# Kyiv National University of Trade and Economics Department of Management

#### FINAL QUALIFYING PAPER on the topic:

# "Development of information management systems at the trade enterprise"

(by materials of the "Epicenter K" LLC, Kyiv)

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#### INTRODUCTION

**Relevance of research.** Nowadays, there is a global transition from the industrial society to the informational, the development of which is directly related to the intensification of informational processes, the need to collect, process and transfer huge amounts of information, the transformation of information into a product, as a rule, of considerable value. The advent of the World Wide Web has led to an avalanche of international communications in various areas of human life.

The current stage of economic development of Ukraine is characterized by the need to develop promising areas of science and technology and increase production efficiency in order to bring the quality of products to world standards. To solve this problem, the management of the enterprises requires prompt reliable information about the actual state of production, resource requirements, market situation, etc. One of the effective ways of improving enterprise management is the development and implementation of modern information-management systems and technologies.

The establishment of information systems and technologies is a prerequisite for the modern enterprise, which will facilitate the adoption of sound strategic management decisions aimed at increasing competitiveness and enhancing the economic security of the enterprise.

The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. In the body the heart plays the role of supplying pure blood to all the elements of the body including the brain. The heart work faster and supplies more blood when needed. It regulates and controls the incoming impure blood, processed it and sends it to the destination in the quantity needed. It fulfills the needs of blood supply to human body in normal course and also in crisis.

The MIS plays exactly the same role in the organization. The system ensures that an appropriate data is collected from the various sources, processed and send further to all the needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the management functionaries: the managers and top management.

That is, the use of information systems and information technology in the conditions of intensive development of market relations becomes one of the most important elements of effective management. Businesses increasingly rely on modern information systems and technologies to monitor the external and internal flows of information, to use it for analysis, forecasting, management decisions - the most effective way to improve the efficiency of the workflow is its automation.

Commerce as one of the first areas of human activity was one of the first to introduce information technologies. This is true to assume that it was in its "automated accounting system".

Years passed, trade developed, information technology developed. Of course, there are those who still have enough cash registers today that have become "smarter" easier and more convenient, but the essence of the process has changed little. The scale of trade, the range, the flow of customers has increased - this is an order of magnitude more than a century ago, and managing a trading company without automation has become very difficult, and sometimes impossible.

Thus, changes that are constantly observed in the sphere of trade (related to the development of retail networks, the creation of distribution and transport and logistics centers, the emergence and active promotion of new trading formats using advanced sales technologies, etc.) necessitate the introduction of special information technologies to increase the efficiency and timeliness of obtaining accounting and analytical information, which will improve the quality of information management under the trade, minimize costs and generate real profit. Management information systems not only reflect the functioning of the management entity, but also affect it through the management. They are the accumulator of information processes to meet the need for information at different levels of decision making, their purpose is to produce information for use (consumption) by the administrative apparatus and to accelerate the operational cycles of the enterprise activity. Therefore, studying directions of improvement of information management systems at trade enterprise is important. All this emphasizes the relevance of the study.

The purpose of research is a set of theoretical, methodological and practical problems related to the process of information management systems development in a trade enterprise.

To achieve this goal the author has formulated and solved the following **tasks**:

 to investigate the essence of management information systems at a trade enterprise;

- to reveal approaches to the development and implementation of management information systems at a trade enterprise;

 to implement organizational and economic characteristics of a particular enterprise – "Epicenter K" LLC;

- to investigate the state of development of existing management information systems at the enterprise;

- to develop measures to improve the management information systems program;

- to evaluate the effectiveness of the proposed measures at the enterprise.

**The object of the research** is the improvement of the information management systems program at the trade enterprise.

**The subject of research** is theoretical-methodological and applied methods of development of the information management systems at the trade enterprise.

The methods of research. The methodological and theoretical basis of the thesis has made a synthesis of the results of fundamental and applied research in the field of information management systems, modern theory and methods of information systems and technoligies.

The thesis used such general methods of scientific knowledge, both historical and comparative, and special research methods, as particular abstractlogical, statistical and economic, monographic, analysis and synthesis, comparisons, benchmarking and other methods of economic research of economic-mathematical method, the analytical and logical generalizations.

**Information base** of study consisted of: economic literature and periodicals, analytical data on various areas of information management systems, materials, programs for the enterprise development as well as the results of research carried out by the author.

**Practical significance of the obtained results** is in the fact that the scientific provisions, conclusions and recommendations of the research can be used to improve the efficiency of information management systems development at the trade companies and especially at "Epicenter K" LLC.

**Approval** of the research is done in the author's article "The essence of the information management systems at the trade enterprise" (Appendix A).

**Structure of paper.** Final qualifying paper consists of introduction, three parts, conclusions and recommendations, references and appendices. Volume of the main part of the work is equal to 45 pages. Paper has 8 figures and 15 tables and 8 pages of appendicies.

# PART 1 THEORETICAL BASIS OF THE DEVELOPMENT AND USE OF INFORMATION MANAGEMENT SYSTEMS AT THE TRADE ENTERPRISE

1.1. The essence of the information management systems at the trade enterprise

One of the main features of business from the beginning of XXI century is that information has become an important productive resource, an integral part of the management system. Information is related with all processes occurring within a single enterprise. In modern times and the realities of the market economy, information is considered as increasingly being as the one of the most important factors in the proper management and operation of the company [14]. Therefore, it should be noted that information isn't worth much if it doesn't serve a purpose.

There are many definitions of the concept of "information" depending on different approaches to it in various scientific fields. In the theory of data processing information systems, information is identified with any data, that is, it is interpreted as a collection of data about anything or anyone. When we talk about information from the standpoint of the task automated data processing theory, it has a different tint – it means that we should get "ready / finished" information from the "raw" information [39, p. 18-19].

In order to analyze the market state of the information management systems that can be used by trading companies in Ukraine, it is necessary to investigate what exactly constitutes an "information management system" (Table 1.1).

So, as a result of research, it is important to note that in foreign sources the concepts of "management information systems" (MIS) and "information management systems" (IMS) are the same and different authors use both of the concepts while the meaning is the same as it can be seen from the Table 1.1. In this work, we will use the term "information management systems" (IMS) as it is more understandable for the Ukrainian mentality.

# Interpretation of the concept of "information management system" in

# various sources

Source	Interpretation of the concept
Aferdita Berisha- Shaqiri [5, p. 19]	Management information system is flow-processing procedures based on computer data, and integrated with other procedures in order to provide information in a timely and effective manner to support decision-making and other management functions.
Bert Markgraf [25]	The purpose of a management information system, often referred to simply as MIS, is to help executives of an organization make decisions that advance the organization's goals. An effective MIS assembles data available from company operations, external inputs and past activities into information that shows what the company has achieved in key areas of interest, and what is required for further progress.
David Weedmark [35]	An information management system collects and manages data that is stored in a variety of formats and makes it accessible to the people who need it. Information management system is a system of rules set by the company to determine how employees collect, store and access information
G.B. Davis [19]	An integrated user-machine system for providing information to support operations, management and decision making functions in an organization. The system utilizes computerized and manual procedures; models for analysis, planning, control and decision making; and a database.
Ingram David [8]	A management information system (MIS) is a set of systems and procedures that gather data from a range of sources, compile it and present it in a readable format. Managers use an MIS to create reports that provide them with a comprehensive overview of all the information they need to make decisions ranging from daily minutiae to top-level strategy.
Martin (CleverISM) [26]	Management information system, commonly referred to as MIS is a phrase consisting of three words: management, information and systems. Looking at these three words, it's easy to define Management Information Systems as systems that provide information to management.
Mirjana Radovic- Markovic [33, P. 180]	MIS basically involves the process of collecting, processing, storing, retrieving and communicating the relevant information for the purpose of efficient management operations. MIS is defined as type of information system that transforms data to information and summarizes the information to Meaningful and useful forms as management reports to use it in managerial decision making (p.5).
Mustafa Muhamet [28, P. 229]	Management information system provides a support for making decisions based on methods and systematic analysis.
SoftwareSuggest [17]	Management information system, or simply MIS, is a set of information tools. It helps an organization assimilate all the necessary information, needed for seamless operations.
Smartsheet Inc. [24]	In business, management information systems (or information management systems) are tools used to support processes, operations, intelligence, and IT. MIS tools move data and manage information.

Ending of the Table 1.1

Source	e Interpretation of the concept			
Woodruff Jim [20]	A business owner needs a management information systems that provides data about the current activities of the company. They report the crucial financial metrics about the performance of the business. They let you see in an instant if the business is operating as expected. The MIS definition includes those gauges.			

