

DIGITAL SOLUTIONS FOR HOTEL BUSINESS ACCOUNTING

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Abstract. *The study examines the main aspects of management accounting in hotel business enterprises. The use of information systems and information support of the hotel's activities is analyzed. The chains of information flows on the example of Hotel "A", the features of management decision-making, and the use of this information are studied. The main disadvantages of the ORAK Hotel R5 system used in Hotel "A" and their impact on the management process have been identified. The purpose of the research is to reveal the main aspects of organizing the effectiveness of the management accounting system as a source of information support for making management decisions, to highlight the problems that arise in the process of forming and functioning of this system, and the advantages it provides to the hotel business enterprise. The object of this research is the process of development, implementation, and improvement of management accounting at a hotel enterprise. The subject of the research is the theoretical and methodological principles and practical aspects of the organization of effective management accounting in the management system at hospitality industry enterprises. The theoretical and methodological basis of the research are the fundamental provisions of economic theory and scientific works of domestic and foreign scientists who were engaged in management accounting at enterprises in the hotel business. Some specific principles that are inherent in management accounting and distinguish it from financial accounting are studied. The place of the information center in the hotel's information support system has been determined, and the reasons for changes in the hotel's information support structure have been established. The consequences of informatization and computerization of business processes, as a necessary aspect of the effective operation of hotel enterprises, are presented, and ways of improving management accounting in the hotel are proposed.*

Keywords: *management accounting, hotel business, management, information support, management accounting system, management decision-making, information support system*

Information requirements in the management accounting system.

Management accounting has indeed become a very widespread and important tool in enterprise management. It helps managers make effective decisions based on the analysis of expenses, revenues, results, and other indicators. Management accounting also allows planning, budgeting, controlling, and organization's resources optimization. Management accounting has long ceased to be something new for both scientists and practitioners. Its main tools are used daily in their activities by heads of enterprises and individual structural units' managers.

The need for management accounting at domestic enterprises is determined by the following facts:

- 1) the presence of different forms of ownership, which leads to the emergence of different groups and levels of management information users;
- 2) intensifying competition in the domestic and foreign sales markets of domestic products, which requires timely information about their market conditions;
- 3) the integration of the Ukrainian economy into the world economy, which inevitably leads to a reorientation of both practice and theory of accounting knowledge.

Management accounting is an important tool for effective management of enterprises. It allows for receiving, analyzing, and using information about costs, revenues, results, and other indicators of the enterprise's activity. Management accounting also contributes to planning, budgeting, control, and optimization of the organization's resources.

However, management accounting at domestic enterprises has some problems and peculiarities. In particular, the following can be highlighted:

- Lack of clear rules, methodology, and components of management accounting. Unlike accounting, regulated by legislation, management accounting must be developed by the enterprise itself, taking into account its specifics, goals, and needs. This requires high qualifications and creativity of specialists conducting management accounting [1].

- The problem of obtaining and processing data on strategically important processes of the external and internal environment. Management accounting requires not only factual information about the state of passive and active balance sheet items but also predictive information about the market situation, competitive analysis, and risks and opportunities of the enterprise. Such information should be systematized in special accounting registers that often do not exist in domestic enterprises.

- The problem of choosing and applying costing methods products (works, services). Management account should provide managers with information about the profitability of certain species products, centers responsibilities, market segments, etc. To do this, it is necessary to apply modern methods of cost calculation, which allow for to accurate distribution of indirect costs between accounting objects. However,

many domestic enterprises use outdated methods that do not take into account the complexity and diversity of production processes [2: 3].

The management accounting system is based on an information system that uses input information and relevant processes to obtain results that meet precisely defined management goals.

Information base is used by all management functions, including planning, control, and evaluation functions to make management decisions.

Special attention should be paid to the fact that the management accounting system goes beyond accounting and includes elements of planning, control, analysis, and evaluation. It is this fact that caused some disagreements in determining its essence and meaning, principles, and functions among leading domestic and foreign scientists.

The management accounting system is a set of methods, procedures, rules, and tools that are used to collect, process, analyze, and present information about the company's activities, necessary for making effective management decisions. The management accounting system must be adapted to the specifics, goals, and needs of each enterprise. The management accounting system can have a different structure and components but it is generally accepted to distinguish the following main elements:

- The chart of accounts of management accounting is a systematized list of accounts that are used to record information about the sources and use of the company's resources, costs, revenues, results, and other indicators. The chart of accounts of management accounting can be built according to different principles, for example, according to functional characteristics, according to cost centers, or according to profit centers [4; 5].
- Budgeting is the process of planning and controlling the financial flows of an enterprise based on forecasting its activities for a certain period. Budgeting allows setting goals and standards for individual indicators, comparing the actual dynamics with the planned, identifying deviations and their causes, and taking corrective measures. Budgeting can be static or flexible, strategic or operational [6; 7].
- Costing is the process of determining the cost of products (works, services) produced or provided by the enterprise. Calculation helps to substantiate pricing, assess the profitability of certain types of products or market segments, control the use of resource factors. The calculation can be carried out by different methods, for example, by the method of full costs, direct costs, and standard costing [8].
- Analysis is the process of evaluating and interpreting information about the company's activities provided by management accounting. The analysis makes it possible to identify the strengths and weaknesses of the enterprise, its competitiveness, and development prospects, to determine the factors affecting the results of the activity, and to develop recommendations for improving management efficiency. The analysis

can be carried out in different directions, for example, by cost analysis, income analysis, profitability analysis, liquidity analysis, etc. [9].

As can be seen, the management accounting system contains many components that help the managers of the enterprise to make reasonable and timely decisions, methods, and systems. Management accounting, like any accounting that is part of a complex accounting system of a business entity, is intended to provide certain information. Management accounting information created and prepared for use by management within the enterprise is subject to other requirements that differ from information intended for external users. The requirements that such information must satisfy are illustrated in Fig. 1.

