are:

- interconnectedness is mutual influence of various factors in the organisation functioning;
- complexity is a number of factors that can have a significant impact on the organisation economic activities and to which the organisation is obliged to react;
- mobility is speed with which changes occur in the organisation environment;
- uncertainty is determined by the amount of information the organisation has about a particular factor, as well as the reliability degree of this information.

The external environment of the organisation includes direct impact and indirect impact of the environment.

Direct Impact:
Competitors: Whatever your organisation or business offers, you'll be well-positioned to succeed, if you have a deep and broad understanding of who else provides similar offerings, or who else has different products or services that can meet the same need. Unless your company is unique, you'll have to deal with competition. When you start your company, you fight against established, more experienced businesses in the same industry. After you establish yourself, you'll eventually have to face newer firms that try to slice away your customers.

Suppliers: Suppliers have a huge impact on your costs. The clout of any given supplier depends on scarcity: If you can't buy anywhere else, your negotiating room is limited.

Consumers: Customers tastes can be fickle, influenced by fads and trends, among other things. Demographics also influence the types of products that your customers are likely to buy. You can respond to customer tastes by proactively studying your external environment, including evolving trends. You can also take the lead by coming up with innovative products and services which entice customers to want what you offer. Your customers may even become influencers, encouraging their friends to try your offerings as well.

Contact Audiences: A contact audience is any group that shows real or potential interest in the organisation or has an impact on its ability to achieve its goals.

Indirect Impact:

State and Political factors: Changes in government policy can have a huge effect on your business. Political factors are basically how the government intervenes in the economy. Specifically, political factors have areas including tax policy, labour law, environmental law, trade restrictions, tariffs, and political stability. Political factors may also include goods and services which the government aims to provide or be provided (merit goods) and those that the government does not want to be provided (demerit goods or merit bads). Furthermore, governments have a high impact on the health, education, and infrastructure of a nation.

Legal factors: include discrimination law, consumer law, antitrust law, employment law, and health and safety law. These factors can affect how a company operates, its costs, and the demand for its products.

Economic factors: In a bad economy, even a well-run business may not be able to survive. If customers lose their jobs or take jobs that can barely support them, they'll spend less on sports, recreation, gifts, luxury goods and new cars. High interest rates on credit cards can discourage customers from spending. You can't control the economy, but understanding it can help you spot threats and opportunities. Economic factors include economic growth, interest rates, exchange rates, inflation rate. These factors greatly affect how businesses operate and make decisions. For example, interest rates affect a firm's cost of capital and therefore to what extent a business grows and expands. Exchange rates can affect the costs of exporting goods and the supply and price of imported goods in an economy.

Social and Demographic factors: Social factors include the cultural aspects and health consciousness, population growth rate, age distribution, career attitudes and emphasis on safety. High trends in social factors affect the demand for a company's products and how that company operates. For example, the ageing population may imply a smaller and less-willing workforce (thus increasing the cost of labour). Furthermore, companies may change various management strategies to adapt to social trends caused from this (such as recruiting older workers). Demographic factors include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, employment status, religious belief or practice, culture and tradition, living standards and income level.

Scientific and Technical factors: include technological aspects like R&D activity, automation, technology incentives and the rate of technological change. These can determine barriers to entry, minimum efficient production level. Furthermore, technological shifts would affect costs, quality, and lead to innovation.

International factors: International factors include various international events that indirectly affect the activities of organisations in different regions.

The internal environment of the enterprise is a set of processes, as a result of which the organisation transforms available resources into goods and services offered to the market.
Internal Environmental of the organisation includes next:

Social Subsystem: covers structure, potential, qualification; number of employees; labour productivity; turnover of staff; cost of labour; interests and needs of workers; interaction of managers and workers; hiring, training and promotion of personnel; evaluation of labour outcomes and incentives; creation and maintenance of relations between employees, etc.

Production and technical subsystem: It covers the volume, structure, rates of production; the availability of raw materials, the level of stocks, the speed of their use, the system of inventory control; supply and storage management; The available fleet of equipment and the degree of its use, reserve capacity, technical efficiency of capacities; location of production and availability of infrastructure; maintenance of the technological park; research and development; ecology of production; quality control; patents, trademarks, etc.

The financial and economic subsystem: includes processes related to ensuring the effective use and flow of funds in the organisation; financial stability and solvency; economic efficiency and profitability (by products, regions, sales channels, intermediaries); own and borrowed funds and their ratio; effective accounting system, including cost accounting, budgeting, profit planning.

Organisational subsystem: includes communication processes; organisational structures; norms, rules, procedures; distribution of rights and responsibilities; hierarchy of subordination; abilities and interests of top management; company culture; prestige and image of the company; organisation of the communication system.

Marketing subsystem: includes all those processes that are associated with the sale of products; product promotion strategy, pricing strategy; strategy of product promotion in the market; selection of sales markets and distribution systems; market share; the ability to collect the necessary information about the markets; Marketing budget and its execution; marketing plans and programs; innovations; image, reputation and quality of goods; promotion of sales, advertising, pricing.

We have two tools to analyse internal and external environment. You know them very well.

The first tool is SWOT analysis.

SWOT analysis (or SWOT matrix). It is a strategic planning technique used to help a person or organisation identify the Strengths, Weaknesses, Opportunities and Threats related to business competition or project planning. It is intended to specify the objectives of the business venture or project and identify the internal and external factors that are favourable and unfavourable to achieve those objectives. Strengths and Weaknesses are frequently internally-related, while Opportunities and Threats commonly focus on environment.

Strengths are characteristics of a business or a project that give it an advantage over others.

Weaknesses are characteristics of a business or a project that place the business at a disadvantage relative to others.

Opportunities are elements in the environment that a business or a project could exploit to its advantage.

Threats are elements in the environment that could cause trouble for of a business or a project.

PEST analysis describes a framework of macro-environmental factors used in the environmental scanning component of strategic management. It is part of an external analysis when conducting a strategic analysis or doing market research, and gives an overview of the different macro-environmental factors to be taken into consideration.

PEST is an abbreviation for words politics, economics, society, technology.

The basic PEST analysis includes four factors: Political factors, Economic factors, Social factors, Technological factors. At the last topic we already talked about these factors.

Political factors are basically how the government intervenes in the economy. Specifically, political factors have areas including tax policy, labour law, environmental law, trade restrictions, tariffs, and political stability. Political factors may also include goods and services which the government aims to provide or be provided (merit goods) and those that the government does not want to be provided. Furthermore, governments have a high impact on the health, education, and infrastructure of a nation.
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Technological factors include technological aspects like R&D activity, automation, technology incentives and the rate of technological change. These can determine barriers to entry, minimum efficient production level and influence the outsourcing decisions. Furthermore, technological shifts would affect costs, quality, and lead to innovation.
2. ORGANISATION MANAGEMENT

2.1. MANAGEMENT DEFINITION. ORGANISATION DEVELOPMENT FACTORS

Management can be defined as a purposeful impact on the object of management. The purposeful impact is expressed through the management functions.

Management (or managing) is the administration of an organisation, whether it is a business, a non-profit organisation, or government body. Management includes the activities of setting the strategy of an organisation and coordinating the efforts of its employees (or of volunteers) to accomplish its objectives through the application of available resources, such as financial, natural, technological, and human resources. The term "management" may also refer to those people who manage an organisation.

Management involves identifying the mission, objective, procedures, rules and manipulation of the human capital of an enterprise to contribute to the success of the enterprise.

As mentioned above, management is implemented through management functions.

The management function is a direction or a type of management activity characterized by a separate set of tasks and implemented by special methods.

From this perspective, Henri Fayol (1841–1925) considers management to consist of six functions: forecasting, planning, organizing, commanding, coordinating, controlling. This is important, but the organisation does not need it.

Forecasting helps to determine the direction of an organisation development. Forecasting is the process of making predictions of the future based on past and present data and most commonly by analysis of trends.

Planning: It's deciding what is to happen in the future and generating plans for action (deciding in advance).

Organizing is a systematic process of structuring, integrating, co-ordinating task goals, and activities to resources in order to attain objectives.

Coordinating: It's creating a structure through which an organisation's goals can be achieved.

To co-ordinate is to make many different things work effectively as a whole.

Commanding (or leading): It's determining what must be done in a situation and getting people to do it.

Controlling or Control, helps to check the errors and to take the corrective action so that deviation from standards are minimized and stated goals of the organisation are achieved in a desired manner.

At management, it is important to know and consider factors of an organisation/ an enterprise development.

Factors of organisation development are a combination of elements and causes that affect the change in the efficiency of an organisation/ an enterprise functioning.

Organisation development factors are divided into two groups: intensive and extensive. The source of intensive development is scientific and technological progress and increasing of the factor use effectiveness. The source of extensive development is an increase in quantitative characteristics of the factor, rather than increasing the return on it.

What can be attributed to the extensive factors of the organisation's development is an increase in the number of resources used, an increase in the time spent using resources and eliminating the unproductive use of resources. What can be attributed to the intensive factors of the organisation's development is the improvement of the process of using resources, improving the qualitative characteristics of resources.
2.2. Organisation structure

What can be attributed to the intensive factors of the organisation's development is the improvement of the process of using resources, improving the qualitative characteristics of resources.

When we talk about management, we always mean a management hierarchy. The management hierarchy assumes different levels of management.

Larger organisations generally have three levels of managers, which are typically organized in a hierarchical pyramid structure:

Senior managers are members of a Board of Directors and a Chief Executive Officer (CEO) or a President of an organisation. They set the strategic goals of the organisation and make decisions on how the overall organisation will operate. Senior managers are generally executive-level professionals, and provide direction to middle management who directly or indirectly report to them.

Middle managers, examples of which would include branch managers, regional managers, department managers and section managers, provide direction to front-line managers. Middle managers communicate the strategic goals of senior management to the front-line managers.