*Source: formed on the basis of processing* [5, p. 19; 8; 17; 19; 20; 24; 26; 28, P. 229; 33, P. 180; 35]

An interesting approach is also observed in Ukrainian literature. Domestic scientists in their majority study the concept of "information system", and there is less of works devoted precisely to the "information management systems" concept. Although in some works, depending on the attitude to the enterprise management process, the following systems are distinguished: information management systems of the enterprise; other information systems. And, for example, such a scientist as N.G. Georgiad [3, p. 38] determines that "enterprise information management system is a set of management information, management entities, information technologies of enterprise management system and communication between them"; O.V. Voronkova determines that "information management system is presented in the form of an integrated system, whichincludes a certain number of local computer networks" [34]. So generally, Ukrainian scientists determine the "information system" concept as the same as "information management system (IMS)" in their works and don't use such concept as "management information system (MIS)". It means that, when they write about information systems, they mean that they are talking exactly about information management systems.

At the same time, it is a worthwhile to differentiate such concepts as "information systems", "information management systems (IMS) / management information systems (MIS)" and "information technologies". In information systems (IS), there is a greater emphasis on tools, while MIS places more emphasis on business processes and operations. Core task of MIS is to determine business requirements for information systems (information systems can be perceived from different points of view, however, in all cases, they refer to the systems that are commonly grouped into five categories: Office Information Systems (OIS), Transaction Processing Systems (TPS), Management Information Systems (MIS or Information Management Systems), Decision Support Systems (DSS), Executive Support Systems (ES) – so information management system is only a part of an information systems) [23, p. 39].

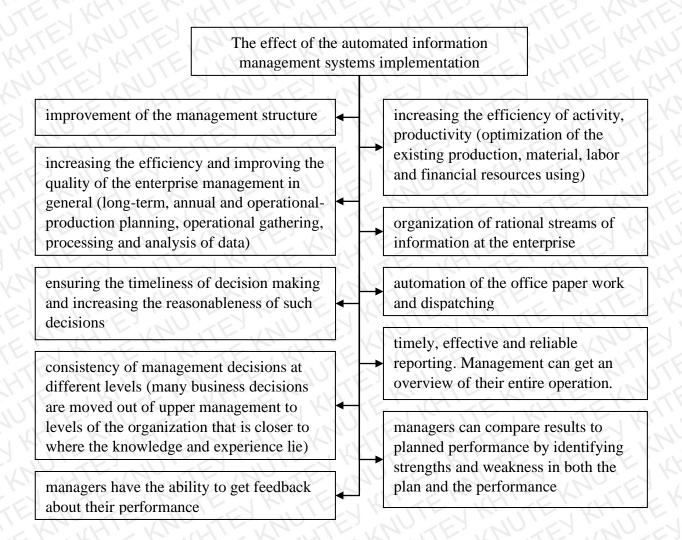
Information technology (IT) is similar to IS, but it focuses solely on computers. But, it should be noted, that information technology and MIS used to be synonymous in some causes (for instance, as it could be seen in the works of most Ukrainian scientists). Task automation (such as report creation) led to an expansion of the work that fell under MIS. Simultaneously, the definition of IT expanded even more, and it now encompases areas beyond MIS, such as cyber security and network administration [24]. However, MIS is the only major that focuses on both business processes and information technology.

But information management systems is a changing and challenging field. Computer information management systems radically change the enterprise management system, greatly facilitating the process of working with information. Modern businesses can't survive for long without using some sort of MIS to manage massive amounts of data [25].

Information management system is designed to solve the tasks of strategic and tactical planning, also operational management of accounting and also tax accounting. The use of operational information obtained through the automated information system helps the manager to solve many problems, such as the balance of material, financial and human resources of the enterprise, the assessment of management decisions results, the improvement of the goods and services cost management, etc.

Beyond the need to stay competitive, there are some key advantages of effective use of management information systems. So the main tasks solved by automated information system of the enterprise can be identified as follows (fig. 1.1).

Thus, it can be noted that automated information systems and new technologies provide an opportunity to optimize and streamline management activity. Management information system can generate valuable reports that can help businesses stay competitive and make well-educated business decisions. An information management system centralizes the information so it is not duplicated in different places or in different formats, which often leads to slightly varied versions of documents being accessible to different people at various times [35].



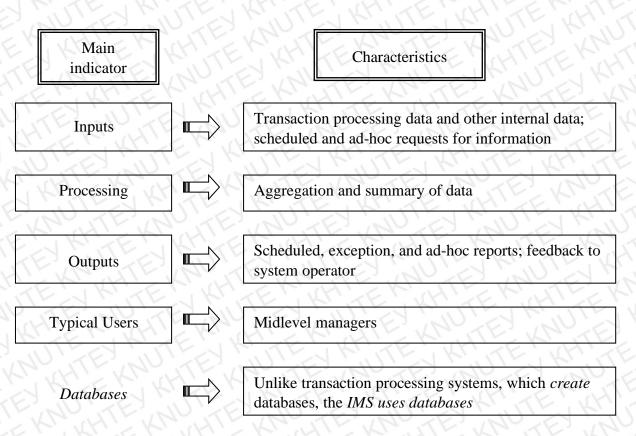
# Fig. 1.1. Benefits of the automated information systems implementation at the enterprise

Source: improved on the basis of processing [31; 44]

Management information system provides the reports that allow you to keep the business on the road. It reports and identifies what is working and what is not. If sales are not meeting monthly projections, you have a meeting with the sales manager. If a few accounts receivable go 90 days past due, you get the finance director on the phone. A report shows that raw materials in a product have gone up, so you go to the production floor to talk with the area supervisor.

These reports give owners the information they need to make decisions and improve the performance of their employees and the business. It will be an important moment for the owner when the IT people install the hardware and software for the MIS, meaning that he now has better control of the business [20].

In general, we can say that the purpose of the information management system is to set performance standards and alert the manager to deviations from those objectives in time to take corrective actions [20]. Main characteristics of IMS are shown at the fig 1.2.



# Fig. 1.2. Summary of information management system characteristics Source: formed by the author

For instance, implementation of such automated information management systems as "Parus", "1C: Enterprise", Oracle Applications, "HRM", etc. allows in tens and hundreds of times increase the speed and quality of economic and managerial information processing with a minimum use of human resources. Cumbersome paper workflow was replaced with the multifunctional and operational electronic process. This made it possible to provide a high degree of production flexibility, its ability to instantly respond to market needs.

Thus, for organizations, and especially for trade companies, there is even no question whether it is necessary to implement an information management system at the enterprise. The advantages are undeniable. So the main problem faced by the head of a modern enterprise is the choice of the type and developer (manufacturer) of the information system. The current state of the information and computer systems market in Ukraine is due primarily to the historical development of Ukrainian ISs, entrance of foreign developers and partners on the market. Foreign information management systems contain more functionality, they are more powerful, however, their prices are rather high, as well as maintenance. Therefore, the feasibility of installing them at a small enterprises is rather low.

But benefits of a specific information system differ from one company to another, depending on an economic sector, in which the enterprise operates, and business processes, for which the IS was procured [23, p. 39].

At the same time, the current conditions for doing business are such that all opportunities for intensive growth of trading enterprises are practically exhausted. Competition is extremely sharpened, and the same product can be provided by dozens and hundreds of suppliers at roughly the same prices. In this case, price competition is not the main thing anymore, since the opportunities for maneuvers in this field are almost completely covered by various bonus schemes and loyalty programs.

In such circumstances, the only effective tool for competition between trading enterprises remains the quality of customer service. And here comes the speed of goods delivery, its availability, after-sales service, etc. And service quality can also be improved with such services as [42]:

- automated goods ordering system;
- integration of seller and customer information systems;

prompt client information about his order execution progress.

So the main thing for the trade enterprises that they are striving for – is the right information in the right place at the right time.

For trading companies is also a bonus the fact that information technology is now actively developing in the mobile sector. For trading, this means that employees who have never had their automated workplaces get them on tablets and smartphones.

Another important trend is the development of cloud services, which significantly accelerates the solution of integration tasks: this includes the inclusion of remote affiliates in the general information space, and integration with the information systems of external contractors, etc.

So today in the world of rapid changes, on time and precise information is the key of success for all. In addition; it is a basis for each decision. High quality of management information systems means high quality of information, perceived usefulness, decision makers' satisfaction and increase the quality of managerial decision making.

# **1.2** Approaches to the information management systems development and implementation at the trade enterprise

Information management system is a database and transaction management system that was first introduced by IBM in 1968 [18]. The technology and tools used in information management systems have evolved over time, so when we want to speak about IMS implementation, first of all it should be highlighted 6 approaches to the information management systems formation from the beginning of their entity (fig. 1.3).

