Київський національний торговельно-економічний університет
Кафедра менеджменту

ВИПУСКНА КВАЛІФІКАЦІЙНА РОБОТА

на тему:

«Розвиток інформаційних систем управління на підприємстві торгівлі»

(за матеріалами ТОВ «СНВ Плюс»,
Київська обл., Білоцерківський район, м. Узин)

Студента 2 курсу 8ам групи
спеціальності
073 «Менеджмент»
спеціалізації
«Торговельний менеджмент» _____ Клюєва
Дмитра Сергійовича

Науковий керівник:
кандидат економічних наук,
доцент _____ Присяжнюк
Анна Юріївна

Гарант освітньої
програми:
доктор економічних наук,
професор _____ П’ятницька
Галина Тезіївна

Київ 2018

Kyiv National University of Trade and Economics
Department of management

FINAL QUALIFYING PAPER (PROJECT)

on the topic:

«The development of management information systems at the trade enterprise»

(by the materials of LLC «SNV Plus»,
Uzyn city, Bila Tserkva district, Kyiv region)

Student of the 2d year, group 8ам
specialty
073 «Management»
specialization
«Trade Management» _____ Kliuiev Dmytro

Scientific adviser:
Candidate of Economics,
Associate Professor _____ Prisyazhnyuk Anna

Manager of the educational program:
Doctor of Economics,
Professor _____ Piatnytska Galyna

Kyiv 2018

Київський національний торговельно-економічний університет
Кафедра менеджменту

РЕФЕРАТ
ВИПУСКНОЇ КВАЛІФІКАЦІЙНОЇ РОБОТИ

на тему:

«Розвиток інформаційних систем управління на підприємстві торгівлі»
(за матеріалами ТОВ "СНВ ПЛЮС", м. Узин)

Студента 2 курсу 8ам групи
спеціальності
073 «Менеджмент»
спеціалізації
«Торговельний менеджмент» _____ Клюєва
Дмитра Сергійовича

Науковий керівник:
кандидат економічних наук,
доцент _____ Присяжнюк
Анна Юріївна

Київ 2018

Kyiv National University of Trade and Economics
Department of management

SUMMARY

TO THE FINAL QUALIFYING PAPER (PROJECT)

on the topic:

«The development of management information systems at the trade enterprise»

(by the materials of LLC «SNV Plus»,
Uzyn city, Bila Tserkva district, Kyiv region)

Student of the 2d year, group 8ам
specialty
073 «Management»
specialization
«Trade Management» _____ Kliuiev Dmytro

Scientific adviser:
Candidate of Economics,
Associate Professor _____ Prisyazhnyuk Anna

Kyiv 2018

SUMMARY

The final qualifying work done on the topic:

"The development of management information systems at the trade enterprise "

*The structure of the work.*The work presented on 57 pages of main text, including contains 13 tables and 6 figures; 12 appendexes, bibliography includes 55 sources (including Internet resources).

Work carried out by the materials of LLC «SNV Plus» (c. Uzyn).

The subject of study is the management processes of LLC «SNV Plus» based on the formation and development of information systems and technologies.

The purpose of the study is the research is to develop recommendations on forming enterprise management system based on the use of information technology to improve the efficiency of it's management.

According to the established objectives set list of tasks for implementation of the process of scientific research:

– reveal the essence, goals and objectives of management information systems at the enterprise;

– to study the evolution of management information systems at the enterprise;

– identify methods of information provision process management at the enterprise;

– uncover organizational and economic characteristics of the enterprise;

– identify factors influencing the development of management information systems of LLC «SNV Plus»;

– analyze the current development of management information systems in the company of LLC «SNV Plus»;

– identify priority directions of development of management information systems at the enterprise;

– predict the efficiency improvement of management information systems in the company of LLC «SNV Plus».

The results can be used and implementation on LLC «SNV Plus».

Year of work execution – 2017-2018.

Year of graduation – 2018.

Анотація

випускної кваліфікаційної роботи, виконаної на тему:

«Розвиток інформаційних систем управління на підприємстві торгівлі»

(за матеріалами ТОВ «СНВ ПЛЮС», м.Узин)

Випускний кваліфікаційний проект (роботи) присвячено дослідженню розвитку інформаційних систем управління на підприємстві торгівлі. У роботі вирішено важливе науково-практичне завдання щодо подальшого розвитку теоретичних основ, методичних і практичних пропозицій та рекомендацій з удосконалення процесу розвитку інформаційних систем управління на підприємстві торгівлі.

Досліджено динаміку основних показників діяльності підприємства протягом 2015 – 2017 років з метою розробки програми розвитку інформаційних систем управління на підприємстві, оцінено ефективність запровадження інформаційних систем на підприємстві торгівлі.

Ключові слова: інформаційна система, управління бізнес-процесами, готовність підприємства до змін, ефективність проведення змін.

Annotation

final qualifying work done on the topic:

"The development of management information systems at the trade enterprise "

(by the materials of LLC "SNV Plus", c.Uzyn)

Final qualifying paper (project) dedicated to the research of information management systems at trade enterprise. The paper decided to important scientific and practical tasks for the further development of theoretical bases, methodological and practical proposals and recommendations to improve the process of information management systems in trade.

The dynamics of the main indicators of the company for 2015 - 2017 years to develop a program of management information systems at the enterprise, the efficacy of the implementation of information systems in trade.

Keywords: Information system, business process management, enterprise readiness for change, the effectiveness of the changes.

CONTENTS

INTRODUCTION

Actuality of theme. In modern conditions of effective management is a valuable resource of the organization, along with the financial, human and other resources. Thus, improving the efficiency of administrative activity is one of the areas of improvement of the enterprise as a whole.

Actuality of theme: final qualifying determined that efficiently manage all types of enterprise resource businessman giving it information technology. It seems that the key to the success of the company director is a need for proper and timely management decision on the concentration of resources.

Formulation and implementation of information technology and facilities management industry organizations in Ukraine to date occurs spontaneously and not always effective. This is due to the following reasons:

– kept functional inconsistency in the actions of various structural units of enterprises with their automation and information and ambiguity of understanding the nature of different indicators Manager - Users IS / IT and their developers;

– no coordinate the implementation and use of IS / IT enterprise between departments and branches that may be geographically distant from each other;

– in subdivisions and branches use different nespryazhuvani each other IS / IT (differing in basic capabilities and functionality, various degrees of automation of business processes, different developers, etc.) that is limiting opportunities for horizontal integration and inability, for example, automatically consolidated statements , rationality logistics processes and so on.

These factors limit the increase in effective management of business and do not fully exploit the potential of the exploited information systems.

The management-based information systems were considered in the works of many local and foreign scientists: M. Hryroryeva, V. Kuzyakina, O. Matvienko, V. Sergeev, V. Trofimov and others.

Research in management information provision made deep enough in the writings of scholars V. Hribaurova, A. Kadushina, A. Kar-Minaho, N. Mikhailov, V. Nemchinov, P. Nestorova.

Noting the contribution of individual researchers in discovering the theory and practice of information management, it should be noted that so far there is no unified and systematic understanding of the ways of forming and evaluating information tools in management. The scientific literature also not established conventional approach to problem solving integration IS/IT core business processes of the organization. As a result, in professional literature does not address the impact on IT efficiency management.

These reasons and facts are determined the choice of research topic final qualifying, based on it's relevance from a scientific point of view and high practical value.