Lower managers, such as supervisors and front-line team leaders, oversee the work of regular employees and provide direction on their work.

In smaller organisations, an individual manager may have a much wider scope. A single manager may perform several roles or even all of the roles commonly observed in a large organisation.

Managers of all levels are united in the organisational structure of one or another type. Organisational structure is an ordered set of permanently interrelated elements that ensure the functioning and the organisation/enterprise development as a whole.

Organisational structure affects organisational action in two ways:

- it provides the foundation on which standard operating procedures and routines rest;
- it determines which individuals get to participate in which decision-making processes, and thus to what extent their views shape the organisation’s actions.

An organisational structure defines how activities such as task allocation, coordination and supervision are directed toward the achievement of organisational aims. Organisations need to be efficient, flexible, innovative and caring in order to achieve a fixed competitive advantage.

An organisation can be structured in many different ways, depending on its objectives. The structure of an organisation will determine the modes in which it operates and performs. Organisational structure allows the expressed allocation of responsibilities for different functions and processes to different entities such as a branch, a department, a workgroup, and an individual.

Elements of the structure include individual workers, services and other parts of the administrative apparatus. The relations between elements of the structure are linked. The links between the organisational structure elements are divided into horizontal and vertical. Horizontal links have the nature of coordination and are, as a rule, single-level. Vertical links are the connections of subordination, and the need for them arises in the hierarchy of management, i.e. if there are several levels of control. Links in the management structure can be line and functional.

So we have Line Organisational Structure, Functional Organisational Structure and others.

The Line Organisational Structure is the most traditional of the organisational structures that businesses use. There’s an executive at the top of the heap, people responsible for each area (the director level is for bigger businesses), and teams of people who do the work in each department.

The advantage of this type of organisational structure lies in its simplicity. The disadvantage lies in its rigidity and the length of time needed for information to flow through the organisation. Everyone just gets on with the allocated task.

Having said that, this type of organisational structure could work for businesses who work according to a rigid routine, collaborate informally, and don’t employ many people.

The Functional Organisational Structure is very similar to the traditional line structure, but there are far more lines of communication. In this organisational structure example, we can see that although both directors have people over whom they have direct authority, they can also send in-
formation to managers they don’t directly control. The same is true of the managers’ relationship with teams.

The purchasing department may want the financial manager to pay an authorized supplier. The team member goes straight to the financial manager. A team leader in production needs help from the HR manager, or HR wants to task the production team leader with something. There’s a direct line of communication open. Communication is vital to the successful implementation of this organisational structure example.

The Line and Staff Organisational Structure. To understand this structure, we first need to understand what “staff” means in this context. Staff members are advisors. They provide technical information, advice, and opinions. They may be able to authorize certain activities, and they might compile reports that help with decision-making. This type of organisational structure works best for companies in specialist fields. It’s typical of businesses who need experts in knowledge areas like engineering, sciences, law, or insurance.

The Project-Based Structure. If your business engages in projects that differ from client to client and from project brief to project brief, being able to assemble the right team for the job is helpful. This organisational structure example changes all the time. The director appoints a leader for every project and makes people who have the necessary expertise part of the team. When the project finishes, team leaders and managers are assigned to new projects.

You’ll choose this type of organisational structure if your business takes on projects that require teams of specialized employees and lots of collaboration. The big advantage is that you can always choose the best team for any particular project.

Some words about the drawbacks. Teams must adapt to a new set of colleagues, and sometimes a new manager, every time they tackle a new task. The manager has to be an all-rounder, controlling all the traditional management functions of finance, marketing, HR, operations, and so on. One way around this is to have a functional structure that serves all the project leaders in the project-based structure.

The Matrix Structure. This hybrid organisational structure example tries to combine a functional organisational structure with a matrix-based one. In this instance, the business is also project-based, but the team follows a functional structure.

Each team leader is assigned a representative or team from each traditional functional area that would apply to the project and its team. This functional team member reports to the project leader as well as the functional manager in his or her area of specialization. That’s right; there are two “bosses.” It can work, but it can also present challenges.

The functional manager’s job is to see that employees and activities align with the company’s policies and standards. The team leader’s job is making sure that the team completes the project as planned.

Each organisational structure has its pros and cons. The trick is to find a form of organisational structure in which your business gets the most benefit from the pros and suffers least from the cons.

2.3. Economic Indicator

In the process of studying this course, we will constantly meet economic indicators. Therefore, it is important to know the definition and classification of economic indicators. Economic indicators is the calculated values that characterize the operating conditions and the results of the organisation/company/enterprise.

Indicators are a means to measure change. They are the base for much of monitoring and evaluation. Yet indicators are approximations, based largely on assumptions: the smaller or more accurate the assumption, the more reliable the indicator. A mix of qualitative and quantitative indicators usually reveals nuances and greater insight into what is happening.

Classification of economic indicators:
1) quantitative and qualitative - as a rule, the former are expressed in absolute terms, the latter are relative ones;

2) on the meters: natural, value and labour. Natural indicators are used to quantify the production of the enterprise in its material content. Value indicators are the most versatile meter in terms of commodity-money relations. Labour indicators are used to plan and analyze labour resources;

3) for a functionally meaningful purpose: there are planned, estimated and calculated and analytical.
3. PRODUCTION ACTIVITY

3.1. PRODUCTION

Production is a process of combining various material inputs and immaterial inputs (plans, know-how) in order to make something for consumption (the output). It is the act of creating output, a good or service which has value and contributes to the utility of individuals.

Economic well-being is created in a production process, meaning all economic activities that aim directly or indirectly to satisfy human wants and needs. The degree to which the needs are satisfied is often accepted as a measure of economic well-being. In production there are two features which explain increasing economic well-being. They are improving quality-price-ratio of goods and services and increasing incomes from growing and more efficient market production.

Manufacturing is production of merchandise for use or sale using labour and machines, tools, chemical and biological processing, or formulation.

The term may refer to a range of human activity, from handicraft to high tech, but is most commonly applied to industrial production, in which raw materials are transformed into finished goods on a large scale.

Such finished goods may be sold to other manufacturers for the production of other, more complex products, such as aircraft, household appliances, furniture, sports equipment or automobiles, or sold to wholesalers, who in turn sell them to retailers, who then sell them to end users and consumers.

Every economy in the world face three main basic economics problems because the needs and wants of the society are unlimited but the resources available to satisfy those are limited. Whether a country is rich or poor this is a common situation to all of them. The main economic issues are:

1. What to Produce in which quantities?
2. How to Produce?
3. Whom to Produce For?

The production process can be viewed both as a technological process and as a work process. The technological process is the work method used by technology and consists of the ordered sequence of steps that must be followed in order to meet a need or solve a problem. The labour process is a purposeful activity aimed at creating a finished product and providing services.

The elements of production process are
- the work itself, a purposeful productive activity;
- the object(s) on which that work is performed;
- the instruments which facilitate the process of work

The relations of production are connected to the system of productive forces: human subjects have labour power within a labour process that interacts with the means of production (object). The means of production consists of the object of labour (natural resources, raw materials) and the instruments of labour (technology).

In the labour process, humans transform the object of labour (nature, culture) by making use of their labour power in tandem with the instruments of labour. The result is a product of labour. Labour is materialized in the product and the object is, as a result, transformed into a use value that serves human needs.

3.2. PRODUCTION STRUCTURE & PROCESS TYPES

Production Structure of an industrial enterprise, a complex of subdivisions and their relationships and ties in the process of manufacturing output. In organisational terms, each stage of the production process takes shape in the appropriate structural subdivision.

The primary structural production unit is the workplace, where individual operations are carried out. Workplaces are combined into production sections which in their turn are combined to form workshops. In the workshops, a product or part of a product is manufactured or a stage of the
production process is completed. At large enterprises, workshops are combined into enterprise or organisation.

In the production process we can identify the main, auxiliary, servicing and energy supply processes. The main production process is a technological process, during which changes occur in the geometric shapes, dimensions, physical and chemical properties of products. Auxiliary Production is the part of the production activity of an enterprise essential to servicing the main and auxiliary production. These include warehousing, transportation and inspection work. The energy supply process is a process of providing all kinds of energy (electric, thermal, water, compressed air, etc.)

The production structure is related to the location of the production links and takes shape as the enterprises and associations are designed or reconstructed. However, when a new product is developed or the production method or set of equipment is altered, it is necessary to reorganize the production links and the production structure.

3.3. Basic types of production system

As it was said before, the art of converting raw material into finished goods with application of different types of tools, equipments, machine tools, manufacturing set ups and manufacturing processes, is known as production. Generally, there are three basic types of production system that are given as under.

1. Job production
2. Batch production
3. Mass production

Job production comprises of an operator or group of operators to work upon a single job and complete it before proceeding to the next similar or different job. It requires fixed type of layout for developing same products.

Manufacturing of products (less in number, say 200 to 800) with variety of similar parts with very little variation in size and shape is called batch production. Whenever the production of batch is over, the same manufacturing facility is used for production of other batch product or items. The batch may be for once or of periodical type or of repeated kinds after some irregular interval.