To effectively deliver the information needed to decision makers, IMS needs to have the necessary components to collect, process, store and retrieve the information whenever it is needed. For now, IMS consists of four major components, that can be seen at the fig 1.4.

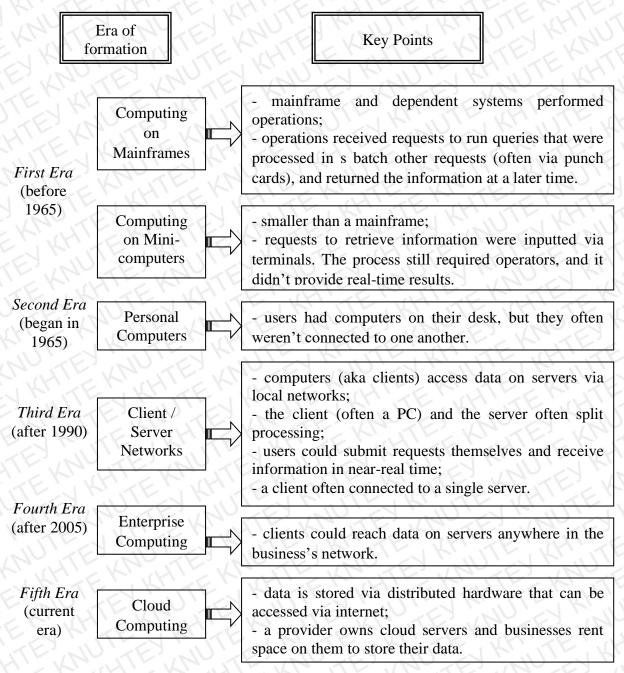


Fig. 1.3. Eras of the information management systems formation Source: improved on the basis of processing [24; 26]

Hierarchical IMS databases generally come in three forms that are shown at the fig. 1.5.

Management information system is a broad term that incorporates many specialized systems. Consequently, management information systems are often classified as being one type or another, based upon hardware and / or software difference.

Major components of the information management system
KUTE KUTELKUTELKULL
This is a combination of software, hardware (computers scanners, printers and network devices), personnel and
em infrastructure. This component helps in the <i>collection of data</i> that is stored in
the MIS and makes it possible for employees to <i>interact with the system</i> .
<i>The data in each level is dependent on the data in the next higher level, so the data is organized into a hierarchy.</i> The data is arranged so that its integrity is ensured, and the <i>storage and retrieval process</i> is optimized.
TE KNOTE KHOTE KHOTE KIND
tion tem controls input /output processing, provides formatting logging, and recovery of messages, maintains communications security, and oversees the scheduling and execution of programs. TM uses a messaging mechanism for queuing requests.
concerned with processing of the data collected and presenting it in a manner that is easy to comprehend. It is sometimes referred to as business intelligence which stores human knowledge and uses the logic to formulate quick solutions for future problems where patterns match.
concerned with identifying the main management problems in the organization and coming up with alternative decisions that could have sufficed in a particular situation. This helps ensure that all the possible options are analyzed and the best decision

Fig. 1.4. Components of information management systems Source: formed on the basis of processing [18; 26]

However, a much more important criterion for classifying management information systems is the type of output information the system provides (Table 1.2).

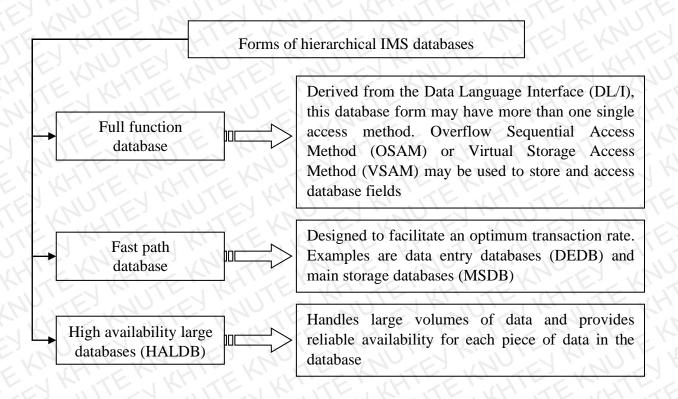


Fig. 1.5. Forms of the IMS databases

Source: formed on the basis of processing [12, p. 247; 19]

Thus, the most popular foreign developers of information management systems are SAP, IBM, Oracle, Zoho, PeopleSoft.

Table 1.2

#### The major types of information management systems that can be used

Type of a system	Users	The essence of using	Top 5 Software Leaders	
Human Resource Management System (HRMS)	HRM department, managers	<ul> <li>This system tracks employee performance records and payroll data.</li> <li>This type of IMS helps an organization to streamline all its HR related issues. It comes with a set of online MIS software that takes care of everything from job posting to final recruiting.</li> <li>BambooHR (by BambooHR), Zoho Recruit (by Zoho), Bitrix24 (by Bitri SAP SuccessFactor (by SAP), Oracle HCM Cloud (by Oracle)</li> </ul>		
Financial Accounting System (FAS)	Specific to departments dealing with finances and accounting	helps an organization to get hold of all its accounting and finance operations. The free IMS software meticulously tracks down the assets of an organization and helps it to meet all its payroll and taxes	Zoho Books, Zoho Expense, SAP S/4HANA for Finance, Oracle Financials Cloud, Business Payments	

#### at the trade enterprise

Type of a system	Users	The essence of using	Top 5 Software Leaders	
TEKKK HTEKK NUTEK		compliances. The detailed IMS solutions also help the management to get the monthly/yearly audit reports with detailed analysis of every component.	(by CloudBusiness)	
Marketing Information System (MkIS)	Marketing teams	to report on the effectiveness of past and current campaigns and use the lessons learned to plan future campaigns	HubSpot Marketing, LinkedIn Website Demographics, Exponea, CleverTap	
Sales Force Automation System (SFA)	Sales team	A specialized component of a CRM system that automates many tasks that a sales team performs. It can include contact management, lead tracking and generation, and order management.	Zoho CRM Tools, SAP (Cloud for Sales), Pipedriv, Salesforsce, SugarCR, Oracle and NetSuite Customer Relationship Management (CRM)	
Customer Relationship Management System (CRM)	Marketing, customer service, sales, and business development teams	stores key information about customers, including previous sales, contact information, and sales opportunities.	Bitrix24, HubSpot CRM, Salesforce CRM, Zoho CRM, Pipedrive	
Business Intelligence System (BIS)	Operations manager (system is similar to EIS, but both lower level managers and executives use it).	to make business decisions based on the collection, integration, and analysis of the collected data and information.	SAP Business Intelligence, Sisense, MicroStrategy, Tableau, Clear Analytics, Oracle BI, Zoho Analytics	
Enterprise Resource Planning System (ERP)	The applications that make up the system share data across various departments (manufacturing, purchasing, sales, accounting, etc.) that provide the data.	ERP-systems are designed to plan all kinds of enterprise resources; the basis of ERP- systems is the principle of creating a single database containing all corporate business information.	Bitrix24, SAP Business ByDesign (SAP ERP), NetSuite ERP, Oracle ERP Cloud, Microsoft Dynamics GP, Sage 100 ERP	

Source: formed on the basis of processing [1, P. 32-34; 6; 10; 13; 15; 16; 17; 24; 26]

But we should understand that they are too expensive for Ukrainian companies and only big corporations can allow them (and even so it would be only

some software applications from, for example, SAP (SAP Business One or SAP Retail) or Oracle (Oracle Small Business Suite (NetSuite)), or Bitrix24, which nowadays become more popular). If we talk about Ukrainian market, Ukrainian companies, it could be 1C: Enterprise (Trade Management Configuration if we talk about trading), SET Retail Pro, SM Complex Retail, office software MS Office-XP, etc.If we talk about trading enterprise functioning in general, so for warehouse logistics are responsible the warehouse management systems (WMS), for transport logistics – cargo transportation management system (TMS – Transport Management System); tasks of interaction with the outside world are solved by special systems of electronic data interchange (EDI – Electronic data interchange); the tasks of maintaining customer loyalty and marketing objectives are solved jointly in commodity accounting systems or the corresponding modules of ERP-systems and in systems of clients relations management – CRM (look Table 1.2).

Thus, for the effective operation of any trading enterprise it is necessary to equip it with technical means – computers, network equipment, electronic trading equipment, including barcode scanners, fiscal registers, checks and labels printers, data collection terminals. This hardware should support the work with embedded software. The result should be a comprehensive information system that automates trading activities. It is obvious that in the world there is still no absolutely perfect technology and a fully functional system for automating the management of trade enterprises – each enterprise should choose its information management system depending on the size and specifics of its market.