Object of research – information system of LLC «SNV Plus».

Subject of research – management processes of LLC «SNV Plus» based on the formation and development of information systems and technologies.

Purpose of research is to develop recommendations of forming enterprise management system based on the use of information technology to improve the efficiency of it's management.

Tasks:

– reveal the essence, goals and objectives of management information systems at the enterprise;

– to study the evolution of management information systems at the enterprise disclose their classification;

– identify methods of information provision process management in the enterprise;

– uncover organizational and economic characteristics of the enterprise;

– identify factors influencing the development of management information systems of LLC «SNV Plus»;

– analyze the current development of management information systems in the company of LLC «SNV Plus»;

– identify priority directions of development of management information systems at the enterprise;

– predict the efficiency improvement of management information systems in the company of LLC «SNV Plus».

The theoretical and methodological basis of the study were the fundamental scientific work of scientists and experts in the development of management strategies using information systems and technologies, including - V. Hour, John Zachman, N. Mayiseyevoyi, T. Rodkin, H. Salomatyna, A. Scheer and others.

The study used methods such as the method of system analysis, classification method, statistical, tabular, graphical, descriptive methods.

Developed in the final qualifying project allows for better management based on the transfer of key business processes of the organization into the space efficiently functioning information technology.

The structure of the work. Thesis consists of an introduction, three chapters, conclusions, bibliography that includes 55 names and appendexis.

PART 1

THE THEORETICAL BASIS OF THE DEVELOPMENT OF INFORMATION MANAGEMENT SYSTEMS AT ENTERPRISE

1.1. The essence, goals and objectives of information management systems at the enterprise.

System – a unit created from parts and components interacting to purposeful activity [3]. As elements of information system produce technological elements (information model software system, base) and administrative items (instructions for use, technical support software, user training regulations) [19, p.201].

Information system provides: hardware; methods, models, algorithms, data processing programs; documentation interaction, technical means; law operating information systems.

So many elements of the information system can be divided into four main interdependent elements (Fig. 1.1).

Information as a management tool, especially its production and use of propagation studied R. Coase, G. Hodgson. . Arrow allocated basic postulates:

– receipt and transmission of information or signals are certain costs as they have an economic value;

– different individuals belonging to different information [45, p.156].

Consider the current classification of information systems related to organizational management companies (Appendix G) [30, p.48].

The first type. It includes decorative systems designed to prepare documentation. Most of these data are used by a limited number of people.

The second type. It presented information and referral system that can improve the effectiveness of training solutions.

The third type. It consists accounting system focused on serving the interests of the state.

Fig. 1.1

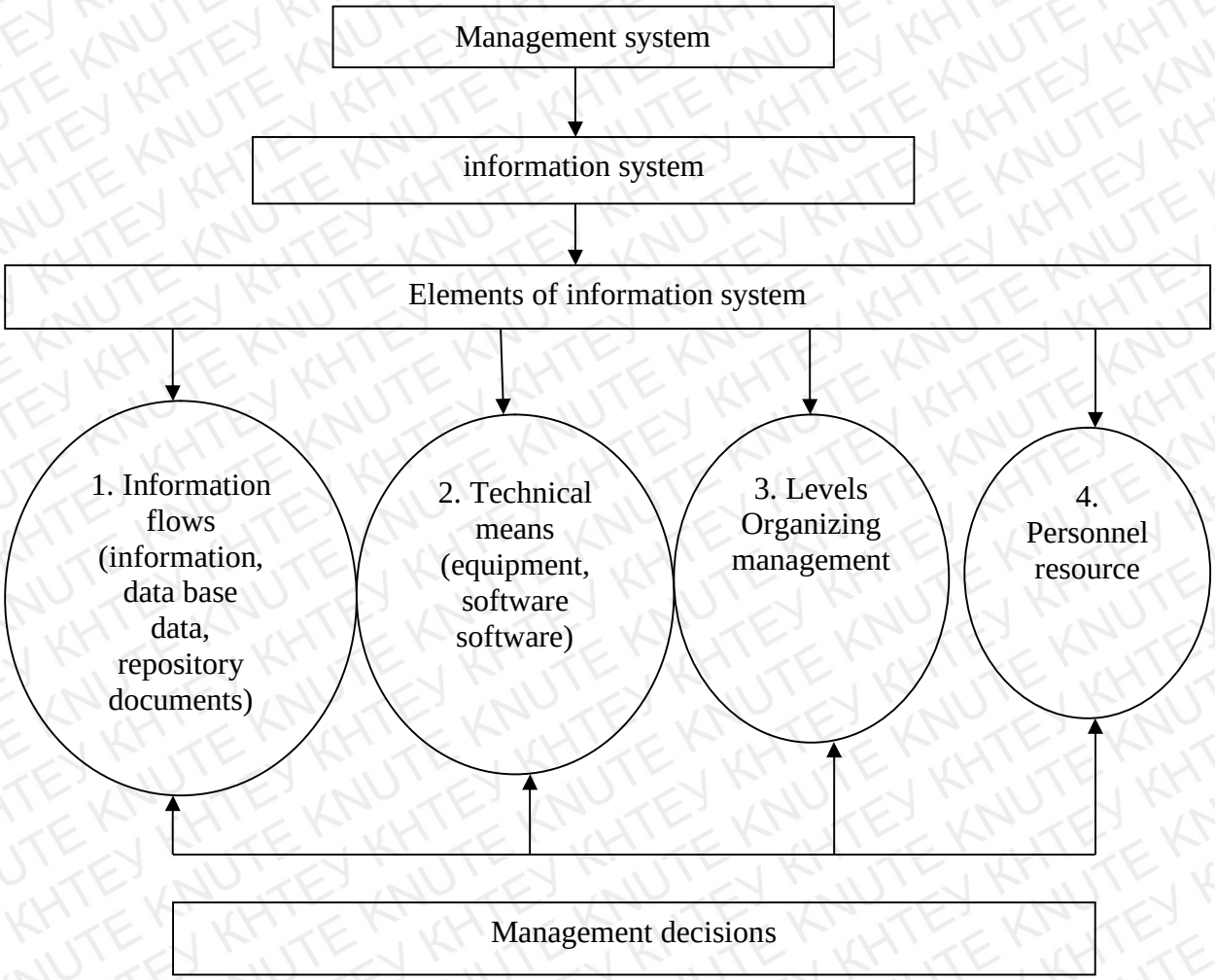


Fig.1.1. Information system

[taken from the source 5]

The fourth type. Systems for the design, production planning, business analysis. They should closely interact with the system of collecting primary information and does not overload the system.

The fifth type. It is represented by systems management and administration, providing document management for the operation of the workforce.

The sixth type. This class consists comprehensive information management system on the scale of a company or corporation, include all of the components listed above.

The aim is to create information technology information resource with quality information product that meets user requirements. Methods of information

technology is the methods and techniques of modeling, design and implementation of data processing. As a means of information technologies applied mathematical methods and models problem solving, data processing algorithms, tools for modeling business processes, data, information systems design, programming, own software products, a variety of information resources, hardware data [33, p.43].

Thus, IT can be understood as a set of methods and ways to implement information security.

Information System (IS) – the structural organization of the movement of data and of information by various means (including hardware and software) that supports all processes provide certain information systems [15, p.83].