### Table 3.1

<table>
<thead>
<tr>
<th>Factors</th>
<th>Basic types of production system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Product range</td>
<td>Job production</td>
</tr>
<tr>
<td></td>
<td>Batch production</td>
</tr>
<tr>
<td></td>
<td>Mass production</td>
</tr>
<tr>
<td>2. Constancy Product range</td>
<td>Absent</td>
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<tr>
<td></td>
<td>There is</td>
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<td></td>
<td>There is</td>
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<tr>
<td>3. Issue volume</td>
<td>Little</td>
</tr>
<tr>
<td></td>
<td>middle</td>
</tr>
<tr>
<td></td>
<td>Large</td>
</tr>
<tr>
<td>4. Securing operations at workplaces</td>
<td>Absent</td>
</tr>
<tr>
<td></td>
<td>Partial</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>5. Applied equipment</td>
<td>Universal</td>
</tr>
<tr>
<td></td>
<td>Universal + special</td>
</tr>
<tr>
<td></td>
<td>Mainly special</td>
</tr>
<tr>
<td>6. Applied tools and accessories</td>
<td>Universal</td>
</tr>
<tr>
<td></td>
<td>Universal + special</td>
</tr>
<tr>
<td></td>
<td>Mainly special</td>
</tr>
<tr>
<td>7. Qualification of workers</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
</tr>
<tr>
<td></td>
<td>Mainly Low</td>
</tr>
<tr>
<td>8. Cost of production</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>9. Shops and sections production</td>
<td>Technological</td>
</tr>
<tr>
<td>specialization</td>
<td>Mixed</td>
</tr>
<tr>
<td></td>
<td>Subject</td>
</tr>
</tbody>
</table>

Where as mass production involves production of large number of identical products (say
more than 50000) that needs line layout type of production which is highly rigid type and involves automation and huge amount of investment in special-purpose machines to increase the production.

The table 3.1 shows the characteristics of the basic types of production. As you can see, they differ in 9 factors.

When organizing production, there is always a goal to optimize it for specific conditions. Therefore, in modern conditions, the methods of production change.

### 3.4. Production Capacity

The **Production Capacity** is the maximum amount of output that can be obtained through a certain machine or production line. Capacity can also be expressed in terms of an output rate of a certain number of units per unit of time.

When a plant is first designed, capacity planning is one of the first steps in the supply chain design process. The objective of capacity planning is to have enough production ability to meet the market's requirements without excessive lead time delays.

The production capacity is calculated using the following formula:

\[ M = \text{Teff} \times n \times H, \]

where \( \text{Teff} \) – the operating time of the piece of equipment, h;
\( n \) – the number of the same type of equipment at the production section / in the workshop;
\( H \) – the norm of capacity of the unit of equipment per hour (natural meter).

The **operating time of the piece** of equipment multiplies by number of the same type of equipment at the production section or in the workshop, and multiplies by the capacity norm of the equipment unit per hour (natural meter).

The average annual capacity (\( \text{Caa} \)), taking into account the input of new equipment and the output of the obsolete one, is calculated as follow:

\[ \text{Caa} = \text{Cby} + \text{Cin} \times \text{Tin} / 12 - \text{Cout} \times \text{Tout} / 12 - \text{Mo} \times \text{Cota} / 12, \]

where \( \text{Cby} \) is the capacity at the beginning of the year;
\( \text{Cin} \) - new equipment input;
\( \text{Tin} \) - number of months of introduced equipments work;
\( \text{Cout} \) - output equipment;
\( \text{Tout} \) - the number of months when the output equipment will not work;
\( \text{Cota} \) - capacity increase due to organisational and technical activities;
\( \text{Tota} \) - number of work months after the implementation programmes;
\( 12 \) - number of months.

The **Equipment utilisation** is the extent to which an enterprise uses its installed productive equipment. It is the relationship between output that is produced with the installed equipment, and the potential output which could be produced with it, if equipment was fully used.

The **Potential output** represents the maximum amount of output that can be produced in the short-run with the existent stock of capital. Thus, a standard definition of equipment utilization is the average weighted ratios between the actual output of firms to the maximum that could be produced per unit of time, with existing plant and equipment. Output could be measured in physical units or in market values, but normally it is measured in market values.

### 3.5. Competitiveness and Quality

These are two important points that must be considered when organizing the production of products and providing services.

Traditionally, the main measures of competitiveness are in financial or marketing terms. For example, a competitive business might be expected to achieve one or more of the following:
- A higher growth rate (sales, revenues) than competitors and the market as a whole
- Higher than average net profit margin (compared with others in the same industry)
- Better than average returns on investment (e.g. ROCE, ROI) – again, compared with competitors

A high (and perhaps leading) market share – measured in either value or volume terms. The leading firms in a market usually enjoy a significant proportion of the available revenues or customer demand, unless the market is highly fragmented.

- The strongest brand reputation in the market – e.g. brand awareness
- A clearly defined unique selling point that enables the business to differentiate its product or service in the eyes of customers
- Significant access to, or control of, distribution channels in the market (e.g. products or brands that are widely stocked or demanded by intermediaries who provide distribution to the final consumers).

However, there are many other measures of competitiveness which link directly to the other functional areas of the business. For example, a highly competitive business may enjoy the following advantages compared with other firms:

- Better quality – e.g. reliability, product features, performance
- Better customer service – e.g. after-sales support, customer information, handling of problems & complaints
- Higher than average customer loyalty (remember than in most markets, the most profitable customers are existing, loyal customers)

- Better than average efficiency – e.g. being able to produce at a lower unit cost than most other competitors, either through better productivity or economies of scale
- Faster and more effective decision-making and communication – e.g. with employees involved in customer-facing roles empowered to handle customer issues or able to pass on key market information to managerial decision-makers.
- A more motivated and loyal workforce – which in turn should benefit productivity, efficiency, quality, customer service etc.

In business, engineering, and manufacturing, quality has a pragmatic interpretation as the non-inferiority or superiority of something. It's also defined as being suitable for its intended purpose (fitness for purpose) while satisfying customer expectations.

The Quality is a conditional and somewhat subjective attribute and may be understood differently by different people. Consumers may focus on the specification quality of a product/service, or how it compares to competitors in the marketplace. Producers might measure the conformance quality, or degree to which the product/service was produced correctly. Support personnel may measure quality in the degree that a product is reliable, maintainable, or sustainable.

Quality is the group of features and characteristics of a saleable good which determine its desirability and which can be controlled by a manufacturer to meet certain basic requirements. Most businesses that produce goods for sale have a product quality or assurance department that monitors outgoing products for consumer acceptability.
4. FIXED ASSETS

4.1. FIXED ASSETS, THEIR STRUCTURE AND CLASSIFICATION

To carry out production activities, the enterprise must have the necessary means of labour, use them rationally and replenish them in a timely manner. The most important economic category, characterizing the means of labour, is fixed assets.

The **Fixed assets**, also known as 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.

The Fixed assets include means of production which repeatedly participate in the production process, preserve their natural form, and transfer their value to manufactured production by parts according to the degree of their wear and tear. Means of production with the term of service of more than 12 months belong to fixed assets.

The Tangible fixed assets have physical existence (fig. 4.1). They include buildings, machinery, constructions, machines and equipment, manufacturing and household inventory, cattle (draught animals, productive livestock, pedigree cattle), perennial planting, power equipment, working machines and equipment, computing equipment and other material fixed assets.

The Intangible fixed assets have non-physical existence. They include copyrights, computer programs, franchises, goodwill, import permits, licenses, organisation costs, patents, trademarks, to name but a few.

![Fig. 4.1. The structure of fixed assets.](image)

The fixed assets are classified according to the following characteristics:

- In relation to the type of economic activity (used in industry, in agriculture, in construction, in transport, etc.);
- According to the natural-material composition, depending on the purposes of use and the functions performed (the classification according to this feature was shown in the previous slide);
- In relation to the production process (productive (active part, passive part) and non-productive);
- Depending on the condition (new, in a very good condition; in a good condition; in a satisfactory condition; suitable for use; in a bad condition);
- Depending on the possibility of reproduction (new construction; expansion; modernization; reconstruction; technical re-equipment);
- Depending on the way depreciation is calculated.
It should be noted that the structure of fixed assets differs significantly in economic activities. Thus, in the light industry, the share of the active part of the basic production assets is more than 55%, in the fuel industry - about 40%, and in rail transport - less than 30%. The structure of fixed assets is calculated based on their value.

4.2. VALUE OF FIXED ASSETS

In practice, various types of cost of fixed assets are calculated. Such as market, initial, insurance and others. They both can coincide, so they can differ. It all depends on the methodology for calculating a particular type of fixed assets value.

We will consider the main types of fixed assets value, namely, the initial, restoration and residual.

The initial (historical, original) cost includes the price of the acquired item of property, plant and equipment, as well as the costs of delivery, installation and commissioning.

The fixed assets are usually carried at their acquisition cost. Acquisition cost includes the price and all the fees to be paid in order to obtain the asset. For example, when acquiring some power tool, the owner pays for it the purchase price and the expense for delivery of the tool to the owner’s facility.

Very often the bigger equipment/tools also require to be assembled, installed, or just tuned in. The moneys paid in by the equipment owner for these extras, accumulate into what is the acquisition cost, i.e. the purchase price + spending are to be done to set the asset up for expected operation.

The restoration value is treated as the cost of reproduction of fixed assets in modern conditions, i.e. the cost of new similar fixed assets, capable of replacing the existing ones.

The residual value is defined as the difference between the replacement or initial value of property, plant and equipment and the amount of depreciation accrued thereon.

4.3. WEAR AND TEAR OF FIXED ASSETS

The Fixed assets, as a rule, have useful time or useful life in excess of one year. The Useful time implies this period of the asset’s exploitation during which it is in good technical condition, is able to produce reliably and generate economic benefits. For instance, the useful time of PC-s can be, roughly, three years; that of automobiles and trucks – about 5 years, depending on their exploitation or use, of course.

Over the useful time the asset wears down physically, and also due to obsolescence, i.e. appearing of tools and technologies that are more contemporary, of newer generations, more state-of-the-art. As a consequence of obsolescence, the asset may be physically brand new, without the slightest wear or tear, yet unwanted by buyers, due to being obsolete, i.e. outdated or superseded by more efficient models.