#### PART 2

# STUDY OF THE INFORMATION MANAGEMENT SYSTEMS AT "EPICENTER K" LLC

2.1 Analysis of existing information management systems at the enterprise

Epicenter K (one of the stores subject to the study of final qualification work), having chosen a strategy of leadership in the retail market of format "from and to" in Ukraine, became the leader in the retail market of Ukraine with domestic investments, numbering 51 operating shopping center in different regions of Ukraine, starting from the city of Kyiv, ending with the district centers. More than 550 thousand items, 25 thousand employees, more than 5.5 thousand suppliers, 1.5 million square meters of retail space, 5 million buyers monthly (Fig. 2.1) – the share of the Epicenter chain of construction hypermarkets in the Kiev market is 53%.

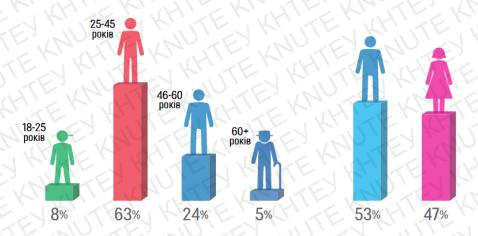


Fig. 2.1. Epicenter K buyers split by age (first graph) and by gender (second graph)

#### Source: Based on Epicenter Official Website [46]

According to official information, Epicenter K's mission is: "Epicenter offers customers the best deals and offers the highest level of service in a 'from and to' format – the full range of construction materials and home goods" [46]. Epicenter K has an official website – [46], as well as an official store – "Hypermarket 27.ua".

The hypermarket 27.ua positions itself not just as an online store, but as a 27.ua – more than an online hypermarket, whose mission sounds like "With us you can always easily place an order, quickly get the desired product and stay happy shopping" [46].

In 2018, the results of 27.ua exceeded expectations. The project is growing faster than the Ukrainian e-commerce market, improving its performance and bypassing competitors one by one. For example, this year 27.ua bypassed the traffic of such a strong Internet player as Foxtrot. This was made possible by improving logistics and IT infrastructure, competent marketing and continuous work on operational processes.

Retail experts from Western Europe note the creativity, high-tech, convenience and special atmosphere in the network's trading halls. Today, Epicenter K's experience is being studied by leading European retailer associations. And this motivates the company itself to achieve even greater achievements and victories to constantly confirm its status as a modern innovative company in the sphere of retail, which makes the life of Ukrainians better. The Epicenter K success story is provided in Appendix B.

In addition, the company is an integral part of the Ukrainian economy: it provides new jobs to the population, attracts local producers' goods, raises budget revenues through taxes, and implements many social programs.

Thus, Epicenter K is the only retailer of such a multiformat, where a huge number of goods of different groups are collected under one roof (exclusively at Epicenter are presented: Klever, Valore, Waldenburg, Water house, AstoN, Expert, Wild Wind, Flamberg, La Nuit, etc.): from the construction group to children's, sports, home improvement goods (Table 2.1).

If to analyze more deeply the organizational structure of "Epicenter K", it is necessary to take into account the whole complex of production and service units (see table. 2.1), as well as the apparatus of enterprise management. The founders of Epicenter K are listed as of 2019:

- Gerega Alexander, founder of Epicenter K, Limited Liability Company;

- Hera Halyna, founder, chairman of Epicenter K, Limited Liability Company;

– Tatiana Sergzhik, founder, first deputy chairman of Epicenter K, Limited Liability Company.

Table 2.1

Areas of activity	Detailing directions of shopping center activity
Departments of the shopping center	Garden and Tools, Tools, Electrical Engineering, Metal Products, Decor, Floor Covering, Plumbing, Wood Products, Building Materials, Design Arena (Design Arena), Sushi / Roof, Beauty shop (Mon Cheri cosmetics), Shop Equipment, Furniture Center: ideas and solutions, Home Appliances, Car (auto goods, Intersport (Sporting Goods), Epic - baby products (Baby Goods Shops), Military (Fishing. Hiking. Hunting), Garden (Garden. Garden). New Year. Inflatable. Animals), Write and Draw (Office. School. Art), Deco Galleries (tableware, textiles, etc.) gifts)
Shopping center services	Baguette Workshop, Bundling, Goods Delivery, Formatting and Cutting Section, Key Making, Door Tuning, Design Center, Tinting, Kitchen Design, Cafe, Bank Services, Custom Goods, Carpet Overlay, Tailoring, Energy Efficiency Center, Energy Efficiency Center storage, cashless payment, customer service center (service center, exchange and returns).
	Garden and garden tips: Lawn care, Tree and shrub pruning, Repair tips, Laying laminate flooring, Drywall, Laying tiles on walls, Linoleum flooring, Tips on different topics, Selecting an aquarium, Selecting a bath.
Internal departments of the shopping center	Security Department, Business Department, Financial and Analytical Division, Accounting and Reporting Division, Information Division, Cash Desks, Commodity Reception Department, Internal Advertising Division, Human Resources Division, Occupational Safety and Fire Engineer, Medical Practice

**Organizational Structure of Epicenter K Shopping Center** 

Source: Based on Epicenter Official Website [46]

The organizational structure of the hypermarket is constantly improving, increasingly adapting to market conditions, but the main direction of improvement is the transition to strategic management. In this regard, in the future, more and more attention will be paid to marketing management, which includes not only the forecast of market development, but also the opportunity to influence the future.

The location of Epicenter K LLC in the structure of Epicenter group of companies is presented in fig. 2.2.

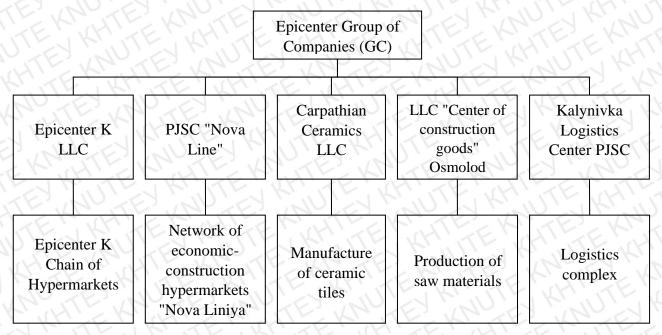


Fig. 2.2. Epicenter K LLC's place in the structure of Epicenter Group of Companies

Source: Based on data from Epicenter's official website [46]

The object of study of the final qualification work is the "Epicenter K" hypermarket, located at Kiev, ul. Bratislava, 11, with a shopping center area of 37 220 m2. The hypermarket's opening date is December 6, 2003, and it is Epicenter's first store, as well as its legal address for Epicenter K.

The organizational structure of this store corresponds to the Table 2.1 information. The hypermarket is not a legal entity – it disposes of property belonging to the ownership of the company. The main task of the hypermarket is to represent the company in the implementation of retail and wholesale trade in materials (goods) for construction purposes.

To accomplish the tasks set for Epicenter K LLC, the shop uses an automated Potamus program. Potamus is a Shareware software in category (2) developed by ASU-EpicentrK in 2015. Potamus runs on the following operating systems: Android/Windows.

Potamus is not a detached system, it is possible to exchange with other systems, for example. 1C. For exchanges, from Potamus we can today pass on the following information (Epicenter K was used) when transitioning from 1C system in 2015):

- 1. Potamus Product List (Separator ~) = actually an assortment.
- 2. Article
- 3. Level 1 parent group ID
- 4. Level 2 parent group ID
- 5. Level 3 parent group ID
- 6. Department Number / Department
- 7. Name
- 8. Name for cash registers
- 9. Barcodes (through, if many)
- 10. Reference
- **11. CHARACTERISTICS**
- 12. Country ID
- 13. Brand ID (VTM only, epimarks)
- 14. Unit ID

Prices and market balances are also entered. There are such fields:

- 1. Article
- 2. Market ID
- 3. Sale price in the market
- 4. The balance in the market
- 5. Prices for the online store.

To set up exchanges between the Potamus base and 1C, the contractor represented by First Bit needed to physically receive two files (files are uploaded via FTP. File marker with a temporary stamp – run-time.txt):

1. A file in which there will be balances by market. Information to be obtained from this file: article, name, barcode, reference, market, remainder of the market.

2. A file in which there will be prices for 1C. Information to be obtained from this file: article, name, barcode, reference; 2.1. purchase price 1C (it may be necessary to create a type of price "Internet price", which can be used in certain resolutions in controversial moments); 2.2. recommended price Potamus for 1C (Table 2.2).