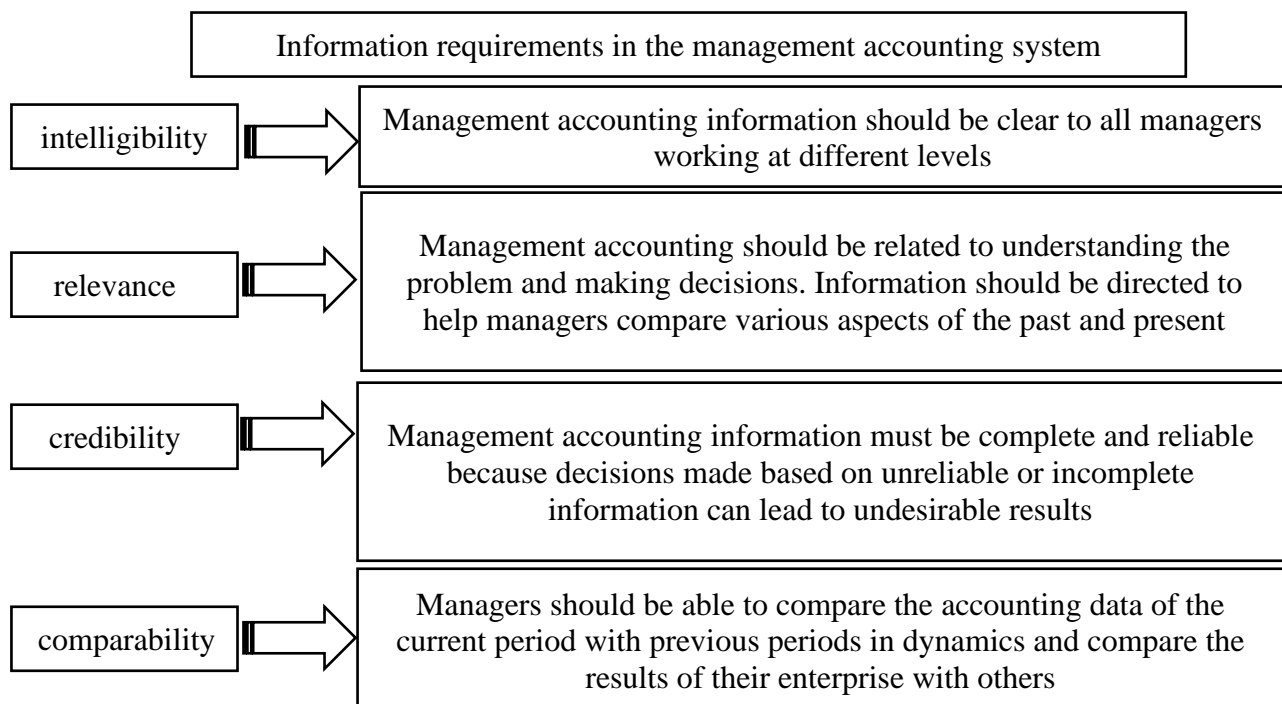


Figure 1. Information requirements in the management accounting system

Sources: developed by the authors

The list of such requirements affects the definition of the concept of “management accounting”. Some definitions of management accounting are given in Table 1.

The Law of Ukraine “On Accounting and Financial Reporting in Ukraine” provides the following definition of management accounting: “Internal economic (management) accounting – a system of processing and preparing information about the enterprise's activities for internal users in the process of enterprise management” [22].

Table 1. Definitions of management accounting given in the works of domestic and foreign scientists

No.	Definition	Author, source of information
1	Management accounting is understood as the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and transmitting information that is used by the management unit for planning, evaluation, and control within the enterprise.	Butynets F.F. [1, p. 229]
2.	Management accounting is the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information used by management to plan, evaluate, and control within an organization and to ensure appropriate, accountable use of resources.	Holov S.F., Yefimenko V.I. [2, p. 246]
3	Management accounting is an urgent service for businesses of any scale and direction: enterprises of all forms of ownership, organizations, and private entrepreneurs. Management accounting is aimed, in particular, at providing the necessary information about the functioning of the business, first of all, to the business owner and managers.	AGTL site materials [12]
4	Management accounting is a system of accounting for financial operations –that responds to specific requests of owners, financial analysts, and heads of a group of companies, namely: obtaining analytics on sales, expenses, planning, budgeting, periods of capital turnover, other analytical information; transformation of reporting according to other rules and standards (accounting policy of the owner company, IFRS, reporting requirements of other jurisdictions, etc.); data consolidation of several companies; consolidated reporting of several companies	AGTL site materials [13]
5	An economic system related to the preparation and provision of an information management system during implementation investment, operational and financial activities, which allows to develop and comprehensively adopt the most effective operational, tactical, and strategic decisions at various levels of enterprise management is called management accounting.	Napadovska L.V. [14, p. 95]
6	Management accounting is a subsystem of control, built on the principles of accounting, but taking into account the specifics of a particular enterprise, the main task of which is to provide the management apparatus of the enterprise with relevant, timely, and complete information that serves to make management decisions, is used during planning, control, and analysis of the financial and economic processes of the enterprise.	Pankov V.A., Yeletskih S.Ya., Mykhailychenko N.M. [15, p. 112]
7	Management accounting, like any accounting that is part of a complex accounting system of a business entity; it is designed to provide certain information.	Pisarenko. T.M., Bukalo N.A. [16, p. 137]
8	Management accounting is an independent subsystem of accounting with its subject, method, and tasks, which is closely related to the management system and is aimed at reducing production costs and increasing company profits.	Pushkar M.S. [17, p. 124]
9	Internal economic accounting (the so-called managerial accounting, production controlling) is not independent accounting. This is a continuation, or more precisely, a further deepening, detailing of the data of accounting and financial accounting in terms of expenses and income of activities, when all the effectiveness of the acquisition of resources, their processing, technological and organizational solutions, motivation, etc. is revealed.	V. V. Sopko [18, c. 483]
10	Management accounting is a subsystem that, within the boundaries of one organization, provides its management apparatus with information used for planning, proper management, and control of the organization's activities.	Turylo A.M., Svyatenko S.V. [19, c. 75]
11	Management accounting is a process of data collection, accumulation and analysis, interpretation, and presentation of financial and production information, which will be the basis for management to make operational and strategic decisions.	Administrative and financial accounting : what's the difference [20]
12	Management accounting at the current stage of society development is no longer an end in itself, but a means of achieving successful positions in business, which is accompanied by the process of developing strategic plans for making long-term decisions	Shevtsiv, T. I. Spodaryk [3]
13	<i>Management accounting</i> is the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information that is used by management to plan, evaluate, and control within an organization and to ensure efficient use of resources.	Shevtsiv L.Yu. [21, p.4]

Sources: developed by the authors

Common to these statements is that the main task of management accounting is to provide unbiased information necessary for making management decisions by the relevant management units of the enterprise. The content of management accounting is revealed in Fig. 2.