In practice IS refers mainly to the physical layer as software. However, it should be noted that not all software is an information system even in the narrowest sense of the term (IS). For example, application software that supports processing only, not related to information systems (for ex., Word, Outlook).

Processes that provide job information system for any purpose, can be presented as a scheme consisting of units (Fig. 1.2).

Fig. 1.2

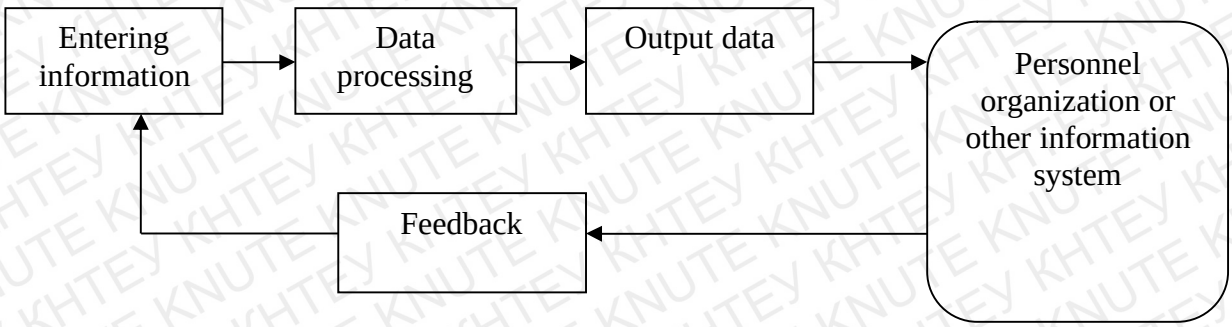


Fig.1.2. Processes in the information system

[Taken from the source 11]

Objective information systems – production necessary to organize information, create environments and technical information for the management of the organization.

Summarizing all the above said, we accept that this thesis project we will mainly use the term "information system", focusing on the automation of

information flow system, like any system of management based on information security. Information technology is the basis of information systems and collect, analyze and bring to the user in the form convenient to the highest quality and detailed information in an interesting area for them.

1.2. Evolution of information management systems at the enterprise.

To understand a rough picture of the development of information systems around the world are invited to consider the basic steps for using IS for nearly half a century of history (tab. 1.1).

Table 1.1.

Stages of development of information systems

Period	Concept Use	Species Information System	The purpose of use
1950–1960	Paper flow Records	Information processing system records in electro-mechanical accounting machines	Increasing the speed of processing documents. Simplification of procedures for processing reports and payroll
1960–1970	Basic services generate reports	Management information System production directly	Accelerating the process of reporting
1970–1980	Management control sales (sales)	Decision Support Systems. Systems for the top management personnel	Finding the most rational decisions
1980–present	Summary - strategic resource, providing competitive advantages	Strategic information systems. Automated offices	Enterprise storage position and the development of its competitive advantages

[Based on the source 7]

Information Systems first introduced in the 1950s. Even then they were designed to handle billing and payroll and accounting implemented on electromechanical counting machines.

The sixties are marked change in relation to information systems. Information began to be used for periodic reporting in many ways. To do this, organizations need general-purpose computer equipment, can serve many functions, not just process payments and figure salary.

In the 1970's – early 80's information systems are beginning to be widely used as a means of management control, supporting and accelerating decision-making.

By the late 80's, the concept of using information systems was changed. They are a source of strategic information and used at all levels of the organization of any type. Information systems of this period helps organizations succeed in their business, create new products and services, find new markets, to provide worthy partners, organize output at low cost.

After reviewing the stages of development of IS in general need to consider in more detail the evolution of information systems.

Work on the creation of ACMS–based domestic universal digital computers were launched on the initiative of Academician Glushkov Institute of Cybernetics of the USSR in 1963–1964 years.

In 1965 V. Glushkov was put forward the concept of a specialized operating system designed for systems with a regular flow problems. As part of software ACMS "Lviv and Kuntsevo" based on domestic cars of the second generation series of "Minsk" and "Ural" were developed management software schedule tasks pretreatment information and multiprogram execution mode applications.

Creating a major ACMS system and required the use of optimization methods. Work in this area were carried out at the Institute of Cybernetics, USSR Academy of Sciences under the guidance of V. Mihalovicha. They led to the creation of Ukrainian school optimization techniques of which have been recognized not only in the USSR but also abroad. In 1960–1962 was proposed general algorithmic scheme of sequential analysis options, which included a separate set of computational methods dynamic programming. This scheme was applied in solving the design of roads and railways, electricity and gas networks.

A new stage in the development of ACMS came in the second half of the 70s. These were integrated ACMS system, which seamlessly integrated into a single unit task aided design of new products (CAD), technological preparation of production (ASPP), test automation manufactures and automation of

organizational business management (ACMS system in the former, functional sense). The technical basis of the new generation ACMS amounted tend models UCS, SM computers. Integrated ACMS was developed and introduced at an aircraft factory and other enterprises of the defense complex of Ulyanovsk.

As for the situation after the collapse of USSR, currently suggests that these information systems that are currently used in the CIS was formed under the strong influence of Western technology, to say the least, these systems is a localized version of the European and American systems [15].

1.3. Methods of information support of the management process at the enterprise.

Information underpins the management, because it contains the information necessary to assess the situation and decision–making and governance involves influence on the object. This effect is done by issuing control commands, developed by analyzing available information and characteristics of the situation.

Currently, the top management often requires that they found new management concepts, effective for the global market in terms of economy, customer oriented. It is important that kept trade secret organization. Modern science has found such methods, using them can be built efficient systems management. This methods or approaches MRP. MRP II and ERP – a formalized set of concepts and processes, which allows a description of how the company should work. These methods are purely structural, they can be seen as a set of instructions (algorithm) [5].

Method of MRP (Material Requirement Planning) - was designed for the best production management, management of warehouse, eliminating disruption of supply of raw materials or supplies more than normal. MRP is involved in planning and manages the production cycle, from supply of raw materials and components to meet the needs of end users. The method needs planning material includes a description of the activity, considering it as a stream of related orders.

MRP implementation method reveals the company processes and accounting management, performance consistency and contains recommendations for implementation (algorithms). Project planning process creates purchase orders and/or domestic production of necessary materials and components. Application methods MRP business management plan to optimize supply parts, reducing production costs and increasing efficiency. As a complement to it introduced the concept of MRP II (Resource Planning production – Manufacturing Resource Planning) – forecasting, planning and control of production, which currently lasts throughout the cycle from procurement of raw materials to shipment of goods to the consumer.

MRP II is aimed at efficient management of all resources and manufacturing facility provides the solution of problems of enterprise planning in physical units, financial planning in terms of money, modeling capabilities of the company.

With the growth of computing power, the introduction of MRP II/ERP, finding new methods of management in a competitive environment since the mid-1990s on the basis of MRP II/ERP systems, there are a new class, which are called "advanced planning» (Advanced Planning/Scheduling – APS). These systems use economic and mathematical methods for solving planning to lower the role calendar planning regulations on the production cycle. APS are some optimization modules which may include, in addition, to traditional MRP–planning.

In determining the duration of the production cycle had not laid the average time spent in line items, which undoubtedly leads to increased productivity and reduced work in progress. Especially effective for a multiple complex production. However, it requires a significant increase in professional level management personnel. ERP-systems are constantly improved. The methodology MRP II/ERP stands three sections.