Table 2.2

Base for pricing	CIE VO	ptions	Note
The purchase price at which Potamus releases 1C. This price will be the purchase price for the 1C system. Price calculation can be considered in two ways:	1 option: "last Potamus purchase" + "% Potamus extra charge for online store" = "Purchase price 1C"	2 option: "maximum purchase on the network among the markets" + "% Potamus margin for the online store" = "Purchase price 1C"	% Potamus margin for an online store should be minimal and regulated for each group of goods, with limited access for change. Until the% value is agreed, it is necessary to obtain a file with any indicator for setting the exchange.
Recommended selling price for 1C from the Potamus system = maximum selling price for the network	The recommended price will change in 1C based on monitoring obtained using price aggregators		HotLine, Price.ua can act as price aggregators, in the future it is necessary to obtain specifications from CEO-analytics)

#### Variations in the Potamus system at the Epicenter K LLC

Source: Based on information received from Epicenter K hypermarket employees

The algorithm for processing the loading of a new nomenclature is such a sequence:

1. The criterion by which the product is selected is the bar code (the EAN-13 code is unique for the product, and on an international scale, there may be cases when the bar code is repeated, but this is mainly when the supplier himself puts the bar code registering it, as a rule, this code starts at 22 ...)

2. If the barcode is found, the second criterion is checked - the reference (the manufacturer's code, which is often duplicated as the supplier's code, it is possible that the reference is repeated in different products, but the priority is on the EAN-13 code)

3. If the barcode is not found, but the reference is found, a notification is received about the ability to add the barcode to the yes / no product -a notification for the role of the product manager.

One product may have several barcodes. If none of the criteria is found, a notification about a new position is received. But a new position is not added when receiving the price from the supplier, but is drawn in by a separate processing - in the role of product manager.

You can compare the goods by large criteria, but enough to start dwell on these two.

From Potamus, you can compare according to the SKU-SK – references:

- the article in the Potamus system is based on submission to the structure of the nomenclature for different departments.

- matching by name will be difficult, because in most cases it can be different for the same product, but in the case of further unification of the parameters for entering the product card, do not discard the comparison by name.

Thus, all internal documents in the Epicenter K hypermarket are formed in Potamus system, developed by ASU-EpicentrK in 2015, and contain all the necessary functionalities for working with documents.

2.2 Influence of information management systems on the final results of the enterprise

To consider the effectiveness of the system, we present the system functionality for the formation of internal documents, such as the expense of retail invoice.

A retail invoice is an internal document intended to pay for goods at the checkout. This invoice is created in the Potamus program, which allows you to reserve the goods and simplify the cashier when shipping goods on the bill retail bill.

A retail invoice is created and issued to the buyer:

- if the goods are sold on prepayment;

- if certain actions are taken with the goods (inserting a hole in the sink, refilling towels);

- for goods sold in m2 (tile, linoleum, carpet, etc.);

- when paying for the goods on the fiscal check to go through the cashier.

The retail bill of lading is displayed on the department's info-box. A copy of the document does not entitle you to ship the goods through the hypermarket offices. Based on the original retail bill of lading:

- security at the exit from the hypermarket checks the quantity of the purchased product;

– for some goods, the retail invoice is a warranty card.

Therefore, the retail bill of lading must have: its original number; hypermarket name and address cashier's name and full name of the cashier who wrote the check; the name, the internal article and the barcode of the paid product, its quantity and price including VAT per unit; total amount payable; date and time of payment.

An example of various internal documents (bill of exchange, check, bill, form for goods collection, movement of goods) of the Epicenter K hypermarket created in the Potamus automated system is given in Appendix C.

Generally, invoices are used by a hypermarket seller when:

- there is no barcode or article on the product;

- prepaid detachable goods (film, pipe, linoleum, carpet, cable, cable products...). The product is cut off by the seller only after payment and when presenting a fiscal check;

- services of format-cutting section, tuning, baguette workshop (cutting of lumber, tuning of doors, drilling of a hole in a sink, filling of a towel dryer, overlock...) are paid for;

- expensive post-paid goods are sold (power tools, mini power plants, compressors, sinks, hand tools kits, mixers, chandeliers, filters ...);

a small item is sold (a piece of consumables);

- the last item of goods is sold (goods without packaging);

– cashless sale is made;

- delivery is made (both for the buyer who pays for the goods in cash and for non-cash payments).

It is worth considering another example – the procedure for creating and carrying out the order of goods – work on the order takes place in the ordering program "filling station" in Potamus (Appendix D).

The basic algorithm is as follows:

- from Monday to Friday, the program automatically unloads orders ("filling stations") according to the schedule, the order unloading shops take place 1 business day earlier to send the order to the supplier.

- on the day of order picking, all orders are reviewed from the beginning and adjusted by the head of department or the deputy head of the department for orders, if necessary.

- to carry out the correct order it is necessary to carry out the analysis of the following indicators: the quantity of goods sold for a certain period, the balance of the given goods, the required inventory of the goods, the seasonality of the goods, the delivery time.

- each order must be reviewed and placed in the status of "Made".

-the same day, after the head of the department, the order is reviewed by the financier of the department, each order must be approved by the status "Finished."

- by 9:00 the next business day all orders must be in the Finished status.

- information that the order has been shipped, and that it has been received by the supplier, can be seen in the Potamus database in the status of the order ("filling station"), fig. 2.2.

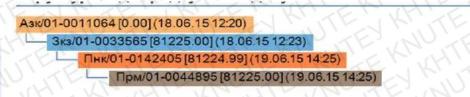


Fig. 2.3. Structure of document management in Potamus Source: Received from Epicenter K hypermarket staff

The same algorithm is inherent in, for example, the formation of the Certificate of Non-Conformity of the goods order, the invoice, the transfer, the party return of the goods, etc.

The results of the use of any automated system influence the formation of the final results, albeit indirectly (Table 2.2).

Table 2.2

E. KITE, KHITE	Period, years			Deviation	
Indicator	2016	2017	2018	2016- 2017	2017-2018
Gross profit, ths. UAN	670,4	757,9	785,4	87,5	27,5
Profit from operating activities, ths. UAN	400,5	477,6	660,5	77,1	182,9
Profit from ordinary activities, ths. UAN	462,1	611,5	865,0	149,4	253,5
Net profit, ths. UAN	336,6	447,9	632,1	111,3	184,2
The main production funds, ths.UAH	938,5	891,8	851,9	-46,7	-39,9
Profitability of turnover, %	13,9	16,7	24,8	2,9	8,1
Profitability of handling costs, ths. UAH	2,7	3,2	3,8	0,5	0,6
Profitability of production funds, %	35,9	50,2	74,2	14,4	24,0
Return on assets, %	16,3	17,6	21,7	1,4	4,1
Return on equity, %	26,3	26,9	29,4	0,6	2,5
Profit per employee, ths. UAH	57,3	70,8	111,6	13,5	40,8

Generic performance indicators Epicenter hypermarket, 2016-2018 pp.

Source: The analysis is based on data obtained from the hypermarket management apparatus

As shown in Table 2.2, in 2016-2018, the profitability of trade was constantly increasing. In 2017, it increased by 2.86%, in 20108 – by 8.09%. There was also a similar tendency to increase other indicators of enterprise efficiency.

The amount of profit generated from the sale of goods depends on a large number of factors, the most important of which are turnover, the level of commercial income, and the level of turnover costs. The impact of these factors on the change in sales revenue is analyzed in Table 2.2.

Analysis of the impact of changes in the above indicators showed that by 209,85 thousand UAH. The increase in sales revenue in 2018 was explained by a decrease in the turnover, by 0.97 thousand UAH – an increase in the level of

commercial income, and a decrease of UAH 8.65 thousand. was associated with an increase in the level of turnover costs.

Table 2.3

Indicator	Coloulation algorithm	Period, years			
	Calculation algorithm	2016	2017	2018	
Turnover, thousand UAH	ТО	3337,7	3661,2	3473,4	
The level of commercial income, %	$LCI = B\Pi / TO$	83,44	83,52	83,66	
Level of cost of treatment, %	LCT = BO/TO	18,57	19,10	23,77	

Impact of factors on the profit of Epicenter hypermarket, 2016-2018 pp.

Source: The analysis is based on data obtained from the hypermarket management apparatus

The decrease in turnover and increase in the level of expenses of the enterprise turnover in 2018 caused the decrease of profit by 1.3 and 4.89 thousand UAH, respectively. To decrease the total profit from sales of goods by 0.55 thousand UAH led to a decrease in the level of commercial income.

During last years Epicenter demonstrates good profits (increase of official profitability), the point to mention here – it is highly possible that part of Epicenter-K expenses are payments to related companies (including rental payments to Epicenter-N), so, according to our estimations) Group profitability is higher.

In general we estimate financial standing of the group is good, its current market position is perfect, we see risks related to core business as rather low. Main risks for the future activity – country and political, we can also note that in case of any, large-scale investments into non-core businesses (or into core business development in other countries) with significant new debt attraction can be also considered as risk factors for main business.