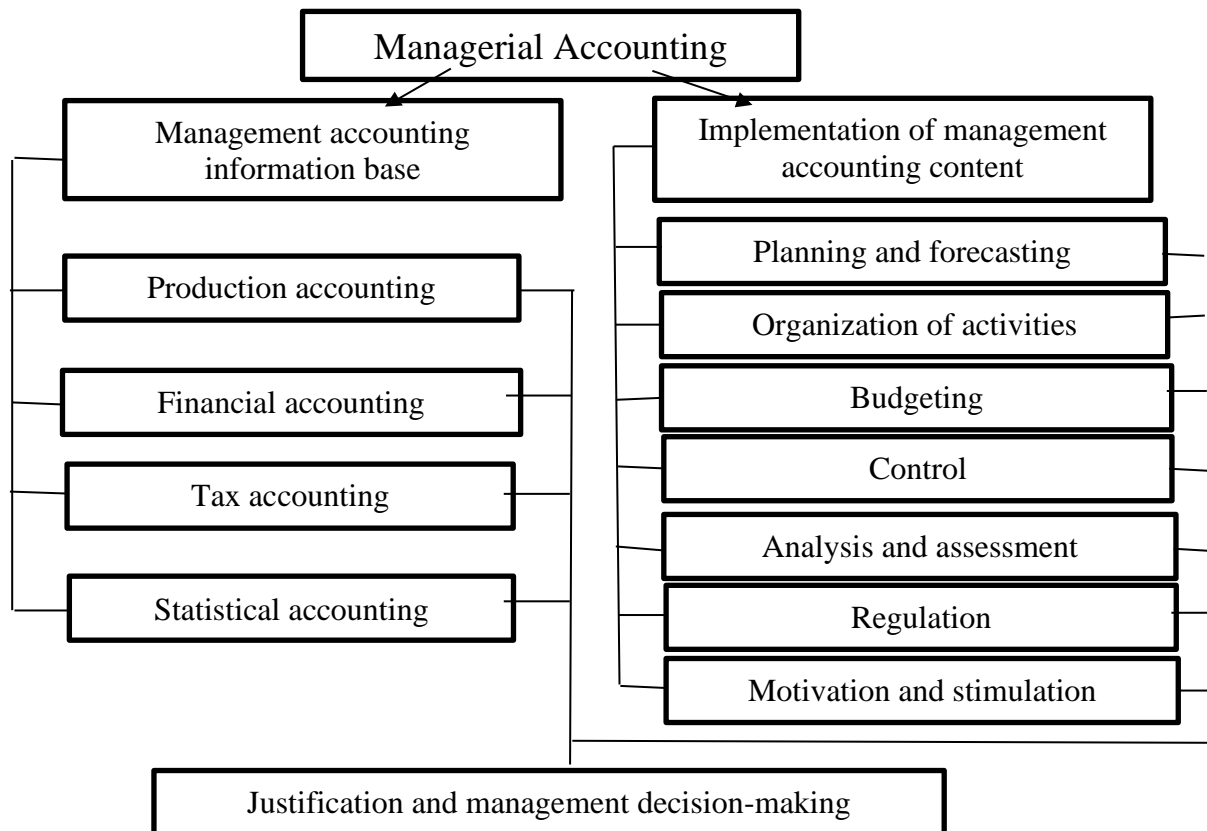


Figure 2. Implementation scheme of management accounting content

Sources: developed by the authors

Sometimes the concepts of management accounting and controlling are equated. There are lots of common features between them however there are also differences. *Controlling* is a functionally embodied direction of economic work at the enterprise, associated with the implementation of the financial and economic commenting function in management during the adoption of operational and strategic management decisions.

Controlling may consist of the following sections: planning; analysis of plans, results, and deviations; control; monitoring; information flows; management accounting; goal management; development of a recommendation for making management decisions, etc. From the above, we conclude that management accounting is a component of controlling.

Considering the fact that management accounting is an integrated system of various economic disciplines, the method of management accounting includes:

1) elements of the accounting method (in particular, accounts and double-entry; estimation and calculation; inventory and documentation);

- 2) elements of statistics (index method);
- 3) methods of economic analysis (factor analysis);
- 4) mathematical methods (linear programming, method of least squares).

The management accounting method is a set of techniques and methods by which management accounting objects are displayed in the enterprise information system. The main elements of the management accounting method are:

- documentation – is the recording of the facts of economic activity in written sources;
- inventory – is a check of the availability and assessment of property, liabilities, and capital of the enterprise;
- grouping and generalization – is the systematization and aggregation of data according to certain characteristics;
- normalization – is the establishment of standard indicators for comparison with actual results;
- budgeting – is the preparation of planned calculations of income and expenses, as well as cash flows;
- analysis and control – is an assessment of the efficiency and rationality of economic activity, the identification of the causes of deviations, and the development of measures to eliminate them.

The subject of management accounting is a set of objects in the process of managing the economic activity of the enterprise, namely:

- 1) production resources – fixed assets, intangible assets, material resources, and labor resources;
- 2) economic processes and their results – supply and procurement activities, production activities, financial and sales activities, investment, and other types of activities of the business entity.

Considering that management accounting in the narrow sense is a component of the entire accounting system and is related to financial accounting, it must comply with uniform accounting principles, in particular: continuity of enterprise activity; a single monetary unit; completeness and analyticity of information; periodicity, etc.

Consequently, management accounting has some specific principles that distinguish it from financial accounting. Here are some of them [23; 24; 25] :

- The principle of relevance means that the information provided by management accounting should be useful for decision-making by the company's management.
- The principle of flexibility means that management accounting must adapt to changes in the external and internal environment of the enterprise.
- The principle of individualization means that management accounting must take into account the peculiarities of each enterprise and its structural divisions.

- The principle of communication means that management accounting should ensure the effective exchange of information between different levels of management and stakeholders.

- The principle of methodological independence means that each firm (enterprise) establishes its rules of organization and methodology management accounting.

- The principle of orientation towards the achievement of strategic goals of the enterprise means that when making decisions at any level and choosing the most optimal of them, the interests of the enterprise as a whole should be prioritized.

- The principle of evaluating the results of the activity of the structural subdivisions of the enterprise, which involves determining the tendency and prospects of each subdivision in the formation of the enterprise's profit from production to the sale of products.

- The principle of effectiveness means that when carrying out any type of activity, one should constantly compare the costs incurred as a result of the activity with the result obtained; at the same time, the result must exceed the costs.

- The principle of responsibility means that a specific person controlling them is responsible for the amount of costs and results.

- The multivariate principle means that when preparing information, all options should be taken into account, but the most optimal one should be chosen for making management decisions.

- The principle of complexity, which provides for one-time recording of data in primary documents or production calculations and repeated use in all types of management activities.

- The principle of the budgetary method of management, which is a tool of planning, control, and regulation and provides for budgeting of production, implementation, and financing of divisions, as well as the enterprise in general.

- The principle of dependence, which consists in the fact that only those costs that will depend on the future choice are included in the various alternative solutions.

- The principle of causality, which consists in the fact that only those costs that arose as a result of the production of this product should be attributed to the cost price of the product.

- The principle of interconnection is based on the fact that management accounting includes not only cost accounting but also planning, control, analysis, and regulation; all these functions are implemented simultaneously, in a complex and interconnected manner.

- The principle “different costs for different purposes” means that depending on the goal, i.e. for making specific management decisions, different information is used to form the costs, which is why the cost will be different.

The main goals of management accounting are to provide information for calculating the cost of products (works, services), planning, control, evaluation, and continuous improvement of the enterprise's activities, and making management decisions. That is, management accounting information should enable managers to determine the future development prospects of the enterprise, solve problems, and evaluate the success of activities. Management accounting is also used to determine the strategy and planning of the organization's future activities, control its current activities, optimize the use of resources, evaluate the effectiveness of activities, and reduce the level of subjectivity in the decision-making process.