The first section is the methods and means, proven practices and standards embodied in the form. During the contract government can be assured of a reasonable expenditure of budgetary funds, and that made control of deadlines and actual costs.

Section two – nothing like the methods and techniques that are optional. They are a deeper analysis of structures. This methodology is moving in the preparation of planning basic plan of production and MRP algorithms formation of MRP, the rules of priority at management level production plant.

The third section methods MRP II/ERP – it is something new that contribute to the basic system manufacturers software. Implemented on the basis of new information technologies are a "know–how" of developers. It is in this layer can be detected significant differences in the products of different companies. New technologies have a major impact on the effectiveness of building large information systems, contributing to a high level of efficiency in implementing management systems such MRP II/ERP in modern enterprises.

Thus, computerized management information system is a link in the development of business strategy, change management, organization of purposeful work with the staff. In addition, these systems play an important role in the successful implementation of the strategy. The core forming CMIS perspective is the concept of integrated automated systems targeted to support business management. It seems that the company receives a direct effect of the introduction of modern technology, which goes to reduce the processing time information on customer service and other business processes. In addition, reduced production time, increases productivity, reduces costs in non-production sphere, excluded the possibility of errors significantly reduced risk.

Timely implementation of the enterprise automated control systems gives it more flexibility in the future development and provides an opportunity to look more attractive to potential investors. Implementation of IT systems in the company – is to increase its efficiency and competitiveness. Information technology and systems is a management tool, which he used to coordinate and control the course of business processes in the enterprise.

Conclusion to part 1

During the writing of this chapter the author presented the following results:

Information component is the main link between the managed and managing enterprise system. Some authors understand information systems as a set of mechanisms to ensure the full implementation of the information process, ie organizational and technical system that is designed to perform data–processing operations or providing data–processing services to meet the needs of management and its users – management, external users (investors, suppliers, customers) using and/or creating information products.

Information systems at the physical level can be considered a form of implementation of information technology and treated as "the means by which organizations and people using appropriate technology for this, collect, process, store, use and distribute information.

Thus, the information system should support all stages of the information process. As a result, at the conceptual level, this system will provide information of the organization or supply chain, that is conceptual information flow within the system regardless of it’s automation.

Information resources required for management decisions, which are an important part of the system management. Activity of any enterprise associated with managing processes, such as the collection, storage, processing, transmission, storage.

Information flows coming from all structural divisions, form information system, which, like any other system that integrates facility management and controls. Improving information systems facilitates the speedy achievement of development goals and objectives and stable operation.

Also note the following types of IS, as corporate information systems that cover all levels of organizational management, for example, ERP, SCM, CRM; marketing information systems designed for information management on the state of the environment. These information flows connect different parts of the enterprise (production, logistics, accounting, etc.).

PART 2

DIAGNOSTICS OF THE DEVELOPMENT OF INFORMATION MANAGEMENT SYSTEMS AT THE ENTERPRISE LLC «SNV PLUS»

2.1. Organizational and economic characteristic of the enterprise

LLC «SNV Plus» registered in 27.02.2006 year.

Registered address: 09161, Kyiv region. Belotserkovsky district, Uzyn city, Factory str., 2 B.

At its organizational and legal form of LLC «SNV Plus» is a limited liability company.

The company operates in accordance with the constitution and other laws of Ukraine. The Company is a legal entity and owns separate property, which accounted for on its own balance sheet has civil rights and obligations.

Property relations and other members of society are based on the charter, which reflects the main activities of the organization with priority for the company are:

- production of plates, sheets, tubes and profiles made of plastic (basic);
- production of metal doors and windows;
- activities of intermediaries in trade of a wide range;
- wholesale wood, construction materials and sanitary equipment;
- retail sale of other unused goods in specialized stores.

Company for the production of plastic windows intended for the manufacture of window and door designs.

Company’s services:

- production and installation of windows (products);
- production structures with glass balconies;
- production input groups of aluminum, fiberglass etc.;
- delivery and snstallation of dealers and retail, processing slopes;
- construction waste that remains after installation;
- processing balconies and more.

The organizational structure of LLC «SNV Plus» is presented in Appensix B.

Based on the organizational structure, we can conclude that LLC «SNV Plus» is linear management structure, characterized by the fact that all functions are concentrated in linear levels, and each employee is subject to the same manager and receives instructions from only one leader. This eliminates get subordinates and conflicting with each other undesignated tasks and orders, raises liability for head results.

Consider the main financial indicators of the results of Llc. "SNV PLUS" for 3 years, presented in table 2.1.

Table 2.1

Financial Performance of LLC «SNV Plus» for the 2015-2017, th. UAH

Characteristic	2015	2016	2017	Deviations +/- th. UAH		
				2016 / 2015	2017 / 2016	2017 / 2015
Net income (revenues) from sales of products (goods and services)	660	715	635	55	-80	-25
Other operating income	44	46	76	2	30	32
Total revenue	704	761	711	57	-50	7
Cost of products (goods and services)	-580	-589	-589	-9	0	-9
Other operating expenses	-65	-58	-58	7	0	7
Total costs	-645	-647	-647	-2	0	-2
Financial result before taxation	59	114	64	55	-50	5
Income tax	10.6	20.5	11.5	9.9	-9	0.9
Net profit (loss)	48.4	93.5	52.5	45.1	-41	4.1

[Financial statements]

Net income (proceeds) from sale of goods (works, services) for 2017 was the lowest and was 635 thousand UAH. Net income for 2016 was the highest result for the period, its amount was715 th. UAH. Rejection of the proceeds from sales of goods of LLC «SNV Plus» for 2017 was negative in relation to that of 2016 (-80 th. UAH.), the deviation from the revenue figure in 2015 was positive and amounted to 55 th. UAH. Overall deviation of 3 years was negative and amounted to 25 thousand UAH.

During the study period led the company profitable activity, that within three years the company made a profit, which was not a steady growth, particularly in 2017 it decreased to 41 th. UAH in relation to 2016, in 2016 in relation to 2015 saw an increase by 45.1 th. UAH. In total for three years profit increased by 4.1 th. UAH.

Appendix H (table H.1) not indicate a fairly stable economic situation at LLC «SNV Plus», as evidenced by fluctuations in revenue from sales of goods of the investigated companies. The positive rate of return of LLC «SNV Plus» designated for the entire analyzed period. Peak profitability of LLC «SNV Plus» accounted for 2016, which amounted to 93.5 th. UAH. The negative value of the indicator during the study period was observed.

Valuation of property companies and sources of its formation are shown in the balance sheet. Balance sheet can be seen as a statement of financial position at the time of the balance sheet (Appendixes C, D).

Coordination factor used to express different relations essentially absolute indicators of financial condition as their linear combinations. With these analyzes changes in the dynamics and horizontal analysis (Appendix H, table H.2).

During the study period an increase in retained earnings 520 th. UAH and reduce additional capital to 90 332 th UAH. In 2017 increased the amount payable for the advances obtained in 92.8% (130 713 th. UAH).

Ratios are divided into distribution coefficients and coordination. Distribution ratio used when you need to determine how much of a particular measure of financial condition is a result that includes its group of absolute figures. Estimates conducted a structural analysis or vertical (table H.3, Appendix H).