#### PART 3

# DEVELOPMENT OF THE INFORMATION MANAGEMENT SYSTEMS AT "EPICENTER K" LLC

# **3.1 Improvement of the information management systems program at the enterprise**

Until recently, "1 C: Accounting" was used at domestic enterprises. But the dynamics of recent years show that more and more often large and medium-sized enterprises are installing the German SAP program.

SAP is a market leader in enterprise applications that helps organizations of all sizes and specializations manage their business more efficiently. Despite the fact that the SAP program is extremely complex, many managers of large enterprises appreciated it. The SAP system is not just a program, it helps make decisions that allow you to change business processes, which in turn leads to a significant increase in profits.

SAP entered the Ukrainian market in 1995. In Ukraine, the company's customers are more than 250 commercial and state organizations that have successfully used SAP products localized for Ukraine for more than 20 years.

SAP Corporation is developing a system whose applications are adapted, taking into account the legal context of a particular country. The company also helps to implement its system as additional services. To do this, she developed her own technique, called ValueSAP.

The stages of implementation include the following actions:

 preparation of the project – the need to survey the activities of the enterprise in the event that this was not done in advance;

 – conceptual design – all proposals for improving activities are developed and agreed;

implementation – it is necessary to bring the organizational structure to the state that is required;

- final training - training of key and end users;

 transition to productive operation with subsequent support - it is necessary to achieve a coordinated and competent work of all users in order to achieve their goals;

 training of personnel in working with the program with the provision of the necessary materials for study, including literature;

- adaptation or customization of the system to the specifics of the business.

Functional areas of the SAP program consist of the following areas:

- SAP HANA – an advanced, technological platform for SAP solutions. SAP HANA is an in-memory, column-oriented, relational database management system developed and marketed by SAP SE. Its primary function as a database server is to store and retrieve data as requested by the applications. In addition, it performs advanced analytics (predictive analytics, spatial data processing, text analytics, text search, streaming analytics, graph data processing) and includes extract, transform, load (ETL) capabilities as well as an application server.

- SAP CRM – sales, marketing, customer loyalty management. CRM stands for Customer Relationship Management. With a CRM system, you can automate and integrate your customer-facing activities: sales, marketing, customer service, and e-commerce. Best-in-class CRM software also offers tools for customer analytics, personalization, social media, collaboration, and more.

- SAP for Retail - retail network management.

– SAP Hybris – a platform for large online stores, e-commerce.

- SAP EWM - Advanced Warehouse Management.

- SAP TM - transport management system.

– SAP BO – building business analysis systems.

- SAP BPC - budgeting, consolidation reporting.

- SAP SuccessFactors - a cloud-based HR solution.

- SAP S4 / HANA - a universal platform for integrated automation (formerly SAP ERP).

Proposal for LLC "Epicenter K" is to implement the SAP program, namely, the modular architecture of SAP SuccessFactors, which allows to quickly put into operation the necessary modules in the required sequence in the field of personnel management (Table 3.1- Table 3.9).

Table 3.1

# SAP SucessFactors modules for implementation in Epicenter K LLC

Module	Characteristic	Key features of the SAP Success Factors module
Employee Central	allows to automate key processes in terms of collecting, storing and administering personnel data, presenting it in convenient user interfaces.	<ul> <li>Collection and storage of all necessary data about employees. Personnel processes and their coordination. Regulatory compliance.</li> <li>Management of temporary employees (Contingent Workforce), part-time workers (Concurrent Employment) and trainees (Apprentice Management).</li> <li>Accounting of working hours, management of absences and vacation schedule.</li> <li>Self-service services for employees and managers.</li> <li>Ability to work with any payment structure.</li> </ul>

#### (Module: Employee Central)

Source: Based on Adaptation of Epicenter K Opportunities

Module "Recruiting" for implementation in Epicenter K LLC is obtained at the Table 3.2.

Table 3.2

# SAP SucessFactors modules for implementation in Epicenter K LLC

#### (Module: Recruiting)

Module	Characteristic	Key features of the SAP Success Factors module
Recruiting	recruitment solution that	<ul> <li>Creation and approval of applications for selection.</li> <li>Integration with external platforms (LinkedIn, HeadHunter, Super Job, etc.). Responses of candidates for vacancies using a profile on social networks.</li> </ul>

Ending of the Table 3.2

Module	Characteristic	Key features of the SAP Success Factors module
	Unlike other solutions, the main goal of SAP SuccessFactors Recruiting is not to keep track of applications for candidates. You get a tool that allows you to turn any open position into a recruitment program available to candidates around the world, ensuring their attention and maintaining relationships until the right moment.	<ul> <li>Work with recruitment agencies, posting vacancies.</li> <li>Search for candidates in the company and beyond.</li> <li>Personal office of the candidate.</li> <li>Search for candidates in accordance with the requirements. The selection process for candidates, depending on the vacancy.</li> <li>Opportunity for employees to recommend candidates, feedback on vacancies.</li> <li>Integration with SAP Jam. Collaborative selection: recommendations, collective assessment.</li> <li>Integration with talent management and learning processes.</li> <li>Available from mobile applications.</li> <li>Data analytics allow you to align personnel policies with the needs of the business and show its impact on the results.</li> </ul>

Source: Based on Adaptation of Epicenter K Opportunities

Module "Onboarding" for implementation in Epicenter K LLC is obtained at the Table 3.3.

Table 3.3

# SAP SucessFactors modules for implementation in Epicenter K LLC

# (Module: Onboarding)

Module Characteristic		Key features of the SAP Success Factors module	
Onboarding	allows you to apply an individual approach to new employees, while helping to speed up the process of adaptation and motivate you to work productively from day one.	<ul> <li>Progress along the stages of personnel adaptation for all participants in the process.</li> <li>Establishing relationships with colleagues and accessing the right resources for staff before starting work.</li> <li>Rapid training of new employees to move to productive activities and get results in a short time.</li> <li>Distribution of notifications to all participants in the process.</li> <li>Personalized content about the company: greeting, access to documents, training programs.</li> <li>Integration with the employee profile, staff recruitment system and goal setting.</li> <li>Help recruitment managers accelerate the involvement and motivate a new employee to work productively from the very first day (colleagues, mentor, goals for the near future, ordering the necessary equipment for arranging a workplace).</li> <li>Reporting.</li> <li>Available from mobile applications.</li> </ul>	

Source: Based on Adaptation of Epicenter K Opportunities

Module "Perfomance & Goals" for implementation in Epicenter K LLC is obtained at the Table 3.4.

Table 3.4

# SAP SucessFactors modules for implementation in Epicenter K LLC

# (Module: Perfomance & Goals)

Module	Characteristic	Key features of the SAP Success Factors module
Perfomance & Goals	A powerful performance management solution that helps align employee performance with an organization's strategy, track their performance, and provide ongoing and meaningful feedback for effective mentoring	<ul> <li>Setting and cascading goals.</li> <li>Master of building goals, a unified library of goals (over 500) with the possibility of expansion.</li> <li>Tracking progress towards goals. Request for updates.</li> <li>Customizable assessment process, alerts in the office and by mail Fast assessment of any employee in your team in real time.</li> <li>View the ranking of employees in a team. Identification of the best employees and their encouragement. Identification of weak employees and automatic suggestions for their development.</li> <li>Ability to schedule meetings with an agenda for problematic goals.</li> <li>The use of various forms of assessment: by purpose (qualitative and quantitative), by competency, 360, Comprehensive assessment of employees (calibration of competencies) with the right frequency.</li> <li>Planning the development of competencies for the transition to a new position.</li> <li>Available from mobile applications.</li> <li>Analytical reporting on formulation and evaluation.</li> </ul>

Source: Based on Adaptation of Epicenter K Opportunities

Module "Succession & Development" for implementation in Epicenter K, LLC is obtained at the Table 3.5.

Table 3.5

# SAP SucessFactors modules for implementation in Epicenter K LLC

Module	Characteristic	Key features of the SAP Success Factors module	
Succession & Developme nt	identify and develop talents needed to strengthen your company	<ul> <li>Combining the most promising employees in talent pools. Personnel reserve.</li> <li>Delivered expandable library of skills and competencies that allow you to select employees for key business needs.</li> </ul>	

# (Module: Succession & Development)

Ending of the Table 3.5

Module	Characteristic	Key features of the SAP Success Factors module
Succession & Developme nt	increases employee engagement and retention, contributing to company growth	<ul> <li>Identification of potential competency gaps. Automatic generation of employee development proposals.</li> <li>Individual development plans. Create development plans for all employees.</li> <li>Comparative analysis of employee profiles; Simple and powerful calibration tools.</li> <li>Reporting on succession planning (period in the status of the receiver, degree of readiness, potential positions).</li> </ul>

Source: Based on Adaptation of Epicenter K Opportunities

Module "Learning" for implementation in Epicenter K, LLC is obtained at the Table 3.6.