Hence, beginning from the first day of utilizing the asset, the owners are compelled to looking ahead of replacing the asset, once its useful time will be over. They also need funds for that. Therefore, accountants in companies depreciate the asset’s value annually. Depreciate means showing in lower cash value. This is called depreciation (of fixed assets) or fixed assets are depreciated.

A similar process takes place in the accounting for intangible fixed assets that also use their efficiency and value over the useful time. Accounting for the real value of intangible assets on the annual bases is called amortization. Thus, tangible fixed assets are depreciated and intangible fixed assets are amortized. Accountants account for depreciation of tangible fixed assets and amortization of intangible fixed assets.

The Fixed assets lose value as they age. Because they provide long-term income, these assets are expensed differently than other items. Tangible assets are subject to periodic depreciation, as intangible assets are subject to amortization. A certain amount of the asset's costs is expensed annually. The asset's value decreases along with its depreciation amount on the company’s balance sheet. The corporation can then match the asset's cost with its long-term value.
Thus, the process of wear and tear of fixed assets and the process of calculating the amortization of their value proceed simultaneously and in different directions.

At the same time, in fact, the process of depreciation of fixed assets is completely different than the process of calculating depreciation.

Physical, moral and economic wear are allocated.

Physical wear characterizes the loss of the initial technical and operational qualities of the object (or part thereof) as a result of the impact of natural-climatic and operational factors.

Moral (functional) wear shows the non-compliance of the object with modern standards in terms of its functional utility.

Economic (external) wear is manifested in a decrease in the degree of utility of the object of fixed assets under the influence of economic, political and other external factors.

The total wear level is calculated by the following formula:

$$ Wfa = 1 - (1 - Wp) \cdot (1 - Wm) \cdot (1 - We), $$

where Wp, Wm, We - the degree of physical, moral and economic wear, expressed in fractions.

The cost of maintaining the performance of worn fixed assets significantly increases the cost of the company, reducing its economic efficiency. The fixed assets operability during operation is provided by the maintenance and repair system.

There are the following approaches to the formation of the maintenance and repair system. The first system is a planning-preventive system for the maintenance and repair of technical equipment and their elements. It provides for a regulated frequency and scope of maintenance and repair forms. The system of technical equipment operation "as it is that" has no strictly established periods of maintenance and repair. Operation of technical equipment is carried out as long as it is technically possible and economically feasible.

### 4.4. Depreciation of Fixed Assets and Methods of Charging Depreciation from Fixed Assets

The straight-line method charges the same amount of depreciation to expense in every reporting period. To determine how much depreciation a specific asset will have with this method, divide the cost of the asset evenly over its years of life. This approach probably approximates the average usage pattern of most assets, and so is a reasonable way to match revenues to expenses. It is also the easiest depreciation method to calculate, which makes it by far the most commonly-used depreciation method.

The accelerated depreciation method is designed to charge the bulk of the depreciable amount of a fixed asset to expense as soon as possible, with a rapidly-declining amount being charged to expense in later periods. Examples of this method are the double-declining balance method and the sum of the years’ digits method. This approach is useful for depressing short-term profits in order to reduce the amount of taxable income. However, it is difficult to calculate, usually does not reflect the actual usage pattern of a fixed asset, and skews the reported results of a business.

The sum-of-the-years'-digits method is another accelerated method of calculating depreciation. However, the depreciation of the first years is even larger than in the declining balance method. To calculate depreciation with this method, find the depreciation fraction, which is the asset's total years of life still left divided by the sum of all the years. For example, if the asset's life is four years, divide the years still left by the following sum: 1+2+3+4. The general formula for the sum of the year is 1+2+3+4+...+n, where "n" is the asset's total life. Multiply the value of the fraction of each year by the difference between the cost of the asset and its salvage value. The result you get each year is the depreciation for that year.

The usage-based depreciation method is designed to have a variable periodic depreciation expense that is based on the amount that a fixed asset is actually used. An example of this method is
the units of production method. This is the most accurate of the depreciation methods in matching actual usage to the related depreciation expense, but suffers from an inordinate amount of record keeping to track usage levels. Given this problem, it is usually restricted to the more expensive fixed assets which usage levels vary considerably over time.

Depreciation methods allow companies and individuals to show how much value their assets lose over a certain amount of time. You may choose from various different depreciation methods to show the depreciation in value for fixed (Also called non-current) and current assets. The type of method you use depends on your company's needs, your financial situation and the way in which you use your assets.

Among the methods of depreciation noted here, the most practical one is the straight-line method, since it requires minimal upkeep and is the easiest to understand.

4.5. Indicators of movement and use of fixed assets

Changes in the composition of fixed assets are characterized by the coefficients of income (input), updates and retirements.

\[ \text{Kin} = \frac{FArec}{FAey}, \quad \text{Kup} = \frac{FAnew}{FAey}, \quad \text{Kret} = \frac{FAret}{FAby}, \]

where FAr - the value of received fixed assets;
FAey - the cost of fixed assets at the end of the year;
FAnew - the cost of new fixed assets;
FAout - the value of retired fixed assets;
FAby - the cost of fixed assets at the beginning of the year.
The condition of fixed assets is characterized by coefficients of wear and shelf life.

**Coefficients of wear** = the amount of depreciation (accrued depreciation) of fixed assets / the initial value of fixed assets

**Coefficients of shelf life** = the residual value of fixed assets / the initial value of fixed assets

Summary Indicators are capital-productivity ratio, capital-output ratio, capital-labour ratio:

**Capital-productivity ratio** = the volume of production / the average for the period the cost of fixed assets

**Capital-output ratio** = the average for the period the cost of fixed assets / the volume of production

**Capital-labour ratio** = the average for the period the cost of fixed assets / the number of workers

When the introduction and disposal of fixed assets during the year known, then we can calculate the average annual value of fixed assets:

\[ FAaa = FAby + FAin (Tin / 12) - FAout (Tout / 12), \]

where FAb - fixed production assets at the beginning of the year;
FAin - entered production assets (input);
FAout - derived production assets (disposal);
Tin / Tout - the number of full months from the date of entry (retirement).
5. CIRCULATING ASSETS

5.1. CIRCULATING ASSETS CONCEPT AND ITS STRUCTURE

Economic dictionaries provide several synonyms for the translation of the term "circulating assets". All range of the terms: floating assets, floating funds, turnover means, current assets, working assets, working capital. We will use following terms to determine different conceptions. Therefore, we shall call "оборотные средства" circulating assets, "оборотные фонды" working capital and "фонды обращения" floating funds in circulation.

The circulating assets are divided into working capital and floating funds in circulation.

The circulating assets represent the funds invested in the current assets of the enterprise, regularly renewable to support current activities, and turn around at least once a year or one production cycle. Circulating assets fully transfer their value to the cost of manufactured products in one production cycle. The circulating assets maintain the reproductive process. The size and structure of the circulating assets of the enterprise depend on external and internal factors.

The working capital is designed to serve the sphere of production and materialize in the objects of labour (raw materials, materials, fuel) and partly in the means of labour, and is also embodied in production stocks, semi-finished products of their own manufacture.

The floating funds in circulation do not participate in the production process, and their purpose is to provide the necessary resources for the circulation process and to service the company's circulation.

The working capital in its movement is closely related to the circulation funds and characterizes a single process.

The function of circulating assets is in the payment and settlement maintenance of the cycle of material values.

The assets pass through three stages: supply, production and marketing (fig. 5.1):

![Image of circulation of circulating assets](image)

Fig. 5.1. The circulation of circulating assets.

The funds are advanced on the purchase of inventories: raw materials, materials, energy. Next, inventories come into production. In the production process, they become finished products or contribute to the creation of finished products. Then the finished product can be sold and the company will receive cash in return. Thus circulating assets make a turnover.

The working capital includes: inventories, work in progress, semi-finished products of own production, deferred expenses (fig. 5.2).

The floating funds in circulation include: remains of finished products, shipped products, receivables and cash.

Inventories, work in progress, semi-finished products of own production, deferred expenses, the remains of finished products are standardise.

The management of circulating assets implies optimization of its size, structure and values of its elements.

The main elements of circulating assets are inventories, receivables, cash, which are also called current assets.
The inventory management is aimed at ensuring the smooth implementation of the process of production and sale of products/services and minimization of the organisation’s costs of their maintenance. The effective inventory management reduces the cost of purchasing and storing them, frees up some of the circulating assets, and reinvests it in other assets.

The receivables management is aimed at optimizing its size and structure to ensure and maintain the financial stability of an enterprise. The effective management of receivables allows you to release the funds of the enterprise and send them to solve current problems related to the operation of the enterprise.

The cost of circulating assets affects the value of the company's assets and the cost of production.

5.2. Methods determining the actual cost of material resources

For the evaluation of inventories in Russian practice of accounting, four methods are used to determine the actual cost of material resources charged to production costs.

There is the unit cost of each type of materials, average cost, FIFO, LIFO.

The first method is the method of unit cost of each type of materials. This method is time consuming, therefore limited in use in practice. This method applies to stocks used by the organisation in a particular order (for example, precious stones, metals, etc.), or to stocks that cannot replace each other in the usual way.

The second method is the method of the average cost. This method is based on determining the weighted average actual unit cost of each type of material resources released into production.

The third method is FIFO. It is an abbreviation for “First In First Out”. When using this method, inventories are used during the reporting period in the sequence of their purchases.

The material resources charged to the cost of goods / works / services sold are estimated at the actual cost of the early time purchases. The remaining in stock (in warehouse) material resources at the end of the reporting period are estimated at the actual cost of the latest purchases.

The forth method is LIFO. It is an abbreviation for “Last In First Out”. When using the LIFO method inventory is used back accounting. The material resources charged to the cost of goods (works, services) sold are estimated at the actual cost of the most recent purchases. The material resources remaining in stock (in warehouse) at the end of the reporting period are estimated at the actual cost of early purchases.
5.3. **Material resources and indicators of its use**

The wider the range and complexity of the products produced in the enterprise, the greater the range of consumed material resources (inventories).