Vertical analysis of balance to make a conclusion about the structure of property LLC «SNV Plus» and the source of it’s formation (Appendix J). The structure is characterized by a decrease in current assets proportion of fixed assets (from 81.49% - 2016 to 60.53% - 2017), particularly due to the increase of working capital, whose share during 2017 increased from 18.51% to 39.47%. Perhaps these changes positively affect the dynamics of working capital turnover

performance (in particular, the turnover of stocks and costs) as well as the dynamics of liquidity. In the structure of liabilities during the years 2015-2016, equity prevailed, but in 2017 this figure decreased and amounted to 47.95%, which affected the growth of the share in the same period of borrowing, the share of which increased from 11.38% to 52.05%

A necessary condition for the effective functioning is the existence of the optimal structure of current assets. Efficiency of working capital enterprises characterized by the following indicators:

– turnover ratio – the ratio of sales over a period of products (services) to the average value of current assets;

– load factor – the ratio of the average annual value of current assets to the amount of sales over a period of production (services);

– the duration of one revolution:

$$Ty = \frac{360}{K_y} \quad (1.1)$$

$$Tq = \frac{90}{K_q} \quad (1.2)$$

$$Tm = \frac{30}{K_m} \quad (1.3)$$

where in T_y, T_q, T_m - the duration of the rotation current assets (during the year, quarter, month);

K_y, K_q, K_m - turnover ratio of current assets (by year, quarter, month).

T_{y2015} = 360/0,600 = 600 T_{y2016} = 360/1,159 = 311 T_{y2017} = 360 /0,405 = 889

T_{q2015} = 90/0,600 = 150 T_{q2016} = 90/1,159 = 78 T_{q2017} = 90/0,405 = 222

T_{m2015} = 30/0,600 = 50 T_{m2016} = 30/1,159 = 26 T_{m2017} = 30/0,405 = 74

The presence of growth trends in turnover ratio (reducing load factor), reducing the length of working capital turnover of enterprises indicates optimize their structure and improve the efficiency of their use.

Dynamics performance of working assets of the companyit is advisable to submit the form table. 2.2.

Table 2.2

Performance efficiency of working capital of LLC «SNV Plus» for 2015-2017 years

Indexes	Years			Deviation 2016 to 2015		Deviation 2017 to 2016	
	2015	2016	2017	absolute	relative %	absolute	relative %
The volume of goods (services) th. UAH	43237	78410	51577	35173	81.3	-26,833	-34.2
The average value of current assets, th. UAH	72044	67669.5	127485.5	-4374.5	-6.1	59816	88.4
Turnover ratio	0,600	1.159	.405	.559	93.1	-0.754	-65.1
Load factor	1.67	0.86	2.47	-0.80	-48.2	1.61	186.4
The number of days in the reporting period (year), days	365	365	366	0	0.0	1	0.3
Duration turnover days	608	315	905	-293	-48.2	296	94.1

[Financial statements]

Based on the data table. 2.2 can conclude about the efficiency of working capital, including the largest reversibility observed in 2016 (1.159), which is 93.1% more than in 2015, and the duration of the lowest turnover in 2016 (315 days), 42, 2% less than in 2015. In 2017 there reversibility least 0.405, which is 65.1% less than in the previous 2016, and also on the duration of the largest sales in 2017 – 905 days.

An important aspect of the analysis parameters that characterize the incentive of the personnel of the enterprise is about payroll and productivity (such as volume of goods (services) per one employee).

Analysis of indexes efficient use of manpower investigated enterprise appropriate to submit the form table. 2.3.

Based on the data table. 2.3, we can conclude about the efficiency of human resources in the company, including the most effective labor used in 2016 (5.45 th. UAH), in other years the situation worse, particularly in 2015, the figure was 3.30 th. UAH, that 2.16 th. UAH (65.42%) less than the previous year, while in 2017 this figure was the worst and totaled 2.74 th. UAH, which is 2.71 th. UAH

(49.75%) less than in the previous year 2016.

Table 2.3

Performance efficiency of human resources of LLC «SNV Plus» for 2015-2017 years

Indexes	Years			Deviation, + / -		Rate of change%	
	2015	2016	2017	2016/2015	2017/2016	2016/2015	2017/2016
The volume of goods (services), th. UAH	43237	78410	51577	35173	-26,833	81.35	-34.22
Profit (loss), th. UAH	615	819	841	204	22	33.17	2.69
Average number of employees, persons	361	361	403	0	42	0.00	11.63
Labor productivity, th. UAH	119.77	217.20	127.98	97.43	-89.22	81.35	-41.08
Payroll of th. UAH	13120	14383	18826	1263	4443	9.63	30.89
Flow capacity, th. UAH	0.30	0.18	0.37	-0.12	0.18	-39.55	98.99
Cost efficiency, th. UAH	3.30	5.45	2.74	2.16	-2.71	65.42	-49.75

[Financial statements]

According flow capacity lowest rate in 2016 (0.18) in 2015, according flow capacity lower by 0.12 th. UAH (39.55%) compared to the year 2016, and in 2017 was the highest rate and is 0.37 th. UAH, which is 0.18 th. UAH (98.99%) more than in the previous year 2016. This is due to a drop in productivity in 2017 to 48.08% compared to the year 2016, which increased relative to 2015 to 65.42%.

2.2. Factors of influence on the development of information management systems LLC «SNV Plus».

For the analysis on factors influencing the development of information systems necessary to determine the possible places of occurrence information risks in an industrial plant. Broadly places may make any divisions, departments that use IT-technology that uses hardware and software data link is snternet access.

In terms of system analysis information system is an open system that consists of a set of interrelated information items in which there is receiving, processing, storage and transmission of information required for the effective functioning of the enterprise [23]. All information elements of the system can be divided into subjects and objects of information processes. Subjects favor

employees of the company related to obtaining, processing, storing and transmitting information. The objects are corporate information system (CIS), information resources, data links, software and hardware information systems company.

External information medium enterprises form the objects, entities, processes and environmental phenomena that affect the elements of information system and information environment that is relevant to the company, its business processes.

There are three main ways to harm as a result of enterprise information risk.

First, the use in information quality and reliability which have been violated, can result in damage to the company.

Secondly, there are risks that directly affect the objects of enterprise information system performance and may violate or break objects information system. Such information may make the risk of accident, natural disasters and fires, failures and failure of means loss databases, unauthorized access and so on.

Changing the status of the environment, which affects the efficiency of the company, the third through injury. An example would be the loss of confidential information. Because it can happen disruption of important negotiations with business partners, market conditions may change, which ultimately can lead to loss of material and intellectual resources of the company.

As a result, information risks affecting the information elements IS, causing the change in internal and external conditions of the enterprise. As a result of these changes, the company loses, he applied some damage. The main places of occurrence information risks ISP enterprise information systems is different class and hardware and software systems used in the enterprise [17, p. 212].

The activities of the enterprise can not do without IT-technologies in most departments, so there are prerequisites for the emergence of information risks in the enterprise.

LLC «SNV Plus» is an active participant in the investment process, conducts an extensive program of technical re-equipment, seeks to meet the highest standards in environmental and resource conservation.

Most important to the enterprise of LLC «SNV Plus» divisions are: production; logistics, procurement, supply; department service department production planning; economic department, accounting; leadership; IT-department.

Each activity is associated with others by CIS enterprises. In the studied companies use ERP system SAP R/3.