Means of communication at the current stage of society development play a significant role in ensuring effective management in the field of hotel business. Information delay can cause negative financial consequences and lead to the loss of the hotel's image on the market. In the hotel business, various means of communication are used to interact with guests and promote their services. Some of them are:

- Online booking and web platforms. This allows guests to book a room via the Internet, which ensures convenience and accessibility [26; 27].
- SEO and contextual advertising. This contributes to increasing the visibility of the hotel website in search engines and attracting the target audience [28; 29].
- Social networks and e-mail. It helps to publish up-to-date information, special offers, and photos, as well as send personalized emails with booking information [28-30].
- Messengers and online chats. This allows guests to quickly ask questions and receive answers in real time [29-30].

Some key aspects to consider are:

- Technological preparation for production. This is the process of developing and optimizing technological processes, equipment, tools, devices, quality control, and other elements of the production system. Technological preparation for production is aimed at ensuring efficient use of resources, cost reduction, improvement of productivity, and quality of products [31].
- Information systems and technologies. This is a set of means, methods, and procedures for collecting, processing, saving, transferring, and using information to support management decisions, coordinate actions, and control the state of the production system [31]. Information systems and technologies make it possible to improve communication, integration, automation, and innovation of the production process [32].
- Design and optimization of the production system. This is the process of analysis, modeling, evaluation, and selection of the best options for the structure, parameters, modes of operation, and placement of elements of the production system [32]. The design and optimization of the production system aims to achieve the desired

goals in terms of capacity, productivity, quality, reliability, safety, environmental friendliness, and economy of the production process [33]. With the correct organization of the production process at the enterprise, the use of information systems and technology for the transmission of information ultimately significantly increases the economic efficiency of the hotel enterprises' operation.

If earlier the hotel industry was focused mainly on tourists, who "dictated" working conditions for hotels, today the bet is often placed on representatives of businesses – both large and small. Their requirements for comfortable accommodation are an order of magnitude higher than those of tourists because a hotel for a business person is not only a place of residence but also a place of work. Modern hotels are increasingly offering guests the organization of business congresses, press conference rooms, and assistance in organizing negotiations with clients and partners. For these purposes, not only conference halls are created but also lobby bars and lobbies where coffee breaks can be organized. At the same time, "business" hotels also choose a special location that is convenient from the point of view of transport junctions [34].

The research utilized materials from Hotel "A" which uses a whole range of information equipment. The hotel has 14 personal computers connected to one network. Moreover, the following is used for information support of the activities of Hotel "A" (Table 2).

Table 2. Information equipment of Hotel "A"

Name	List of means
Equipment	<ul style="list-style-type: none"> - 206 Fanvil H3 telephones; - 8 Canon PIXMA i6520 printers; - 2 Panasonic faxes kx-ft 982; - mini PBX; - the hotel has 6 telephone lines; - a video surveillance system operates on the territory and in the middle of the hotel to ensure the safety of hotel guests; - a Siemens fire alarm system was installed; - the hotel is connected to satellite television channels; - the hotel is connected to the Internet, and free Wi-Fi is available on the territory of the hotel
Software products	<ul style="list-style-type: none"> - Windows 7 and its applications; - Microsoft Office 2003 (Word, Excel, Access, Outlook); - Avast Antivirus; - Adobe graphics editor Photoshop; - electronic translators; - Outlook Express mail program; - Google browser chrome;

Sources: developed by the authors

This level of information technology use is acceptable for a hotel of this class. The maintenance of the equipment and software is handled by the system administrator, who is in the hotel's staff. Telephone communication and Internet access are provided by the Kyivstar company.

The hotel's automated management system (AMS), complexes of security, life support, and computerization systems are integrated into the hotel's single information field. Consider the chain of flows of basic information in hotel "A". (Fig. 3).

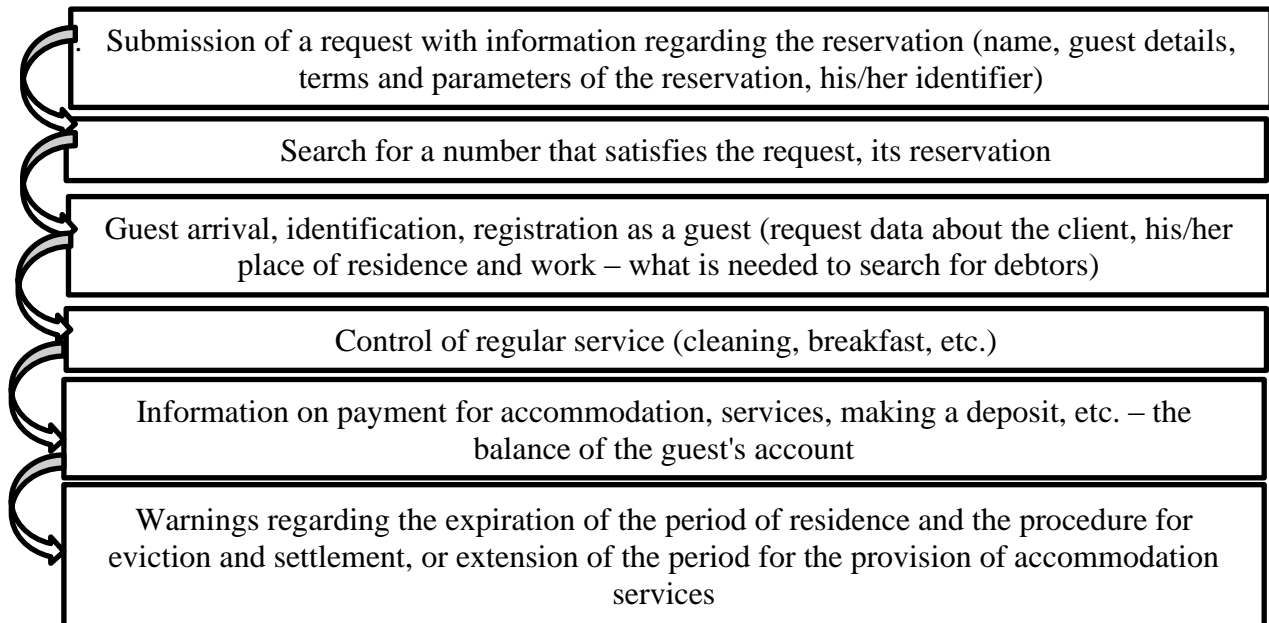


Figure 3. Chain of information flows in Hotel "A"

Sources: developed by the authors

This is not a complete list, but it gives an idea of the main functions of the system. The ORAK Hotel R5 system is used for the automation of management in the hotel. The main capabilities of this system include:

- accounting of hotel room stock. Visual display of all information about the current state of the hotel's room stock in the main working window of the program: the status of each room, the number of occupied rooms, the number of reserved rooms, rooms that will be vacated, and free rooms, the number of guests currently staying in the hotel, revenue received per shift. Architectural plan of the hotel rooms and construction of the hotel's room structure. Besides an unlimited number of room types, categories, and statuses are available;