The range of resources consumed is a systematized list in a comprehensive assortment (by brand, grade, size, article).

**Material resources** include raw materials, purchased semi-finished products, materials, energy, fuel, containers, spare parts.

**Raw materials** are objects of labour, sent to production for primary processing by the extractive industries and agriculture.

**Materials** are objects of labour, partially processed. They are divided into primary and secondary by the nature of their use in the production process.

**The main materials** are intended for the manufacture of products (works, services) and are included in the weight of the manufactured product;

**Auxiliary materials** are involved in the implementation of the production process. They are necessary for the implementation of various technological processes, which maintain fixed assets in working condition.

**Purchased semi-finished products** are objects of labour that have gone through several stages of industrial production at an enterprise, but require further processing at other enterprises.

**Energy and fuel** are objects of labour, which drive equipment, vehicles and ensuring the normal course of labour.

**Package** is a storage container, a container for packaging and transportation of goods.

**Spare parts** are funds intended for all types of repairs in order to maintain the means of labour in working condition.

**Consumption rate** is the maximum allowable consumption of the corresponding material resources per unit of production in the conditions of this level of the applied equipment and organisation of production.

\[
Rc = \frac{W_{net}}{F_{mu}}, \quad Rc = W_{net} + W, \quad Rc = \frac{\sum TV_{mr}}{Q},
\]

where \(Rc\) - gross, rough consumption of raw materials, weight of the workpiece (t, kg, m);

\(W_{net}\) - the net weight of the material in the product (t, kg, m);

\(F_{mu}\) - material utilization factor;

\(W\) - waste (t, kg, m);

\(Q\) - the number of manufactured products, units;

\(\sum TV_{mr}\) - the total value of the consumption of material resources (t, kg, m).

5.4. **Need of organisation / enterprise for circulating assets**

**The need of organisation / enterprise for circulating assets**

For the normal operation of the enterprise, it is necessary to calculate the amount of circulating assets sufficient to obtain the planned volume of production and sales of products and at the same time ensure minimal diversion of funds from circulation.

Standardization of circulating assets includes:

1) the calculation of the daily consumption (daily needs) of each type of material values;

2) the calculation of the stock standard of inventories;

3) the calculation of the standard of circulating assets for individual elements of wealth and circulating assets in general.

**The stock standard** characterizes the minimum size of stocks of inventories. For materials, fuel, work in progress, deferred expenses it is set in days, for packages - in rubles per 1000 rubles of marketable products.
The circulating assets standard depends on the type of standardized elements of resources and used in the enterprise inventory management system.

**The standard of circulating assets** is the minimum need for circulating assets for the formation of the necessary stocks of inventories in monetary terms for the normal operation of the enterprise.

Distinguish between the cumulative standard, reflecting the total amount of circulating assets, and standards for individual elements of circulating assets.

Standardisation inventories.
Average daily consumption.

\[ C = \sum Cmr / 360 \ (90, 30), \]

where \( \sum Cmr \) - the consumption of material resources per year (quarter, month)

The reserve standard in days consists of current, insurance, transport technology, preparatory stocks.

The reserve standard in days consists of current Dcs, insurance Dss, transport Dts, technology Dths, preparatory stocks Dps:

\[ Sefs = P (Dcs + Dss + Dts + Dths + Dps) \]

Current stock is the main type of stock necessary for the smooth operation of the enterprise between two successive deliveries;

Safety stock is the second largest type of stock, created in case of unforeseen fluctuations in supply (50% of current) stock;

Transport stock is created in case of exceeding the terms of turnover in comparison with the terms of document circulation at enterprises remote from suppliers at a considerable distance;

Technological stock is created in cases where raw materials need pretreatment, if it is not part of the production process.

The standard of work in progress depends on the volume and composition of products, the duration of the production cycle, the cost of production and nature of net increase.

Cost increase ratio:

\[ Rwpr = \text{net cost of production} \times \text{production cycle duration} \times \text{cost increase ratio} \]

The standard of finished products is calculated on the basis of the average daily shipment of products, the standard time required for the selection (picking) of products for orders, packaging and transportation of products to the station of departure, execution of payment documents

\[ Sfp = W \times Dfp, \]

where Dfp - the standard of inventories in days for finished products.

Rationing deferred expenses is the need to finance some of the costs that are currently being committed, but will be charged to the cost in the future.

The deferred expenses include the costs of mastering new types of products, improving production technology, preparatory and other work. These costs include such cost items as a subscription to periodicals, rent and taxes paid in advance, etc.

\[ \text{deferred expenses} = \text{a carry-over amount of future expenses at the beginning of the planned year} \]
\[ + \text{expenses of future periods in the coming year, provided for by estimates} - \text{deferred expenses to be written off to the cost of production of the coming year} \]

The total need for standardized circulating assets is determined in this case as the sum of standards for certain types of inventories.
To this sum, the value of non-normable current assets determined by the method of consolidated calculations is added, and as a result, the total need of the enterprise for circulating assets is determined.

5.5. **INDICATORS OF USE OF CIRCULATING ASSETS**

Circulating assets have a significant impact on the liquidity and solvency of the company, which, in turn, characterize the financial condition of the company and are indicators of its financial stability.

The company must maintain the availability of optimal volume and structure of current assets, because in the absence of the necessary amount of elements of circulating assets, the company is unable to pay its bills and fulfill the obligations in a timely manner.

Circulating assets utilization efficiency is assessed using the following indicators:

- Circulating assets turnover ratio in turnover;
- Circulating assets turnover ratio in days;
- Coefficient of fixing (loading) of circulating assets.

The turnover of circulating assets refers to the duration of a complete capital cycle from the moment of purchase of circulating assets (purchase of raw materials, materials, etc.) to the output and sale of finished products.

\[
\text{Circulating assets turnover} = \frac{\text{sales}}{\text{circulating assets}}
\]

\[
\text{Circulating assets turnover (in days)} = \text{circulating assets} \times \frac{\text{period duration}}{\text{sales}}
\]

\[
\text{Coefficient of circulating assets fixing} = \frac{\text{circulating assets}}{\text{sales}}
\]
Economic dictionaries provide synonyms for the translation of the term "Personnel" and several terms associated with the general term Personnel. Let's look at them.

The personnel of an organisation is a collection of individuals who perform various functions in the production of material goods, the provision of services, and the satisfaction of intellectual, cultural, and other needs.

The workforce is the total number of people in a country or region who are physically able to do a job and are available for work. The workforce is also the total number of people who are employed by a particular company.

An employee is a person who is paid to work for an organisation or for another person.

Individuals are in a relationship governed by the contract of employment with the company as a legal entity.

In such a relationship, not only employees can be members, but also individuals — owners or co-owners of an enterprise who, in addition to the part of their income due to them, receive an appropriate payment for their direct participation in a particular firm’s work.

The composition and quantitative ratios of individual categories and groups of employees of the enterprise characterize the structure of personnel.

Personnel of the enterprise directly related to the process of production of products (services), i.e. engaged in the main production activities, are industrial production personnel (fig. 6.1).

Fig. 6.1. The classification of industrial production personnel.

Workers are those who are directly engaged in the creation of material values or work on production services and movement of goods.

A worker works especially at manual or industrial labour or with a particular material.

Workers include main, auxiliary workers and apprentices.

Main (production) workers are directly engaged in the manufacture of products, the performance of works or the provision of services.

Auxiliary workers maintain production processes and create conditions for the smooth operation of main workers.

Apprentices master working skills.

Employees are divided into managers, specialists and employees themselves.

Managers are persons authorized to make management decisions and organize their implementation. We talked about them in one of the first lectures.
Specialists are employees engaged in engineering, economic, accounting, legal and other similar activities.

Employees themselves are employees who prepare and execute documents, accounting and control, business management and record keeping (agents, cashiers, controllers, clerks, accountants, draftsmen, etc.).

Personnel of the enterprise are divided by professions, specialties and qualification levels.

Profession means a special kind of work that requires certain theoretical knowledge and practical skills.

Specialty means the type of activity within the profession, which has specific features and requires additional special knowledge and skills from employees.

Qualification characterizes the degree of mastery by workers of a particular profession or specialty. Qualification is reflected in qualification (tariff) rating and categories that they are assigned depending on the theoretical and practical training.

Types of staff numbers are a real number of employees, a staff listing, an average headcount staff.

Real number of employees characterizes the number of employees on the list of employees who came to work on a given day, including those on business trips.

This is the required number of employees to perform production tasks or perform production functions.

Staff listing is an indicator of the employees number on a certain number or date.

It takes into account the number of all employees of an enterprise who are employed in permanent, seasonal and temporary work in accordance with the concluded labour contracts, as well as working owners of the organisation who receive wages in it.

The difference between real number of employees and staff listing characterizes the number of missing for various reasons (vacation, illness, etc.)

To bring the staff listing to the real number of employees, we use the coefficient of transfer of the real number of employees or workers to the staff listing one:

\[ N_{sl} = N_{real} \times k_{sl}. \]

Average headcount of staff is the average employees number for a certain period (month, quarter, from the beginning of the year, per year).

Average headcount shows the average employees number on a daily basis in the company’s lists for the period under review.

The main methods for determining the quantitative need for personnel are the calculations according to labouriousness of a production program; output quota; by service standard; work place.