The last large module of the system was introduced in July 2015. Implementation module maintenance and repair of equipment was a continuation of the transition on a new accounting system based on SAP, which is aimed primarily at improving the quality of planning and accounting for production and repair work, as well as the validity and transparency of the costs of their implementation. Its implementation has demanded major organizational effort since changes were the daily work of all divisions involved in the production process. Currently SAP ERP system Enterprise supports the following functionalities: "accounting", "fixed assets", "dinance", "management cost - controlling", "project management and investment", "materials management," "sales management products "," production "

During the software implementation specialists of LLC «SNV Plus» directories created technical objects, pieces of equipment and technical repairs maps, compiled and codified instructions, specifications of materials.

During the qualitative analysis of IT-risks the company was made summary table showing for each direction of the correlated possible sources of IT-emergence of risk.

The largest number of outages have on core activity – production (212 hours). This is due to the presence of huge technical capacity. The main factor in the emergence of information risks in this area of activity is SCADA-systems, which are software and hardware for process control in various areas of

production. In addition to the complexity of the system, an important role in data management systems playing the competence of the operator control system.

Also big downtime in the economic sector enterprises. Key factors for the emergence of idle equipment in this area is the cash flow management module, which is also a complex information system consisting of components of the database software.

The level of development of network communications company and the protective mechanisms of information systems directly affects the availability, integrity and confidentiality of the data used. Violation of the performance security may result in loss of sensitive data, malware can disable not only individual components but the whole system.

Thus, the total downtime of equipment and various equipment information systems, companies in all key areas of the company is 517 hours, that is 21 days, which greatly affects the economic performance and leads to economic losses because, first, experts on their jobs can not fulfill their direct duties, and secondly to address the problems must involve specialists service and IT- services.

2.3. Analysis of the development of current information management systems at the enterprise LLC «SNV Plus».

Automated management information system of LLC «SNV Plus» is based on the use of computer technology and includes hardware and software equipment.

The purpose of automation of LLC «SNV Plus» – information support forming and decision management.

Technical equipment information system of LLC «SNV Plus» is presented in table 2.4.

The data in Table 2.4 shows that the organization uses modern means of automation.

Software LLC «SNV Plus» includes a system, auxiliary and specialized application software.

Table 2.4

Characteristics of the technical means of information processing of LLC «SNV Plus»

number	Technical means	Characteristic
1	Personal Computer	Minimum Intel / Celeron / Pentium; 1.8 GHz; 128 Mb RAM; 80 Gb HDD
2	Server	Minimum Pentium IV 3 GHz; 1024 Mb RAM; 240 Gb HDD
3	Printer	HP Laser Printer
4	Local Area Network	Ithernet

[Authoring]

The operating system of workstations in the company in favor of Windows 7. The operating system is comfortable, provides diagnostic tools, restoration and maintenance work in more stable than previous versions. The concept Windows 7 is implemented the idea of integrating graphical user system and ideology tools for the Internet, which is very important in the company.

Application software support of LLC «SNV Plus» includes the following components: training system text documents, spreadsheet document preparation system, database, graphics preparation system.

In the office, the following applications: text editor Word; Spreadsheets Excel; e-mail program Microsoft Outlook.

Text Editor allows you to input, display, edit, format, import text files, perform automatic spelling checking text automate the process of formatting documents.

In a text editor is all the correspondence of LLC «SNV Plus» with customers, creating contracts, price lists. The program uses Word as text editor, e-mail application.

The program Microsoft Excel allows you to control the order of calculations has a rich set of tools to automate the calculations and advanced features that allow a professional to execute documents and reports. Users have the skills to create calculations using built-in functions, formulas and macros.

Microsoft Outlook – a multipurpose program that allows electronic calendar, electronic notebooks, track tasks. It has a built-in alert mode. LLC «SNV Plus» use

the e-mail application.

In the workplace, managers, chief accountants and managers at various levels installed "1C: Enterprise 8".

"1C: Enterprise 8" is a universal system built on an integrated technology platform and the indivisible principles.

The program is assigned a basic model of accounting, how it works with the principles of accounting business. The program can support any accounting system, different accounting methods, different accounting schemes, various forms of primary documents.

The program describing the following features:

– there are no restrictions on a variety of analytical accounting;

– possible to conduct quantitative and multicurrency accounting;

– provided full customization of forms of primary documents;

– provided a single interface with a text editor Ms Word and other applications Windows.

To automate the core activities of LLC «SNV Plus» module is used in the company "1C: Production Management".

This application solution was implemented in the system 1C: Enterprise 8, as the program supports all the advantages of modern technology platforms, which include: openness, scalability, ease of configuration, administration, management and development.

Configuration "Production Enterprise Management" provides the following features:

– driving arrays of reference data needed for planning and production of finished products accounting, including the formation of norms of raw and auxiliary materials;

– planning and accounting of finished products;

– monitoring of production problems;

– processing orders for production;

– accounting costs of raw materials, work in progress;

– accounting and raw own raw materials, semi-finished and finished products;

– marriage records;

– working clothes and spetsosnastky;

– accounting and analysis of production costs, the calculation of planned and actual costs.

Production operations are automatically reflected in the accounting and tax accounting.

In addition to the basic software of LLC «SNV Plus» uses ancillary software necessary for the operation of programs meet the challenges of enterprise management and providing additional services to users. These include various external libraries required for the operation of software tools archiving and data protection from unauthorized access by others.

Information is a resource of vulnerable and therefore it seems very important to take increased measures of protection, providing a full range of information security. Over the last ten years there is a significant increase in the number of viruses that spread mainly through media and email.

In this connection, the PC in the office of LLC «SNV Plus» installed antivirus software AntiVirus Toolkit Pro (Kaspersky Lab).

The program meets the latest requirements, continuously updated through the Internet and is the most common antivirus program in Ukraine.

For archiving data using the program WinZip, WinRar.

Characteristics of software for data processing of LLC «SNV Plus» is given in Table 2.5.

Software tools used in the activity of LLC «SNV Plus» refers to the class of modern software. However, the appearance of a modern computer technologies or changing business processes, there is a need to update hardware and software or modifying their own, or buy new software.

Table 2.5

Characteristics of information processing tools

Number	software tool	Appointment
1	Operating System Windows XP	For Workstations
2	Network operating system Windows NT Server	For server
3	PPP MS Office 2010	Development environment and implementation of programs
4	Program complex ARM (Software-based 1C)	To solve the problems of management of LLC «SNV Plus»

[Authoring]

In the workplace, managers set reference retrieval system "Garant". "Garant" - a complex and interconnected information and legal support, customized to individual needs of LLC «SNV Plus».

Conclusions to part 2

In this section we investigated LLC «SNV Plus», which is a small business with a small number of staff employed. The organizational structure is at the proper level. Company tries to follow its mission to motivate staff and increase sales. By all indicators of LLC «SNV Plus» is solvent financially stable, profitable business. Based on the analysis we can conclude that the company LLC «SNV Plus» develops. These economic analysis indicate that the performance for the period have a different orientation. There are positive characteristics (operating profitability growth, increasing turnover of current assets) and negative (reducing the return on assets of fixed assets, decreased productivity). In this regard, we can conclude that

The analysis showed that in the current economic conditions in a highly competitive and changing market of LLC «SNV Plus» must respond quickly to changes in demand and market conditions, the emergence of new technologies to improve the management of the organization. One aspect of improving the management of the organization is to use modern information systems and technologies in the management of the organization. In this regard, the analysis of

the use of IS and IT activities of LLC «SNV Plus» and identified existing problems.