- reservation. Creating a reservation due to the universal booking tool for individual and collective orders allows one to book different rooms with different accommodation conditions (check-in and check-out dates, tariff, meal plan) within each reservation. All information about the guest's stay is stored in the database. At

any time, you can get information about the guest's previous visit to the hotel. The card of a guest who has previously visited the hotel is filled in automatically upon new check-in. All information about the date of arrival and departure, category of rooms, additional services, tariff, meals, and invoices is stored. All this is shown on the display. Reservations for private individuals, corporate clients, and travel operators are made through a single form but with considerations features of each client;

- flexible pricing policy. In addition to the general price list, it is possible to set special prices for different types of customers (travel agencies, regular customers, corporate customers). Setting special prices can be based on a discount or specially developed price lists. It is possible to set a discount individually for each client or each type of service. Guests staying under special conditions can be separated into special categories, which makes it possible to evaluate the effectiveness of the pricing policy;

- housekeeping – assigning responsible maids to rooms. Viewing and printing the schedule for changing linen and towels, cleaning rooms after the departure of guests, and scheduled cleaning of vacant hotel rooms. The module for planning services by time allows you to perform hourly accounting for billable services. Minibar filling is also accounting;

- security service – the interface for night security is contrasting. Control of guest and staff access to hotel rooms and office premises. Controlling the debts of departing guests.

However, the ORAK Hotel R5 system has several disadvantages (Fig. 4).

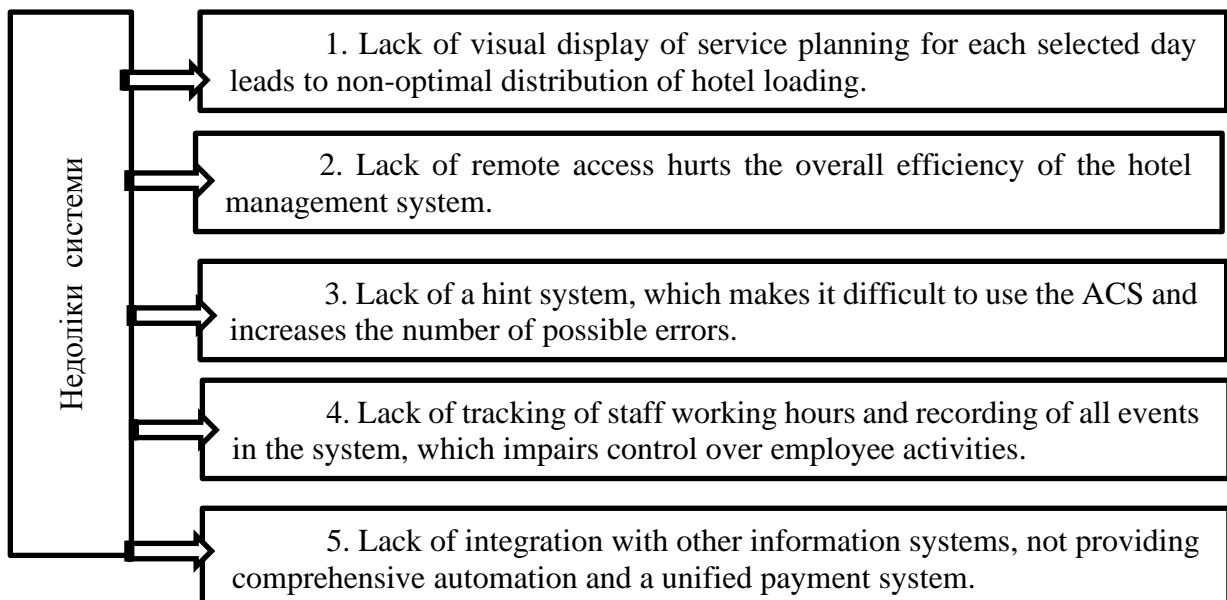


Figure 4. Disadvantages of the ORAK Hotel R5 system used in Hotel “A”
Disadvantages of the system

Sources: developed by the authors

Thus, it is necessary to improve the automated management system in Hotel A.

Hotel “A” has its website, which contains all information about the hotel's room stock, additional services, and special offers, there is a guest book where hotel clients can leave reviews about their stay at the hotel, and it is also possible to book rooms at the hotel.

Requests for accommodation of guests in Hotel “A” are received from travel companies, private clients, and corporate clients through the use of Internet resources (booking through the website, e-mail), phone calls, and faxes. Managers of Hotel “A” surveyed hotel customers to identify the specifics of their use of Internet technology when searching for and booking hotel rooms. 50 people who used the services of Hotel “A” were interviewed. The distribution of survey participants regarding hotel reservation methods is shown in Fig. 5.

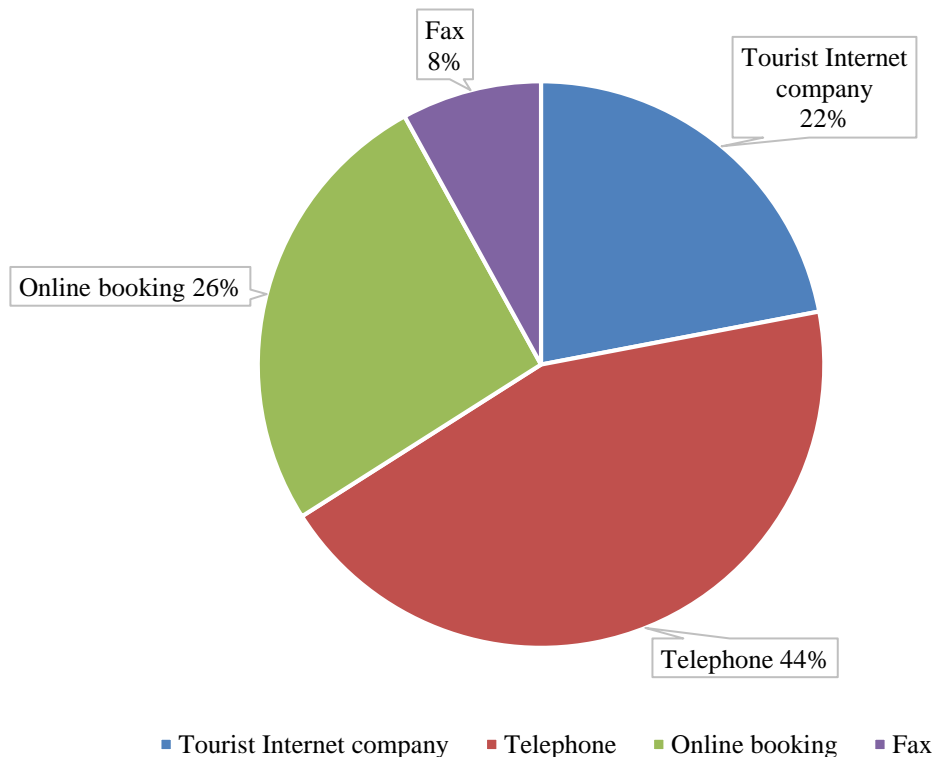


Figure 5. Distribution of responses from survey participants regarding the methods of booking rooms in hotels, %

Sources: developed by the authors

Therefore, 44% of respondents made reservations by phone, 26% through online booking, 22% through travel agencies, and 8% via fax.