The employees number (Ne) according to labouriousness of a production program is determined by the formula:

\[ Ne = (L_{pl} / F_{eff}) / K_{lp}, \]

where \( L_{pl} \) - the planned technological labouriousness of a production program, standard hours;

\( F_{eff} \) - planned (effective) fund of working time per worker per year, hours;

\( K_{lp} \) – labour performance coefficient

The employees number (Ne) according to labouriousness of a production program is determined by the formula:

\[ Ne = (L_{pl} / F_{eff}) / K_{lp}, \]
where \( Lpl \) - the planned technological labouriousness of a production program, standard hours;

\( \text{Feff} \) - planned (effective) fund of working time per worker per year, hours;

\( \text{Klp} \) – labour performance coefficient.

**The output quota** is more simplified and less accurate due to the influence of prices and material intensity of products on the volume of products in terms of value.

The employees number according to **output quota** is determined by the formula:

\[
Ne = (Qpl / Spl) / Klp,
\]

where \( Qpl \) - the planned production volume (work performed) for a certain time period;

\( Spl \) - the planned output quota standard in the same units of measurement and for the same period of time

The employees number according to **service standard** is determined by the formula:

\[
Ne = Eq / Sstand \times Ws \times ksl,
\]

where \( Eq \) - the number of installed equipment units;

\( Sstand \) - the service standard (the number of equipment units serviced by one worker);

\( Ws \) - the number of work shifts;

\( ksl \) - the conversion factor of the attendance of workers in the payroll.

The employees number according to number of **work placies** is determined by the number of both main and auxiliary workers, for whom neither amount of work nor service standards can be established:

\[
Ne = Wp \times Ws \times ksl,
\]

where \( Wp \) is the number of work placies.

The **number of employees and managers** of functional services and units is determined according to the **staff list**. The staff list is a document representing a list of employees’ positions grouped by department and service.

It also indicates the category of work and official salary, which is annually reviewed and approved by the head of the organisation.

The total number of employees is determined by summing up the number of workers, students, employees and other categories for all departments of the organisation.

The change in the number of employees in connection with the dismissal and admission to work is called the personnel movement or personnel turnover of the organisation (labour force).

There are the following absolute indicators of personnel movement of the organisation:

- **recruitment turnover** is the number of people hired to work:
- **dismissal turnover** is the number of employees who left work, also due to death:
- **total labour turnover**.

Staff movement indicators:

- recruitment turnover ratio

\[
Rrt = (\text{Number of recruited} / \text{Ah}) \times 100%,
\]

where \( \text{Ah} \) - the average number of employees, people;

- dismissal turnover ratio

\[
Rdt = (\text{Number of dismissed} / \text{Ah}) \times 100%;
\]

- employee replacement ratio

32
\[ R_{er} = \left( \frac{\text{Number of recruited}}{\text{Number of dismissed}} \right) \times 100\%; \]

- labour constancy ratio

\[ R_{lc} = \left( \frac{\text{staff listing in a given period}}{\text{Ah}} \right) \times 100\%. \]

### 6.2. Personnel Productivity

**Labour productivity** characterizes the efficiency of labour inputs in material production and is determined by the number of products or services produced per unit of time or labour inputs per unit of production.

We distinguish between the productivity of **living labour**, which is determined by the cost of working time in this production and the **productivity of social (aggregate) labour**, which is determined by **living labour inputs** and **embodied labour**.

**Labour productivity** can be measured in 2 ways, in physical terms or in monetary terms.

In general, labour productivity is affected by:
- the intensity of labour-effort, and the quality of labour effort generally.
- creative activity involved in producing technical innovations;
- relative efficiency gains resulting from different systems of management, organisation, coordination or engineering;
- productive effects of some forms of labour on other forms of labour.

At enterprises, labour productivity is defined as the cost-effectiveness of only living labour input and is calculated through the indicators of output and labour intensity of products, among which there is an inverse relationship.

In an enterprise, **product output** is the most common and universal indicator of labour productivity.

There are 3 methods for determining **product output**: natural; monetary; working time standardization method.

**Product output** is calculated as the ratio of the volume of production (Q) to the cost of working time for the production of this product (T) or to the average number of employees (or workers) (H):

\[ PO = \frac{Q}{Cwt} \text{ or } PO = \frac{Q}{Ah}. \]

The growth of labour productivity characterizes the **labour intensity of production**, which is the cost of working time per unit of production:

\[ LI = \frac{Cwt}{Q}. \]

where LI - the labour intensity of the unit;
Cwt - time spent on the production of all products;
Q - volume of production.

The **indicator of labour intensity** has a number of advantages over the indicator of output, because it establishes a direct relationship between the volume of production and labour inputs, eliminates the effect on labour productivity of changes in the supply volume for cooperation.

Types of labour intensity depending on the composition of labour inputs included in it (fig. 6.2):
- **technological labour intensity**, including all the main workers labour inputs;
- **the labour intensity of the production service** including all the auxiliary workers labour inputs;
- **production labour intensity** = technological + service;
- **the labour intensity of production management** including the labour inputs of engineering and technical workers, employees and protection;
- **full labour intensity** = technological + service + management labour intensity.
  
  Each of these types can be regulatory, actual and planned.

### 6.3. Labour costs

**Salaries & wages** are remuneration for work depending on the qualifications of the employee, complexity, quantity, quality and conditions of the work performed, as well as compensation payments and incentives (fig. 6.3).

**Salaries & wages** are employee income element and form of economic realization of the right of ownership to the labour resource belonging to him.

---

A wage is monetary compensation (or remuneration, personnel expenses, labour) paid by an employer to an employee in exchange for work done. Payment may be calculated as a fixed amount for each task completed (a task wage or piece rate), or at an hourly or daily rate (wage labour), or based on an easily measured quantity of work done. The essential difference between a salary and a wage is that a salaried person is paid a fixed amount per pay period and a wage earner is paid by the hour. Someone who is paid a salary is paid a fixed amount in each pay period, with the total of these fixed payments over a full year summing to the amount of the salary. This person is considered to
be an exempt employee. There is no linkage between the amount paid and the number of hours worked. Someone receiving a salary is usually in a management or professional position.

Piece work (or piecework) is any type of employment in which a worker is paid a fixed piece rate for each unit produced or action performed regardless of time.

In per-piece pay structures, payment is based on the number of “pieces” of work that a worker completes. The worker is paid a monetary rate of a certain number of cents or dollars for each piece of work. What constitutes a “piece” worthy of the set rate is defined in advance. The hourly wage of a worker engaged in piecework will vary based on how skilled he is in completing the work and how time-consuming each piece of work is.

The concept of piecework has been around since the time of the Industrial Revolution, and it was used in garment factories and other manufacturing jobs to pay workers based on production. In today’s economy, it is still used this way, especially in developing nations.

With the advent of the Internet, piecework is now applied to online jobs with non-tangible work outputs. Working from home, people can now do piecework in such fields as data entry, translation, writing, editing, and call centers. In these lines of work, the “pieces” may be clearly defined and incorporated in the rate, such as per-minute talk time, per call, per completion, per word, per keystroke, per page, or on a project basis.

Online piecework can be even more varied. There are many micro jobs at places like Amazon’s Mechanical Turk where people do small tasks such as clicking links, and they’re paid on a per piece basis.

Workers who are paid on an hourly basis are required to be paid, at the least, minimum wage. Minimum wage rates vary from region to region and employers are required to pay either the region or federal minimum wage.

An hourly employee is paid for the number of hours they work per week up to 40 hours at a determined rate. Per federal law, hourly workers are entitled to overtime pay for hours worked over 40 hours per workweek.

Employees paid on an hourly basis are paid for actual hours worked. Unlike many salaried employees, hours per week may fluctuate based on a worker’s weekly schedule or rotated shifts, and therefore wages can vary for that employee from week to week.

Also in practice they use the remuneration of labour tariff system. The remuneration of labour tariff system includes:

- first class wage rate, base wage rate
- wage rates distribution scale of rates
- tariff coefficients.

The cost of labour is the salaries and wages paid to employees, plus related payroll taxes and benefits. The term may also relate to a specific time period or a job (if the employer is using a job costing system to track costs).

The cost of labour may be subdivided into the cost of labour related to the production of goods (known as the cost of direct labour) and the cost of labour related to all other activities (known as the cost of indirect labour). It may be necessary to include a large number of benefits in the calculation of the cost of labour.

The cost of labour is the sum of all wages paid to employees, as well as the cost of employee benefits and payroll taxes paid by an employer. The cost of labour is broken into direct and indirect (overhead) costs. Direct costs include wages for the employees that produce a product, including workers on an assembly line, while indirect costs are associated with support labour, such as employees who maintain factory equipment.
7. EXPENSES AND INCOMES OF AN ORGANISATION

7.1. Expenses of an Organisation

In production, research, retail, and accounting, a cost is a value of money that has been used up to produce something or deliver a service, and hence is not available for use anymore.

In common usage, an expense or expenditure is an outflow of money to another person or group to pay for an item or service, or for a category of costs.

For a tenant, rent is an expense. For students or parents, tuition is an expense. Buying food, clothing, furniture or an automobile is often referred to as an expense.

An expense is a cost that is "paid" or "remitted", usually in exchange for something of value.

In accounting, expense has a very specific meaning. It is an outflow of cash or other valuable assets from a person or company to another person or company. This outflow of cash is generally one side of a trade for products or services that have equal or better current or future value to the buyer than to the seller. Technically, an expense is an event in which an asset is used up or a liability is incurred. In terms of the accounting equation, expenses reduce owners' equity.

The International Accounting Standards Board defines expenses as:

...decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrences of liabilities that result in decreases in equity, other than those relating to distributions to equity participants

Cost classification involves the separation of a group of expenses into different categories. A classification system is used to bring to management's attention certain costs that are considered more crucial than others, or to engage in financial modeling. Here are several types of cost classifications:

For example, cost classification in economics might involve categories of fixed, variable, opportunity, production and sunk costs. On the other hand, accounting costs can be classified as either direct or indirect for a business.