The analysis of the use of information systems information technology activities of LLC «SNV Plus» showed that the present automated enterprise management system does not cover all key business processes, which affects the efficiency of the management of LLC «SNV Plus» in general. However, the available resources of information, technology, technology and equipment meet the needs of LLC «SNV Plus» during the financial and economic activity. If the company can increase market then these resources will be supplemented, as they are not specific and exclusive.

PART 3

IMPROVING THE DEVELOPMENT OF INFORMATION MANAGEMENT SYSTEMS AT THE ENTERPRISE LLC «SNV PLUS»

3.1. Priority directions of development of information management systems at the enterprise.

In today's world of business need to automate various processes have become commonplace. It is hard to imagine a warehouse or accounting without the use of specialized software, sales reps use special applications for registration and send orders directly to the office with a tablet or a mobile phone, a fairly large portion of orders coming from the site are as ready to process documents. But this relationship with clients, mainly in the middle and small business, something often conducted without the introduction of automation and enough attention to accounting.

We found that at LLC «SNV Plus» managers keep track of their own way: some in spreadsheets EXEL, some by hand on paper, and some do not consider it necessary to record your workflow. As a result, track how many people worked out that orders were carried out, and who calls occurred can not be established. All this affects the work of the company, it loses customers time and money.

Out of this situation – the automation and standardization of customer relationship management, ie the introduction of CRM-system.

This solution can help:

1. Get the total for the company standardized database of contacts.

2. Effectively monitor the quality of the sales department.

3. Get stats and analytics performance with with radionuclides.

4. Plan to improve performance and develop a strategy for business development.

Consequently, CRM system needs of LLC «SNV Plus» that:

1. Do not lose a potential customer never miss an incoming call and request.

2. Monitor the work of staff and standardize work with clients.

3. Accumulate statistical base. Using CRM-systems all working information is collected in a common database in a standardized form, that manager can analyze and plan future work more consciously.

4. Giving complete solutions, from which you can build a building of its own system of [9, p.46-47].

Obrruntuvavshy benefit from optimization, select the CRM-system, which will provide it. It should be noted that the company LLC «SNV Plus» buys this product because there is no company in its own information department of development and organization of new employee training and local business takes not only time consuming but also bring great losses. Thus there is an information department that deals with information products in support of the organization, which will deal with the implementation of the system.

Consider the procedure for selecting software implementation of information systems in a service project management company LLC «SNV Plus». The procedure has three stages:

1. Development scorecard.

2. Selection of similar information systems.

3. Selection system.

Define key indicators for assessing software in this category. Degree of importance ("weight" index) of each indicator is specified in absolute terms, based on the condition that their sum must equal 1 displays them in the table 3.1.

Table 3.1

Indicators of selection CRM-system

Number	Indicator	Weight	Description
1.	Functional completeness	0.13	Assessment of functional completeness of the information system is based on analysis, lean organizational chart of the general divisions
2.	Scale Enterprises	0.13	The scale of the enterprise can be assessed on the following parameters: ➢ Allowable amounts of stored information; ➢ The scale and speed synchronous transaction processing; ➢ Possibilities of collaboration (extent and speed asynchronous transaction processing); ➢ The number of jobs.

Ending table 3.1

3.	The possibility of comprehensive solutions	0.11	The possibility of comprehensive solutions is determined by the presence in the software package of base modules (in this case, improved sales processes and optimize customer service) and the degree of their integration with each other.
4.	Experience of	0.08	Implementation experience usually measured by two parameters: ➢ Time of the manufacturer in this segment of the software market; ➢ The number of large enterprises, which made the successful implementation of these software products.
5.	configuration Flexibility	0.08	This figure reflects: ➢ The ability to adapt the system to the specific characteristics of the organization; ➢ The possibility of adjusting the regulatory framework; ➢ Prospects of the enterprise information technology in general.
6.	Target certainty	0.13	This indicator determines the degree of compliance functionality software system the real challenge of the company.
7.	Easy to use	0.05	This indicator shows: ➢ Time training; ➢ Time for typical operations.
8.	The degree of readiness for operation	0.05	This figure depends on the time and logistical costs required to bring the software system in a state of readiness.
9.	Ability to integrate with other applications.	0.05	When analyzing this indicator primarily accounted for integration with office applications (MS Word, Excel), reporting tools (Crystal Report, and others.) Support for COM / OLE-technology, etc.
10.	Servicing and maintenance	0.12	This indicator shows the services provided by the manufacturer of the training, support software system after installation, etc.
11.	Price	0.07	In determining the actual price should take into account possible additional costs to bring the system to working condition, staff training and so on.
	Sum	1	

[Authoring]

Market such software is great, because, given the type of activity and features of organization, from the variety of software products should be highlighted 4 major participating in further analysis, "Bitriks24», «FreshOffice», «Salesforce», «1C: CRM ».

➢ Salesforce - the most famous American company of the same name that is developer of CRM-system. Salesforce includes all the necessary features for effective business management: CRM, analytics, sales and marketing. The introduction of Salesforce enables the entrepreneur to manage the complete sales cycle.

➢ Bitrix24 - a complete corporate portal, which also includes CRM-system. Catch up with colleagues inside the company, assign tasks to employees to keep

records of customers in the CRM-system to plan working hours with the calendar and automate the work of managers in business processes.

- FreshOffice - a platform that brings together a set of applications required for a full cycle of business: CRM, project management, document management, finance, analytics, IP-telephony, KPI for employees file a cloud messenger and others. CRM-system allows you to manage the sales cycle, from receiving to Lida at checkout.
- 1C: CRM - is an analytical CRM-system that offers just four turnkey solutions for every size of business. The software automates all the business processes such as procurement departments, marketing, sales and service, and manage business processes at all stages of interaction with customers.

Some of the information used in the description and evaluation of the systems presented in Appendix E, indicating such important parameters as system cost, the operating system and method of storage.

For each of the indicators adopted by the assigned rating point scale where 5 - information system fully meets the requirements of the organization; 4 - system has largely critical functionality; 3 - the application has important functional parts; The second system is missing most of the important functional; 1 - does not meet the requirements.

Expert estimations are presented in table 3.2.

Table 3.2

Evaluation of software products

Indicator / Name System	Bitrix24	Fresh Office	Salesforce	1C: CRM
Functional completeness	5	4	3	4
Scale Enterprises	5	4	2	5
The possibility of comprehensive solutions	5	3	3	5
Experience of	4	3	4	5
configuration Flexibility	4	3	4	5
Target certainty	5	2	2	3
Easy to use	5	4	4	2
The degree of readiness for operation	5	5	5	4
Ability to integrate with other applications	5	4	3	5
Servicing and maintenance	5	5	4	5
Price	5	4	3	3

[Authoring]

Based on assessments taken of the importance of quality indicators used can be integrated following the systems of quality assessment are presented in Table. 3.3.

Table 3.3

Integral quality assessment of selected information systems

Name	Integral assessment
Bitrix24	4.84
FreshOffice	3.64
Salesforce	3.17
1C: CRM	4.27

[Authoring]

The results of the analysis as a means to improve the system of sales and automate the process of customer service recommended a system of "Bitrix24." The system is claimed to help solve the company of LLC «SNV Plus» problems and to provide ancillary effect on future vision of business processes.