Fig. 6. presents the distribution of survey participants who made reservations via the Internet by place of reservation.

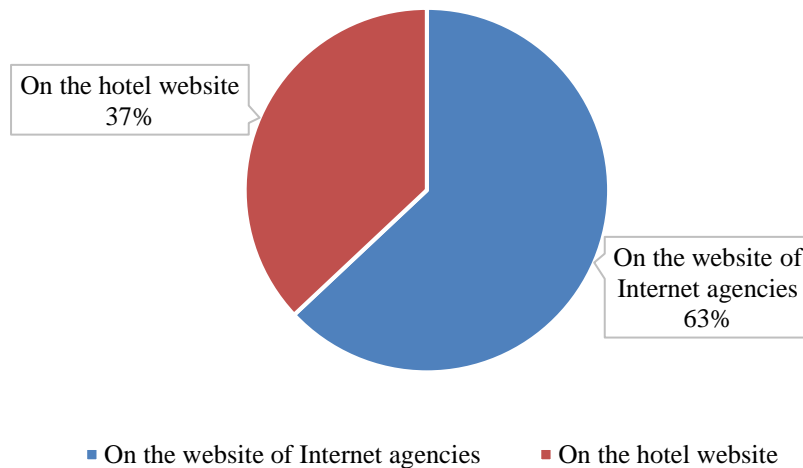


Figure 6. Distribution of survey participants who made reservations via the Internet by place of reservation, %

Sources: developed by the authors

As can be seen from Fig. 6, only 37% booked rooms on the hotel's website, while the other 63% booked hotel rooms on the websites of Internet agencies. This suggests that the website of Hotel “A” is not actively promoted on the Internet, and most of the bookings are made by Internet agencies that offer online booking services.

Among those who did not use Internet booking on the hotel website, the reasons for such behavior were determined (Fig. 7).

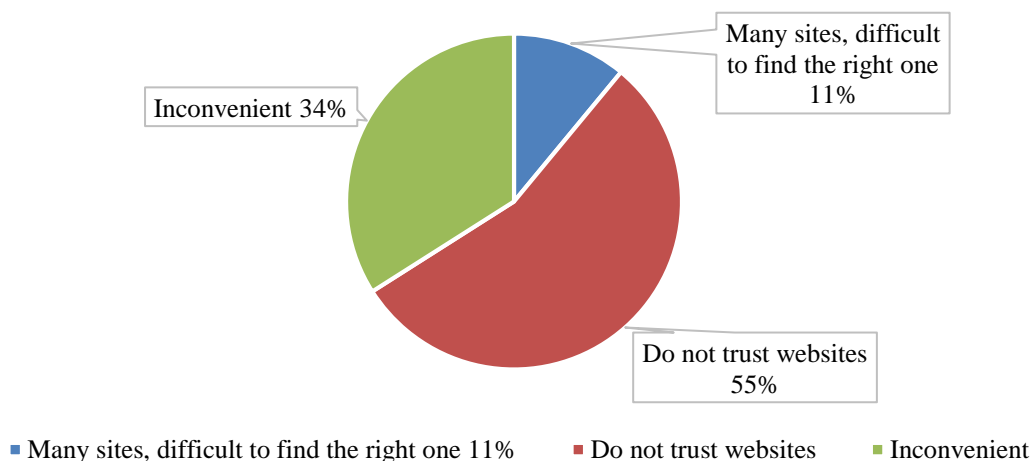


Figure 7. Distribution of survey participants' answers about the reasons for refusing online bookings on the hotel website, %

Sources: developed by the authors

Consequently, 55% do not trust the sites, 34% consider it inconvenient, and 11% answered that it is difficult for them to navigate since there are quite a lot of sites.

Based on the conducted survey, it was concluded that it is necessary to increase the trust of hotel customers in booking rooms on the website of hotel “A”, as well as so that the hotel does not lose profits due to the participation in the sales process of intermediaries (Internet booking agencies).

Note that with indirect sales, Hotel “A” loses profit, because if the reservation is made on the hotel's website, the hotel receives the full price for the room in the hotel, taking into account minor costs for maintaining the website. However, if the client applies to book a room on the intermediary’s website, then the hotel receives less money since the intermediary’s percentage usually ranges from 10 to 15% of the room price. Consequently, with this type of online booking, Hotel “A” loses up to 15% of the price, since indirect sales channels were chosen. Thus, we consider it necessary to increase the efficiency of booking on the website of Hotel “A” through active promotion of the site on the Internet.

The specifics of the operation of hotel industry enterprises, as well as all intangible enterprises, require a special form of managerial interaction through the formation of a system of information and communication support. The hotel business is a highly saturated information sphere. The peculiarities of business processes in hotel enterprises provide for the structuring of operations both by technical and technological process and by the time factor, and this requires the availability of systematic and dynamic information support.

Managerial interaction is characterized by focus and intensity, which reflects the sphere of the information and communication field of hotel business enterprises. The basic criterion for the formation of a rational-parity information field is information support. In hotel business enterprises, it is determined by the number of information flows and their content saturation, which depends on information processes in the production and provision of basic and additional services (Table 3).

Table 3. Information support for the production and sale of hotel services

Features of hotel services	Impact on Information Process Management
1. Customer service is provided on the premises of the enterprise	Organization of the production process (basic and additional services)
2. Uneven and seasonal consumption	The occupancy level of the room stock, the use of material and labor resources are uneven
3. Round-the-clock operation of the enterprise	Shift work of hotel staff throughout the day
4. Increased requirements for the qualifications of service personnel	Application of a flexible remuneration system (availability of support staff)

Features of hotel services	Impact on Information Process Management
5. Form of consumption of services	The consumer is part of the distribution system, which in some cases takes the form of self-service (additional services).
6. The service process is limited in time	Under-occupancy of the hotel cannot be compensated in the future. Estimation of overhead costs.
7. High level of contact with the client	Difficulty in organizing control and rationalization of the production process. The duration of service, the structure of the service, and its actual and expected quality have a significant dependence on the client.
8. Consumption (one customer's use of a specific location) is a lengthy process	The total cost of the services provided is determined upon departure of the client with adjustments to the preliminary calculation data. Difficulties in recognizing and measuring income.
9. Large share of preliminary material costs at the stage of establishing a hotel	The need to attract financial investment in the initial stages of establishing a hotel
10. Hotel room occupancy is less than 100%	Optimizing the use of room stock

Sources: developed by the authors

Information flows are formed from a set of modules and a core, which ensures their integration and separation of powers of employees of the hotel enterprise. The activities of accommodation establishments are accompanied by the preparation of various types of documents (Table 4), that form various information flows.

Information support for enterprise management involves the organization of targeted arrays of information and information flows, which includes the collection, storage, processing, and transmission of information to analyze the obtained results for the preparation, justification, and adoption of management decisions [27; 32; 35]. The basis of information support is the system of interrelations between the divisions of a hotel enterprise and the communications that arise between them, as well as the relationship with the external environment. The formation of effective information support for management interaction is impossible without the presence of information technologies, and therefore, certain costs associated with their use.