Manufacturing costs are those costs that are directly involved in manufacturing of products. Examples of manufacturing costs include raw materials costs and charges related to workers. Manufacturing cost is divided into three broad categories:

- Direct materials cost. Direct labour cost. Manufacturing overhead cost.

Non-manufacturing costs are those costs that are not directly incurred in manufacturing a product. Examples of such costs are salary of sales personnel and advertising expenses. Generally non-manufacturing costs are further classified into two categories:

- Selling and distribution costs. Administrative costs.

Product Costs Vs. Period Costs

Product costs are assigned to the manufacture of products and recognized for financial reporting when sold. They include direct materials, direct labour, factory wages, factory depreciation, etc.

On the other hand period costs are all costs other than product costs. They include marketing costs and administrative costs, etc.

- **Product costs** = Manufacturing costs
- **Period costs** = Non-manufacturing costs

The product costs that can be specifically identified with each unit of a product are called direct product costs. Whereas those which cannot be traced to a specific unit are indirect product costs.

Thus direct material costs and direct labour costs are direct product costs whereas manufacturing overhead cost is indirect product costs.

**Fixed costs** are costs which remain constant within a certain level of output or sales. This certain limit where fixed costs remain constant regardless of the level of activity is called relevant range. For example, depreciation on fixed assets, etc.

**Variable costs** are costs, which change with a change in the level of activity. Examples include direct materials, direct labour, etc.
In Russian practice, costs are differentiated by economically homogeneous elements: material costs, labour costs, social contributions, depreciation allocations, other costs

Some words about costing items. There are only 15 costing items:

1. Main raw materials
2. Returnable waste (deducted)
3. Purchased products, semi-finished products and production services of third-party enterprises and organisations
4. Fuel and energy for technological purposes
5. Transportation and procurement costs
6. Basic wages of production workers
7. Additional wages of production workers
8. Social contributions
9. Expenses for maintenance and operation of equipment
10. Expenses for preparation and mastering of production
11. Losses from defected goods
12. Shop expenses
13. Factorywide expenses
14. Other operating expenses
15. Selling expenses (non-manufacturing costs)

**technological prime cost**

**shop prime cost**

**production prime cost**

**total prime cost**

**Prime cost** is firm's expenses for the direct materials and labour used in production. It refers to manufactured product's costs, which are calculated to ensure the best profit margin for a company.

The organisation calculates the cost of various methods that depend on the characteristics of the product (service), the production process and other factors.

**Unit costing** is also called the single output costing. It is used in costing of products that are expressed in identical units and suitable for products that are manufactured by continuous activity. Example: Cement manufacturing, Dairy, Mining etc.

**Job costing:** Under this method, costs are ascertained for each work order separately as each has its own specification and scope. Tailor made products also get covered by this type of costing. Example: Repair of buildings, Painting etc.

**Contract costing.** In this method costing is done for jobs that involve heavy expenditure and stretches over long period and across different sites. It is also called terminal costing. Example: Construction of roads and bridges, buildings etc.

**Batch costing.** Through this method the costing is done for units that are produced in batches that are uniform in nature and design. Example: Pharmaceuticals

**Process costing.** It is used for the products which go through different processes. Like in the process of manufacturing cloth, different processes are involved namely spinning, weaving and finished product. Each process gives an output that is a finished product in itself and can be sold. That is why process costing is used to ascertain the cost of each stage of production.

**Service or operating costing.** It is the method used for the costing of operating a service such as Public Bus, Railways, Nursing home. It is used to ascertain the cost of a particular service.

**Multiple costing.** When the output comprises different assembled parts like in televisions, cars or electronic gadgets, cost has to be ascertained for the component as well as the finished product. Such costing may involve different / multiple methods of costing.

7.2. **Pricing**
Pricing is the process whereby a business sets the price at which it will sell its products and services, and may be part of the business's marketing plan. In setting prices, a business will take into account the price at which it could acquire goods, manufacturing costs, market place, competition, market condition, brand, and quality of product.

Pricing is a fundamental aspect of financial modeling and is one of the four Ps of the marketing mix, the other three aspects being product, promotion, and place. Price is the only revenue generating element amongst the four Ps, the rest being cost centers. However, the other Ps of marketing will contribute to decreasing price elasticity and so enable price increases to drive greater revenue and profits.

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

Price is commonly confused with the notion of cost of production, but technically these are different concepts. Price is what a buyer pays to acquire products from a seller. Cost of production concerns the seller's investment (e.g., manufacturing expense) in the product being exchanged with a buyer.

There are several factors which need be taken into consideration before setting up prices, and these factors are current market supply and demand, competition levels as well as other political and economic influences. During the price planning process, your main focus should lie in finding the right price point where you can maximize your sales and profits. This usually depends on your individual marketing goals and objectives.

The objectives of pricing should consider:
- the financial goals of the company (i.e. profitability)
- the fit with marketplace realities (will customers buy at that price?)
- the extent to which the price supports a product's market positioning and be consistent with the other variables in the marketing mix
- the consistency of prices across categories and products (consistency indicates reliability and supports customer confidence and customer satisfaction).

Price is influenced by the type of distribution channel used, the type of promotions used, and the quality of the product. Where manufacturing is expensive, distribution is exclusive, and the product is supported by extensive advertising and promotional campaigns, then prices are likely to be higher. Price can act as a substitute for product quality, effective promotions, or an energetic selling effort by distributors in certain markets.

From the marketer's point of view, an efficient price is a price that is very close to the maximum that customers are prepared to pay. In economic terms, it is a price that shifts most of the consumer economic surplus to the producer.

A good pricing strategy would be the one which could balance between the price floor (the price below which the organisation ends up in losses) and the price ceiling (the price by which the organisation experiences a no-demand situation).

A firm must set a price for the first time when it develops a new product, when it introduces its regular product into a new distribution channel or geographical area, and when it enters bids on new contract work.

When setting the price of a new product, marketers must consider the competition’s prices, estimated consumer demand, costs, and expenses, as well as the firm’s pricing objectives and strategies.

**Step 1: Selecting the Pricing Objective**

The company first decides where it wants to position its market offering. The clearer a firm’s objectives, the easier it is to set price. Five major objectives are: Survival, Maximum current profit.

**Step 3: Estimating Costs**
For determination the price of product company should estimate the cost of product. Variable and Fixed Cost: Price must cover variable & fixed costs and as production increases costs may decrease. The firm gains experience, obtains raw materials at lower prices, etc., so costs should be estimated at different production levels.

Differential Cost in Differential Market: Firms must also analyze activity-based cost accounting (ABC) instead of standard cost accounting. ABC takes into account the costs of serving different retailers as the needs of differ from retailer to retailer. Target Costing: Also the firm may attempt Target Costing (TG). TG is when a firm estimates a new product’s desired functions & determines the price that it could be sold at. From this price the desired profit margin is calculated. Now the firm knows how much it can spend on production whether it be engineering, design, or sales but the costs now have a target range. The goal is to get the costs into the target range.

Step 4: Analyzing Competitors’ Costs, Prices, and Offers
The firm should benchmark its price against competitors, learn about the quality of competitors offering, & learn about competitor’s costs.

Step 5: Selecting a Pricing Method
Various pricing methods are available to give various alternatives for pricing:
- Markup Pricing: a 20% markup;
- Target Return Pricing: this is based on ROI;
- Perceived-Value Pricing: buyers perception of the product is key, not cost so what is the product worth to consumer sets the price;
- Value Pricing, Going Rate Pricing, Auction-Type Pricing.

Step 6: Selecting the Final Price
Pricing methods narrow the range from which the company must select its final price. In selecting that price, the company must consider additional factors:
- Impact of other marketing activities, Company pricing policies, Gain-and-risk-sharing pricing, Impact of price on other parties

7.3. INCOMES OF AN ORGANISATION

Incomes are an excess of revenue over expenses for an accounting period. Also it is called earnings or gross profit. In other words Incomes are an amount by which total assets increase in an accounting period.

Business income is any income realized as a result of business activity. Business income is a type of earned income and is classified as ordinary income for tax purposes. Business income can be offset by business expenses and business losses. It can be either positive or negative in any given year. Business income may include income received from the sale of products or services. For example, fees received by a person from the regular practice of a profession are business income. Rents received by a person in the real estate business are business income. A business must include income payments received in the form of property or services at the fair market value of the property or services.

One meaning of income refers to revenue or sales. Revenue is the money that a company receives from selling goods or services throughout the course of business. Throughout the year sales are recorded in the revenue accounts and posted to trial balance. The revenue is then reported on the first line of the income statement. This is often called gross income, total sales, or top line sales since it includes all the company income and sales before deducting expenses.

Net operating income (NOI) is a company's income after operating expenses are deducted, but before income taxes and interest are deducted

An income statement is one of the three major financial statements that reports a company's financial performance over a specific accounting period.

Profit is a financial benefit that is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity. Any profit that is
gained goes to the business's owners, who may or may not decide to spend it on the business. Profit is calculated as total revenue less total expenses (fig. 7.1).

The profit margin is a ratio of a company's profit divided by its revenue. It's always expressed as a percentage. It tells you how well a company uses its income. A high ratio means the company generates a lot of profit for every dollar of revenue. A low percentage means the firm's high costs reduce the profit for each dollar of income.

You can use the profit margin to compare the success of large companies versus small ones. You might think a large company is doing well because it has billions in revenue and billions in profit. But if its profit margin is low, it might not be doing as well as a much smaller company that has a better ratio.

The profit margin also allows you to compare your company against your competitors. You can see how you rank compared to your industry standard. You can also use it to see how you improve over time.

The profit margin formula simply takes the formula for profit and divides it by the revenue. The profit margin formula is $P / R$, where:

$$ P \text{ (profit)} = R - C, \quad R \text{ (revenue)} = Price \times Q, \quad C \text{ (costs)} = FC + VC \times Q. $$

There are three types of profit margins with their own calculations. They differ by what they include in costs. Each type tells managers different things about the business.