Table 3.6

# SAP SucessFactors modules for implementation in Epicenter K LLC

Module	Characteristic	Key features of the SAP Success Factors module
Learning	helps to make employees the center of the learning process, giving them the opportunity to act simultaneously in the roles of students and mentors. Enthusiastic employees will develop new skills, share ideas and gain knowledge, increasing motivation and productivity.	<ul> <li>Drawing up individual development and training plans.</li> <li>Creation, management and publication of training courses, maintaining a database of training events. Support for AICC and SCORM standards.</li> <li>Compulsory corporate training, self-study, exams, certificates and surveys.</li> <li>Support for non-formal learning on the corporate platform SAP Jam (placement, discussion).</li> <li>Tracking progress, reporting, ensuring compliance with internal procedures.</li> <li>Training in accordance with goals and career development.</li> <li>Planning and monitoring the implementation of the training budget.</li> <li>Available from mobile applications.</li> <li>Training analytics.</li> </ul>

(Module: Learning)

Source: Based on Adaptation of Epicenter K Opportunities

Module "Compensation Management" for implementation in Epicenter K, LLC is obtained at the Table 3.7.

# SAP SucessFactors modules for implementation in Epicenter K LLC

Module	Characteristic	Key features of the SAP Success Factors module
Compensati on Manageme nt	It is an integrated solution that is interconnected with employee performance evaluation processes and allows remuneration specialists, company executives and managers to coordinate remuneration programs with the company's business goals. The solution allows you to simulate and manage reward management programs, motivating staff.	<ul> <li>Compensation package management. Management of regular and one-time rewards.</li> <li>Calculation of premiums. Monitoring of current indicators of remuneration and amounts determined by the grade for employees.</li> <li>Preset workflows for negotiating premiums and reward changes to inform process participants. Informing employees on the results of the calculation.</li> <li>Budgeting and modeling and rewards.</li> <li>Determining the dependence of the level of remuneration on efficiency.</li> <li>Analytical reporting.</li> </ul>

## (Module: Compensation Management)

Source: Based on Adaptation of Epicenter K Opportunities

Module "SAP Jam" for implementation in Epicenter K, LLC is obtained at the Table 3.8.

Table 3.8

## SAP SucessFactors modules for implementation in Epicenter K LLC

## (Module: SAP Jam)

Module	Characteristic	Key features of the SAP Success Factors module
SAP Jam	allows you to create corporate social networks of the company, providing employees with the opportunity of informal communicati on for joint solving business problems.	<ul> <li>Internal social platform for operational collaboration. Collaboration on projects from different places.</li> <li>Calendars and events, creating schedules.</li> <li>Nomination and discussion of ideas.</li> <li>Knowledge management. A single information space designed for communication in groups: informing and discussing, exchanging documents, videos.</li> <li>The solution can be used, including for partners and external users.</li> <li>Includes templates for organizing training, information, mentoring, surveys.</li> <li>Accelerates the processes of hiring, adapting new employees, optimizes performance management through collaboration.</li> <li>Non-material incentives in the corporate social network and on the home page of each employee.</li> <li>Available from mobile applications.</li> <li>Reporting by groups: activity of creating content, involvement, employees in the group, use of content. Employee Activity Ratings.</li> </ul>

Source: Based on Adaptation of Epicenter K Opportunities

Module "Workforce Analytics, Workforce Planning" for implementation in Epicenter K, LLC is obtained at the Table 3.9.

Table 3.9

# SAP SucessFactors modules for implementation in Epicenter K LLC (Module: Workforce Analytics, Workforce Planning)

Module	Characteristic	Key features of the SAP Success Factors module
Workforce Analytics, Workforce Planning	The HR Analytics module expands the use of big data in HR operations and allows you to strategically apply information about employees to improve business performance. The module makes HR analytics simple and accessible for HR specialists, analysts and business partners, so they can quickly and accurately find answers to the most important questions about personnel and influence decisions on personnel and the company as a whole. Reliable integrated database for working with data. Convenient and clear metrics and definitions. Visualization of interactive analysis data, reports and dashboards. The "Personnel Planning" module provides personnel planning, so that the company has the right people with the right skills at the right time for the right money to effectively complete assigned tasks. With proper planning, you minimize the risks associated with the implementation of a business strategy.	<ul> <li>Easily create reports and dashboards in PDF, Word and Excel.</li> <li>Dynamic process reports.</li> <li>Access to a library of predefined talent metrics and benchmarks. View metric descriptions and contextual guidelines for interpreting results.</li> <li>Definition of performance indicators and plans to achieve corporate goals.</li> <li>Analysis and forecasting of trends in metrics and measurements, including the number and movement of personnel.</li> <li>Using built-in benchmarks to compare organization metrics and the like.</li> <li>Integration with data from various systems (basic personnel systems, talent management, motivation, finance, etc.), to show how investment in staff affects the performance of the company.</li> <li>Filtration and segmentation of metrics by dimensions such as gender, age; by such characteristics of the post as job duties, length of service and salary; as well as hierarchy levels such as organizational structure, location, or management relationships.</li> <li>Analysis of staff engagement, ensuring diversity, work efficiency and staff turnover using interactive HR analytics tools.</li> <li>Operational planning of the number of employees taking into account changes in changing business conditions.</li> <li>Strategic workforce planning. View, evaluate, and develop staffing needs to support organizational strategies and goals.</li> </ul>

Source: Based on Adaptation of Epicenter K Opportunities

SAP ERP Human Capital Management (SAP ERP HCM) is the most fully functional and reliable HR system for optimizing HR processes. It allows you to combine all the business processes of personnel services within one information space aimed at attracting employees, retaining and motivating them, communicating strategic goals to each employee and obtaining effective management reporting in all HR areas.

### 3.2 Evaluation of the proposed measures effectiveness

Thus, with the help of SAP technologies, "Epicenter K" LLC will be able to improve its personnel policy in accordance with the best world practices, reduce costs, attract and retain the most talented specialists in the company. Effective support from information technology helps to optimize the work of personnel services and, as a result, increase employee loyalty and motivation. Approximate costs (the final amount can be found only upon the direct arrival of specialists in the company) for the implementation of the SAP SucessFactors module for "Epicenter K" LLC will be projected at 32'300 dollars (801'363 UAH).

This is quite a sum, however "Epicenter K" LLC, part of the Epicenter group of companies (both based in Kyiv) and developing a network of eponymous hypermarkets in Ukraine, in 2015 increased revenue by 19.3% compared to 2017 and it amounted to UAH 27.9 billion.

Below in the table 3.10 shows the calculation of the economic impact of the implementation of the module SAP SucessFactors in the activities of the hypermarket "Epicenter K" on the street. Bratislava, 11. Generally speaking, economic efficiency refers to a market outcome that is optimal for society. In the context of welfare economics, an outcome that is economically efficient is one that maximizes the size of the economic value pie that a market creates for society. In an economically efficient market outcome, there are no available Pareto improvements to be made, and the outcome satisfies what is known as the Kaldor-Hicks criterion. Pareto efficiency is when every economic good is optimally allocated across production and consumption so that no change to the arrangement can be made to make anyone better off without making someone else worse off.

# Determination of the planned economic effect of the implementation of the SAP SucessFactors module in the activities of the Epicenter K hypermarket

Indicator	Calculation algorithm	Period, years					
Indicator	Calculation algorithm	2016	2017	2018	2019		
Revenue from sales, ths. UAN	R	3337,7	3661,2	3473,4	3826,6		
Net profit, ths. UAN	NP	336,6	447,9	632,1	896,1		
Profitability of implementation	P	10,0	12,2	18,1	25,6		
Profitability sensitivity from implementation to reduction of payroll	RP	ATEN	KNY	ELEV	2		
Profitability of sales taking into account the reduction of the payroll fund, %	Prp	KKK K			18,4		
Revenue growth rate, units	Gp	TEK	X		1,02		
Planned net profit, ths. UAN	NP p = R*(Pp + RP)*Gp	HTE			659,1		
Increase in net profit due to reduction of the wage bill, ths. UAN	Rp. NP = NP n- NP	X KHI			27,04		
Savings on the payroll fund, ths. UAN	S	EY			72000		

Source: Predicted based on the information above

A key point to understand is the idea that economic efficiency occurs "when the cost of producing a given output is as low as possible". There's a hidden assumption here, and that is the assumption that all else being equal. A change that lowers the quality of the good while at the same time lowers the cost of production does not increase economic efficiency. The concept of economic efficiency is only relevant when the quality of goods being produced is unchanged. Determining the economic effect is based on the achievement of savings in the cost of remuneration of employees of the personnel department IIIa "Epicenter K" LLC due to the dismissal of several people (the introduction of the system will reduce the number of employees by 3 persons). In connection with this, the reduction of the annual payroll fund in 2019 is expected in the amount of 72.0 thousand UAH.