Considering that the information and communication field is formed not only through interaction in the internal environment, but it can be argued that this process is accompanied by interaction with all participants in the business process, and for hotel industry enterprises this is: travel agents, tour operators, airline representatives, etc. Interaction with these participants in business processes is carried out through the use of automated hotel management systems. Further development of the hotel and restaurant industry is impossible without modern equipment and the latest technologies. This concerns, first of all, information technologies, and effective and

reliable protection systems, without which it is impossible to achieve a high level of service quality [36; 37, p. 227].

Table 4. The structure of information flows of various means of accommodation

Information base	Accompanying information base
organizational documents	structural and staff numbers, staffing schedules, job instructions, etc.
administrative documents	decisions, instructions, and orders on the main activity
personnel documents	collective agreement, personnel orders, work books, personal files, and personal accounts
financial and accounting documents	annual report, general ledger, profit and loss accounts, acts, audits, etc.
information and reference documents	letters, references, and reports
regulatory documents from higher authorities	
commercial documents	contracts and agreements
settlements with external services	purchase invoices, and external deliveries
income from basic and additional services	accounts for the provision of services, settlements with clients, cash receipts, and payment transactions
formation of the expendable part	distribution of periodic costs, distribution of overhead costs, depreciation deductions, and cost of hotel services
room service by staff	sending rooms into operation, entry of rooms into the register, active room stock, and resettlement
Providing additional services	registers of additional services, network schedule for the provision of additional services, and rental needs

Sources: developed by the authors

Hotel systems allow one to automate all stages of guest service, starting from ticket booking, check-in, and ending with the final payment, as well as the main business processes – from the work of maids to the organization of reporting at the enterprise. In addition, they provide management of all hotel services and systems available in the room.

The ratio between the number of hotel projects implemented in Ukraine on HMS systems of different brands is presented in Fig. 8.

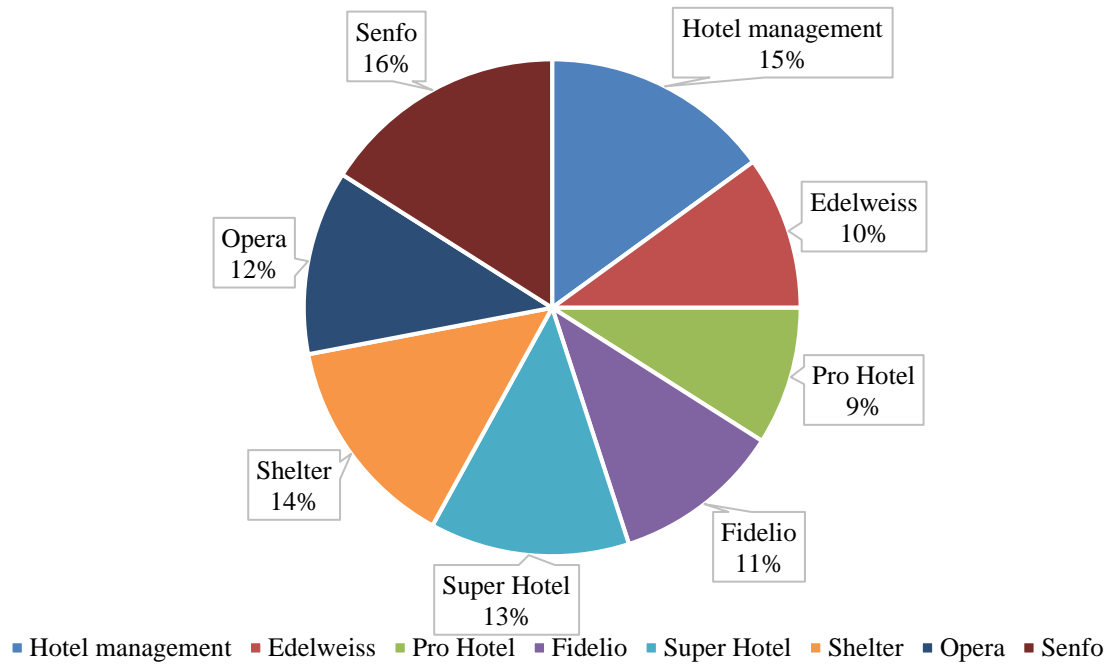


Figure 8. Structure of ACS installations of hotels in Ukraine

Sources: developed by the authors

The given data show that hotel management has a wide spectrum in the field of information technology implementation and automation. At the same time, there are great prospects for further development in this direction, because there are more than ten high-quality modern hotel management automation systems on the Ukrainian market, and some of them are not adaptations of foreign systems, but original developments of Ukrainian companies and are therefore most adapted to the conditions of Ukraine.

For the formation of proper internal information flows in the enterprises of the hotel industry, it is necessary to implement automated systems that allow rational and balanced use of resource potential with the lowest costs for business processes.

At present, the most common automated hotel systems used in global practice are [36]:

- Hotel management system (*PMS – Property Management System*);
- Restaurant management system (*Point of Sales*);
- Telephone service system (*Telephone Management System*);
- Electronic key system (*Key System*);
- System of electronic mini bars (*Mini bar System*);
- Interactive television system (*Video Services System*);
- Energy saving system (*Energy Management System*);
- Credit card processing system (*Credit Card Authorization System*);
- Warehouse accounting and costing system (*Food & Beverage*);
- The financial and accounting system (*Accounting System*);

- Central reservation system (*Central Reservation System*);
- Internet booking system (*Web Reservation System*);
- Personnel accounting system (*Human Resource System*);
- Security system (*Security System*).

An important place in the information provision of hotels is occupied by the information center. The activity of the information center is aimed at increasing the efficiency of hotel management and has the following directions:

- management assistance:
 - warehouse management;
 - commodity and material resources;
 - personnel;
- organization and implementation of information systems in various services and departments;
- work of the marketing department by collecting and processing important information to develop operational and strategic decisions, assisting the accounting department in monitoring and controlling the movement of customer folio accounts;
- processing of data and information;
- generation of necessary report forms and data transfer.

The work of the information center is aimed at comprehensive management of material and information flows in the field of information support for reception and accommodation services, restaurants, room service, security, fire protection services, maids, etc.

The hotel and restaurant business has achieved special success over the past 30 years due to the introduction of effective management systems using innovations [37, p.332; 38]. Diagnostics of the effectiveness of experience, planning, and implementation of information systems, and technologies made it possible to outline the reasons for their implementation (Fig. 9). The questionnaires of 20 hotel business enterprises in the city of “B” were taken as a basis. In most cases of changes in the formation of the information field (60%), forced and voluntary factors are considered the main motivating impulse.

Among the factors predicting changes in the information space, it is possible to single out: deterioration of financial and economic indicators (54%), incomplete satisfaction of consumers (15%), and dissatisfaction of employees with existing information flows (10%).