Gross profit margin compares revenue to variable costs. It tells you how much profit each product creates without fixed costs. These variable costs are the same as the cost of goods sold. Firms use it to compare product lines, such as auto models. It's not used in service companies, such as law firms, that have no COGS.

The gross profit margin formula is $P / R$, where:

$$ P = R - C, \quad R = Price \times Q, \quad C = VC \times Q. $$

Operating profit margin includes both variable and fixed costs. It is the same as the margin ratio. It doesn't include certain financial costs. It does include all operating costs and overhead. These include personnel costs and administration, along with variable costs, or COGS. It is misleading when a company's financial costs, like taxes, are high.

The operating profit margin formula is $P / R$, where:
\[ P = R - C, \quad R = Price \times Q, \quad C = FC + VC \times Q. \]

**Net profit margin** is net profit divided by net revenue. The net profit is revenue minus all expenses. These include both operating and financial expenses. Revenue is subtracted, including taxes, interest expenses, and depreciation. That's profit after subtracting the costs of interest, tax, and depreciation (fig. 7.2).

<table>
<thead>
<tr>
<th>Sales revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total costs (TC)</strong></td>
</tr>
<tr>
<td>Variables, direct costs (VC)</td>
</tr>
<tr>
<td>Gross profit</td>
</tr>
</tbody>
</table>

Fig. 7.2. The formation of net profit.

Profitability ratios are a class of financial metrics that are used to assess a business's ability to generate earnings relative to its associated expenses:

**Profitability** = **Profit / Costs**.
GLOSSARY

A

Apprentices master working skills.

Auxiliary production. The part of the production activity of an enterprise essential to the servicing of main production and the ensuring of the uninterrupted manufacture and output of its product.

Auxiliary workers maintain production processes and create conditions for the smooth operation of main workers.

Average headcount of staff is the average employees number for a certain period (month, quarter, from the beginning of the year, per year).

B

Batch production. Manufacturing of products (less in number say 200 to 800) with variety of similar parts with very little variation in size and shape.

C

Capacity utilization. The average weighted ratios between the actual output of firms to the maximum that could be produced per unit of time, with existing plant and equipment.

Commanding (or leading). Determining what must be done in a situation and getting people to do it.

Company competition, or competitiveness. The ability and performance of a firm to sell and supply goods and services in a given market, in relation to the ability and performance of other firms in the same market.

Control or controlling. Checking progress against plans. It helps to check the errors and to take the corrective action so that deviation from standards are minimized and stated goals of the organisation are achieved in a desired manner.

Coordinating. Creating a structure through which an organisation's goals can be accomplished. To make many different things work effectively as a whole.

E

Economic (external) wear is manifested in a decrease in the degree of utility of the object of fixed assets under the influence of economic, political and other external factors.

Economic indicators. The calculated values that characterize the operating conditions and the results of the organisation / company / enterprise. A means to measure change. They are the raw materials for much of monitoring and evaluation.

Employee is a person who is paid to work for an organisation or for another person.

Employees themselves are employees who prepare and execute documents, accounting and control, business management and record keeping (agents, cashiers, controllers, clerks, accountants, draftsmen, etc.).

Energy supply process. A process of providing all kinds of energy (electric, thermal, water, water, compressed air, etc.).

Extensive factors of the organisation's development. An increase in the number of resources used, an increase in the time spent using resources, eliminating the unproductive use of resources.

F

Factors of organisation development. A combination of elements and causes that affect the change in the efficiency of the functioning of the organisation/enterprise.

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.
Forecasting. The process of making predictions of the future based on past and present data and most commonly by analysis of trends. It helps to determine the direction of development of the organisation.

**Functional Organisational Structure.** This structure is very similar to the traditional line structure, but there are far more lines of communication. An organisation's reporting relationships are grouped based on specialty, or functional area. Generally, all the functional heads will report directly to the company president or CEO.

I

**Industrial production personnel** is personnel of the enterprise directly related to the process of production of products (services), i.e. engaged in the main production activities.

**Initial (historical, original) cost** includes the price of the acquired item of property, plant and equipment, as well as the costs of delivery, installation and commissioning.

**Intangible fixed assets** have non-physical existence.

**Intensive factors of the organisation's development.** The improvement of the process of using resources, improving the qualitative characteristics of resources.

J

**Job production.** It comprises of an operator or group of operators to work upon a single job and complete it before proceeding to the next similar or different job.

L

**Labour intensity of production** is the cost of working time per unit of production.

**Labour productivity** characterizes the efficiency of labour inputs in material production and is determined by the number of products or services produced per unit of time or labour inputs per unit of production.

**Line and Staff Organisational Structure.** A modification of line organisation and it is more complex than line organisation. According to this administrative organisation, specialized and supportive activities are attached to the line of command by appointing staff supervisors and staff specialists who are attached to the line authority. The power of command always remains with the line executives and staff supervisors guide, advice and council the line executives.

**Line Organisational Structure.** Business or industry structure with self-contained departments. Authority travels downwards from top and accountability upwards from bottom along the chain of command, and each department manager has control over his or her department’s affairs and employees.

M

**Main (production) workers** are directly engaged in the manufacture of products, the performance of works or the provision of services.

**Main production process.** A technological process, during which changes occur in the geometric shapes, dimensions and physical and chemical properties of products.

**Management function.** The direction or type of management activity characterized by a separate set of tasks and implemented by special methods.

**Management** involves identifying the mission, objective, procedures, rules and manipulation of the human capital of an enterprise to contribute to the success of the enterprise.

**Managers** are persons authorized to make management decisions and organize their implementation.

**Manufacturing.** Production of merchandise for use or sale using labour and machines, tools, chemical and biological processing, or formulation.

**Mass production.** It's production of large number of identical products (say more than 50000) that needs line layout type of production which is highly rigid type and involves automation and huge amount of investment in special-purpose machines to increase the production.
Matrix Structure. A company structure in which the reporting relationships are set up as a Qgrid, or matrix, rather than in the traditional hierarchy. In other words, employees have dual reporting relationships - generally to both a functional manager and a product manager.

Moral (functional) wear shows the non-compliance of the object with modern standards in terms of its functional utility.

O
Organisational structure. Fn ordered set of permanently interrelated elements that ensure the functioning and the organisation/enterprise development as a whole.

Organising. A systematic process of structuring, integrating, co-ordinating task goals, and activities to resources in order to attain objectives.

P
Personnel movement or personnel turnover of the organisation (labour force) is change in the number of employees in connection with the dismissal and admission to work.

Personnel of an organisation is a collection of individuals who perform various functions in the production of material goods, the provision of services, and the satisfaction of intellectual, cultural, and other needs.

Physical wear characterizes the loss of the initial technical and operational qualities of the object (or part thereof) as a result of the impact of natural-climatic and operational factors.

Piece work (or piecework) is any type of employment in which a worker is paid a fixed piece rate for each unit produced or action performed regardless of time.

Planning. Deciding what needs to happen in the future and generating plans for action (deciding in advance).

Production capacity. The maximum amount of output that can be obtained through a certain machine or production line.

Production structure of an industrial enterprise. A complex of subdivisions and their relationship and ties in the process of manufacturing output.

Production. A process of combining various material inputs and immaterial inputs (plans, know-how) in order to make something for consumption (the value output).

Profession means a special kind of work that requires certain theoretical knowledge and practical skills. Project-Based Structure. There is a general manager or CEO; also, there may be functional departments such as operations and finance, but projects are the main units of conducting activities. Project teams conduct almost all operations of the company. Functional managers make sure that projects have access to employees with the right functional expertise. Project managers have a lot of autonomy and are responsible for delivering results. They select team members, allocate tasks and oversee performance.

Q
Qualification characterizes the degree of mastery by workers of a particular profession or specialty. Qualification is reflected in qualification (tariff) rating and categories that they are assigned depending on the theoretical and practical training.

Quality. The group of features and characteristics of a saleable good which determine its desirability and which can be controlled by a manufacturer to meet certain basic requirements.

R
Real number of employees characterizes the number of employees on the list of employees who came to work on a given day, including those on business trips.

Residual value is defined as the difference between the replacement or initial value of property, plant and equipment and the amount of depreciation accrued thereon.

S
Salaries & wages are remuneration for work depending on the qualifications of the employee, complexity, quantity, quality and conditions of the work performed, as well as compensation payments and incentives.

Salary is a set amount of compensation paid, regardless of the amount of work performed. It is often calculated on an annual basis and paid out on a monthly basis.

Servicing process. The process associated with servicing the main and auxiliary production. These include warehousing, transportation and inspection work.

Specialists are employees engaged in engineering, economic, accounting, legal and other similar activities.

Specialty means the type of activity within the profession, which has specific features and requires additional special knowledge and skills from employees.

Staff listing is an indicator of the employees number on a certain date.

Tangible fixed assets have physical existence.

Useful time (life) is a period of the asset’s exploitation during which it is in good technical condition, is able to produce reliably and generate economic benefits.

Wage is a monetary compensation (or remuneration, personnel expenses, labour) paid by an employer to an employee in exchange for work done.

Workforce is the total number of people in a country or region who are physically able to do a job and are available for work. The workforce is also the total number of people who are employed by a particular company.
5. https://bizfluent.com/
8. https://blogpuneet.files.wordpress.com/
11. https://debitoor.com/
15. https://www.employeeconnect.com/
29. https://www.thebalancecareers.com/
30. https://www.tutor2u.net/
Данилина Мария Геннадьевна
Danilina Maria Gennadievna

ECONOMICS OF ORGANISATION

Учебное пособие

dля студентов бакалавриата и магистратуры по направлениям направлениям
«Экономика», «Менеджмент», «Торговое дело»