So, we can say that the introduction of the automated module SAP SucessFactors in the activities of the hypermarket "Epicenter K" will give an opportunity in 2019 to earn an additional net profit in the amount of 27.04 thousand UAH. The profitability of the implementation will increase by 2%.

This is why many organizations are coming to the realization that the first step in Agile transformation is their HR systems. SaaS based architectures like SAP SuccessFactors enable HR teams to take a staged implementation approach that maximizes ROI and agility. Worksoft specializes in helping hypermarket "Epicenter K" make the transition from legacy HR systems to SuccessFactors and enables "Epicenter K" LLC to:

- gain value from SAP SuccessFactors to drive business impact

- optimize user experience, improve retention and increase employee engagement

- ensure business continuity, lower risk with operational efficiencies and quality assurance.

At the same time, cloud-based HR solutions provide a host of advantages, including fast adoption, lower TCO, and less reliance on IT. Explore other benefits – and learn about the technical capabilities and expertise that make us uniquely qualified to support your journey to the cloud.

"Epicenter K" LLC breaks out its talent tools into modules in its SAP SuccessFactors HCM Suite. Capabilities include the traditional "four pillars" of talent management: recruiting, learning and development, performance management and compensation management. The suite also has onboarding and time and attendance software, as well as modules for workforce planning and people analytics.

SAP SuccessFactors allows HR to drive "Epicenter K" LLC forward by providing valuable workforce data. This powerful visualization tool allows decision makers to gain insight into their workforce and make informed or even predictive decisions, thereby improving productivity, revenue, and employee satisfaction.

Traditionally, HR of "Epicenter K" LLC was focussed on personnel management and basic labour related issues. However, for HR to have a positive impact, there needs to be a bird's eye view of operations. HR today is more diverse focusing on recruitment, employee morale, maintenance of benefits administration, honing talent and maximizing employee potential.

Therefore, summarizing, it is necessary to carry out further automation of management processes in the field of personnel management and in the sphere of customer service, which significantly improves the efficiency of use of labor resources and material and technical base of the enterprise.

Considering the considerable volumes of free sources of financing, Epicenter K, LLC is faced with the necessity of making capital investments, which can be aimed at further modernization of trading equipment and customer service processes both in the trading room and in relation to online trading. In the growth of mobile adoption in the online financial space, trading your brokerage account from an online platform still has plenty of benefits. Some of these benefits include a wide variety of order types for options traders, comprehensive charting tools for day traders, the ability to create bond ladders, and educational experiences that help make you more prepared to invest and trade. The winners in this category had impressive online trading portals that provide with an abundance of features to help succeed.

### **CONCLUSIONS AND RECOMMENDATIONS**

Based on the research conducted, the following conclusions can be formulated:

1. In modern times and the realities of the market economy, information is considered as increasingly being as the one of the most important factors in the proper management and operation of the company. There are many definitions of the concept of "information" depending on different approaches to it in various scientific fields. In the theory of data processing information systems, information is identified with any data, that is, it is interpreted as a collection of data about anything or anyone. When we talk about information from the standpoint of the task automated data processing theory, it has a different tint – it means that we should get "ready / finished" information from the "raw" information

Generally Ukrainian scientists determine the "information system" concept as the same as "information management system (IMS)" in their works and don't use such concept as "management information system (MIS)". It means that, when they write about information systems, they mean that they are talking exactly about information management systems. So, it is important to note that in foreign sources the concepts of "management information systems" (MIS) and "information management systems" (IMS) are the same and different authors use both of the concepts while the meaning is the same

2. In information systems, there is a greater emphasis on tools, while MIS places more emphasis on business processes and operations. Core task of MIS is to determine business requirements for information systems (information systems can be perceived from different points of view, however, in all cases, they refer to the systems that are commonly grouped into five categories: Office Information Systems (OIS), Transaction Processing Systems (TPS), Management Information Systems (MIS or Information Management Systems), Decision Support Systems (DSS), Executive Support Systems (ES) – so information management system is only a part of an information systems).

The purpose of the information management system is to set performance standards and alert the manager to deviations from those objectives in time to take corrective actions. The most popular foreign developers of information management systems are SAP, IBM, Oracle, Zoho, PeopleSoft.

Implementation of such automated information management systems as "Parus", "1C: Enterprise", Oracle Applications, "HRM", etc. allows in tens and hundreds of times increase the speed and quality of economic and managerial information processing with a minimum use of human resources. Cumbersome paper workflow was replaced with the multifunctional and operational electronic process. This made it possible to provide a high degree of production flexibility, its ability to instantly respond to market needs.

3. To effectively deliver the information needed to decision makers, IMS needs to have the necessary components to collect, process, store and retrieve the information whenever it is needed. the most popular foreign developers of information management systems are SAP, IBM, Oracle, Zoho, PeopleSoft.

If we talk about Ukrainian market, Ukrainian companies, it could be 1C: Enterprise (Trade Management Configuration if we talk about trading), SET Retail Pro, SM Complex Retail, office software MS Office-XP, etc.If we talk about trading enterprise functioning in general, so for warehouse logistics are responsible the warehouse management systems (WMS), for transport logistics – cargo transportation management system (TMS – Transport Management System); tasks of interaction with the outside world are solved by special systems of electronic data interchange (EDI – Electronic data interchange); the tasks of maintaining customer loyalty and marketing objectives are solved jointly in commodity accounting systems or the corresponding modules of ERP-systems and in systems of clients relations management – CRM.

4. Epicenter K (one of the stores subject to the study of final qualification work), having chosen a strategy of leadership in the retail market of format "from and to" in Ukraine, became the leader in the retail market of Ukraine with domestic

investments, numbering 51 operating shopping center in different regions of Ukraine, starting from the city of Kyiv, ending with the district centers.

All internal documents in the Epicenter K hypermarket are formed in Potamus system, developed by ASU-EpicentrK in 2015, and contain all the necessary functionalities for working with documents.

To accomplish the tasks set for Epicenter K LLC, the shop uses an automated Potamus program. Potamus is a Shareware software in category (2) developed by ASU-EpicentrK in 2015. Potamus runs on the following operating systems: Android/Windows.

5. In 2016-2018, the profitability of Epicenter K hypermarket was constantly increasing. In 2017, it increased by 2.86%, in 20108 – by 8.09%. There was also a similar tendency to increase other indicators of enterprise efficiency. During last years Epicenter demonstrates good profits (increase of official profitability), the point to mention here – it is highly possible that part of Epicenter-K expenses are payments to related companies (including rental payments to Epicenter-N), so, according to our estimations) group profitability is higher.

SAP is a market leader in enterprise applications that helps organizations of all sizes and specializations manage their business more efficiently. Despite the fact that the SAP program is extremely complex, many managers of large enterprises appreciated it. The SAP system is not just a program; it helps make decisions that allow you to change business processes, which in turn leads to a significant increase in profits.

6. Proposal for LLC "Epicenter K" is to implement the SAP program, namely, the modular architecture of SAP SuccessFactors, which allows to quickly put into operation the necessary modules in the required sequence in the field of personnel management.

The introduction of the automated module SAP SucessFactors in the activities of the hypermarket "Epicenter K" will give an opportunity in 2019 to earn an additional net profit in the amount of 27.04 thousand UAH. The profitability of the implementation will increase by 2%.

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# **APPENDICES**

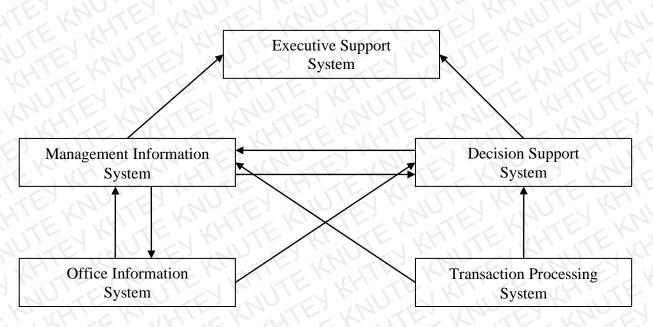


Fig. A. Classification of information systems

Source: [23, P. 39]

## Appendix D

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Fig. D.1. Work on ordering in the order book program "AZK" in Potamus

Source: Received from Epicenter K hypermarket staff



Fig. D.2. Product Order Form on Potamus

Source: Received from Epicenter K hypermarket staff