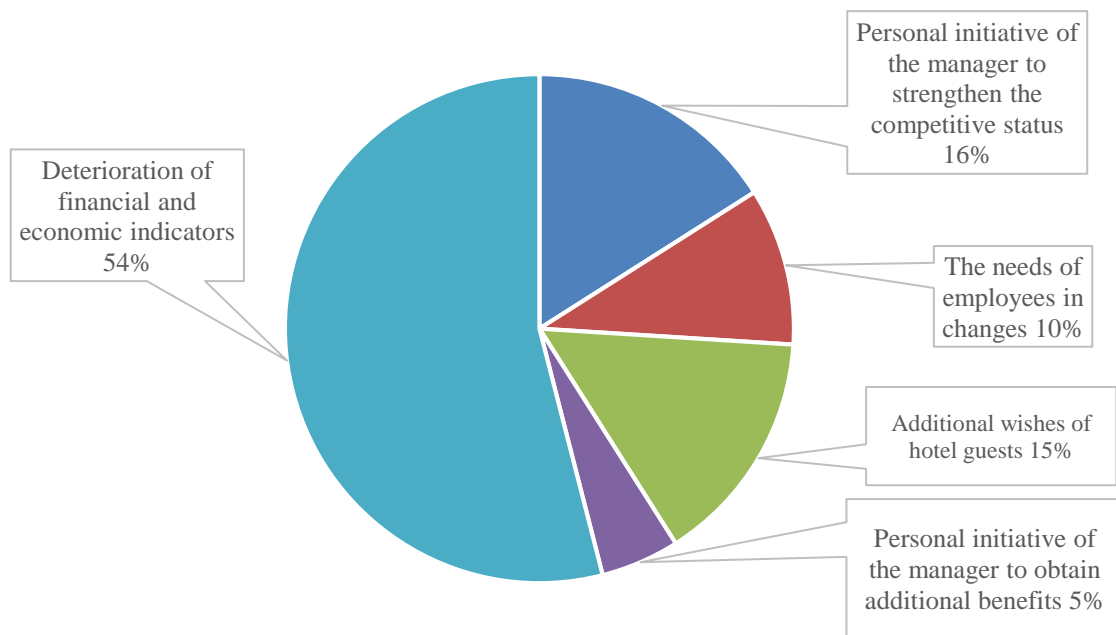


Figure 9. Reasons for making changes in the hotel's information support structure

Sources: developed by the authors

Functional and line managers of the hotel business evaluate the perception and recognition of the need for constant monitoring of the existing information interaction and the formation of the information field of the hotel enterprise based on it, defining the main barriers that can be ranked as follows:

- lack of competent specialists in modern information technologies;
- lack of awareness of the need to introduce modern information systems;
- lack of financial resources for information changes.

The hotel and restaurant business is an industry with a high level of information saturation, and its success directly depends on the speed of transmission and exchange of information, relevance, and timeliness of receipt. The development of the hotel and restaurant business involves the wide use of the latest information technologies both in the field of introducing new hotel services and in their promotion to the market [37, p. 271]. Managerial interaction involves the constant use and provision of information units at different levels of management. For hotel business enterprises, it is sometimes difficult and impossible to determine the information flows of strategic and tactical levels of management [38-39]. To eliminate this problem, information support must be viewed through the prism of information flows generated during the implementation of business processes in the main departments of the hotel. The level of their content, completeness, and intensity ensure rational management interaction and make it possible to determine the index of consumer satisfaction with the information of the hotel divisions. For selected enterprises of the hotel business in the city of "B", the data of this indicator are given in Table 5.

Table 5. Efficiency indicators of hotel business information services

The main components of the hotel's information service	Importance to consumers of components		Quality assessment					total	The average value of the quality assessment	Consumer satisfaction index, %
	Bi	%	5	4	3	2	1			
1. Reception and accommodation service (reception service)	5.0	11.26	12	6	2	0	0	20	4.5	87.5
2. Service desk, room management	4.3	9.68	10	5	3	2	0	20	4.15	78.75
3. Reception service and settlement part	4.1	9.23	8	7	5	0	0	20	4.15	78.75
4. Telecommunication services	4.0	9.01	15	5	0	0	0	20	4.75	93.75
5. Room maintenance service	4.7	10.59	6	6	6	2	0	20	3.8	70.00
6. Security service	4.8	10.81	15	4	1	0	0	20	4.7	92.5
7. Catering service	4.9	11.04	5	9	4	2	0	20	3.85	71.25
8. Engineering and technical service	4.5	10,14	15	4	1	0	0	20	4.7	92.5
9. Administrative service	4.6	10.36	10	6	4	0	0	20	4.3	82.5
10. Additional services (hairdresser, swimming pool, solarium)	3.5	7.88	6	10	4	0	0	20	4.1	77.5
Total (absolute value of the sum of the numbers in the column)	44.4	100.00	102	62	30	6	0	200	43.0	825.0

Sources: developed by the authors

As can be seen from the table, the service providing telecommunication services, the security service, and the engineering and technical service correspond to the highest consumer satisfaction with information provision. Indexing the degree of consumer satisfaction with the information base allows for formalizing the organizational work of the hotel based on the needs and expectations of the consumer,

which makes it possible to choose strategic alternatives for improving the quality of the hotel enterprise.

Conclusions. Informatization and computerization of business processes are necessary aspect of the effective operation of hotel enterprises. They affect its efficiency, competitiveness, and innovativeness, in particular, here are some possible consequences:

- increasing productivity and quality of customer service using automated reservation, registration, payment, and personnel management systems;
- decrease costs and increase profitability due to optimization resources, reduction of errors, improving quality control and safety;
- extension markets and attraction new segments of clients using online marketing, social networks, mobile applications, loyalty programs, etc.;
- creation of new products and services using intellectual analysis cloud data technologies, artificial intelligence, Internet of things, etc.

In the course of the research, we analyzed the effectiveness of information support for management interaction of hotel business enterprises, developed measures to improve management accounting in Hotel “A”, and also calculated the economic efficiency of the proposed measures, as follows: proposed measures to intensify the management activity of the hotel “A” based on the use of information systems and technology are effective and can be implemented in the activities of hotel “A”.

Therefore, management accounting in the hotel is an important tool for planning, controlling, and evaluating the effectiveness of business processes. Ways to improve management accounting in the hotel can be as follows:

- the use of modern information technologies to automate the collection, processing, and analysis of data on expenses, income, occupancy, profitability, etc. This helps reduce errors, increase the speed and accuracy of information, and improve decision making;
- the application of strategic management accounting aimed at determining the goals, strategies, and performance indicators of the hotel in the long term. This helps to take into account the external environment, competitive situation, customer needs, and other factors affecting the success of the hotel;
- implementation of a budgeting system, which involves drawing up a plan for the hotel’s income and expenses for a certain period, as well as monitoring its implementation. This allows one to rationally allocate resources, predict financial results, identify deviations, and correct actions;
- involving staff in the management accounting process, which includes stimulating, motivating, and training hotel employees. This helps to improve the quality of work, increase interaction, and coordination between departments, and create a corporate culture.

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