"Bitrikx24" - a corporate portal "1C-Bitrix" is implemented as a cloud service. This great feature allows you to start using "Bitrix24" quickly and easily: no need to purchase and configure a server, install the app, follow it and doing many other routine operations.

The following briefly describes the main features and capabilities of the platform "Bitrix24":

1) Business communication. Allows all employees work and communicate in a single corporate portal.

2) Manage tasks and projects. Allows you to assign tasks himself, his staff, other employees and monitor their implementation. It has the function of delegation.

3) CRM. The system of customer relationship management. CRM is used to account for potential and current clients, journalists, partners and other "leads" in CRM built-in directory of goods and services.

4) Collaborate with documents. Integration with the «cloud» MS Office lets you edit a document online a few employees.

5) Planning and time tracking. Allows you to increase the responsibility of the company. Employees are required to mark the beginning and end of the working day and schedule tasks daily.

6) HR: Human Resources. Allows you to edit the organizational structure, leaders assign, edit, schedule holidays and business trips.

7) Automate business processes. Business processes can work with almost any kind of information on the portal. «Business processes» - is a versatile tool used in many different elements.

8) desktop and mobile applications. Lets work with any device, be it a computer, mobile phone, tablet.

9) Integration with 1C, Microsoft, Google, Apple.

Also for LLC «SNV Plus» is another definite plus platform "Bitrix24" - the company has a system 1C, but as mentioned earlier, Bitrix24 perfectly integrated with 1C and to create a single information field in the company and increase efficiency in 1C .

In CRM keeps records of all customers and not only. Any "hook" (the "Bitrix24" - is "lead"), which in the future could become a real client fixed. This could be email, missed call event.

Task Manager Sales - find out who it is and what products or services of interest in this potential customer. When it appears, is converted to ice contact and company (if the customer presents a legal person) and then into an agreement (when the planned sale).

Working in such a scenario (from lead to contact and operations) in the CRM system "Bitrix24" maximizes all potential clues and analyze the efficiency of sales.

The introduction of this type of system in LLC «SNV Plus» is necessary. Employees keep records in paper form, which could lead to loss of customers. And the manager will be clear that the course for the company to choose next.

CRM also allows reporting of transactions, reports on goods, reports and more with radionuclides. This tool is useful for managers to understand how the

sales manager keeps his job. To demonstrate the functionality of all the data has changed, as it is confidential information.

Thus, the implementation of CRM "Bitrix24" will see a "problem" deals, where and how much resources poured in vain. That will save the company.

So, for the LLC «SNV Plus» is not only possible, but also need to implement this system. But there are some disadvantages, which includes training of personnel working with the system.

3.2. Justification of measures to improve information provision society

All business processes in an organization can be divided into four types: basic (create value for customers of the organization) to ensure (provide resources and materials other processes), process management (decision-making) and development (development of the organization or individual subsystems in it). To classify business processes of LLC «SNV Plus» will present them in a tree business processes – systematic mapping model of process management as part of what is in Appendix M.

Thus, LLC «SNV Plus» contains all 4 types of business processes. It should be noted that this structure is a simple set of processes organization model, in fact model the enterprise has a complex structure and not always unambiguous communication.

To summarize the analysis of internal and external environment organization uses integrated analysis. All factors that directly or indirectly affect the organization relate to each other and the environment remains a complete picture of the company. This analysis includes an assessment of qualitative and quantitative aspects of the environment, and also shows the connections that occur under the influence of some factors on others.

Analysis of internal cuts helps to assess the extent of the flow and efficiency of these processes, the justification for their use and their resursovytratnist. Based on these data, made a conclusion about the overall effectiveness of the organization's strategy, its competitive advantages and disadvantages, and

identified areas of business processes. To assess the internal environment of LLC «SNV Plus» analysis was selected sections of the organization. We show it in comparison with other organizations in the field, take the nearest competitor. As such organization was selected LLC «UKRSTK» located in the city. Kyiv, but actively operates in Uzyn. Assessment of the internal environment of the organization of LLC «SNV Plus» by internal sections provided in Appendix F.

Appendix F is the result of the analysis of the internal environment of the company and provides key findings for each area selected in LLC «SNV Plus». As a result, conducting a qualitative analysis of 6 sections of the organization, it can be concluded that the company has an equal footing with competitor in almost every aspect of the activities presented in the table Appendix F. However, in comparison with LLC «UKRSTK» is a number of significant shortcomings whose solution will help the company break into the market leader. The main advantages of the business, the company in question, it is worth noting the development of services of service, whereas competitor is focusing on diversifying its activities and enter new markets.

Then, following a qualitative analysis of the internal environment should be to quantify. To achieve this, we use the SNW-analysis. Abbreviation SNW position reflects the nature of the enterprise in the studied factor: S - strong position; N - neutral position; W - weak position. Evaluation system is complemented by a neutral position, which corresponds, averages value evaluation of a factor on similar businesses. To analyze the internal environment of the neighbor must select a competitor. For companies LLC «SNV Plus» is such a competitor company LLC «UKRSTK», which has approximately equal range of services. Assessment of these factors in SNW-analysis will be based on the following criteria:

– 5 - very high efficiency (76 - 100%);
– 0 - No impact or no data on the evaluation index;
– -5 - efficiency is very low (10 - 15%);

Negative assessments describing appropriate actions focus on personnel

changes in the state subsystems. SNW-analysis of the internal environment of LLC «SNV Plus» provided in table 3.4.

Table 3.4

SNW-analysis of the internal environment of LLC «SNV Plus»

The element of internal environment	S					N	W				
	5	4	3	2	1	0	-1	-2	-3	-4	-5
1. Production of goods											
Quality products											
The level of capacity utilization											
The level of technological equipment											
2. Marketing											
Price products											
Latitude range and services											
Conditions of contract											
company image											
3. Logistics											
inventory Management											
External logistics											
4. Staff											
The system of motivation and incentives											
Qualification of staff											
5. Information Systems											
Having appropriate information systems and their reliability											
6. Finance											
Logistical support core activities											
Financial stability											
7. Working with clients											
Search operations and ongoing work with the client											
After-sales service											
8. Corporate governance											
The organizational structure											
Clarity of business regulations											

●–●——— LLC "SNV Plus"; ▲ ▲ - - - - - - -LLC "UKRSTK"

Thus, based on data SNW-analysis of the internal environment of LLC «SNV Plus», the following is the most strengths: quality of products; the level of technological equipment; breadth of product range and services; external logistics; qualified personnel; after-sales service.

These are the factors which the company achieved the highest success, beating his rival by walking or flush it.

On the other hand, there are weaknesses: low capacity utilization; system of motivation and stimulation; lack of information systems; inefficient operations and search current job with a client.

Highlighted factors external and internal environment of the organization to show how these factors interact. On the basis of this interaction is constructed strategy for future actions and events company. To achieve this goal, using SWOT-analysis. SWOT-analysis reveals the strengths and structure (strengths) and weak (weakness) side firms, as well as potential opportunities (opportunities) and threats (threats). This is achieved by comparing the internal strength and weaknesses of the company with the opportunities that gives them a market. The conclusion which direction the organization should develop their business and ultimately determined the allocation of resources to segments and on selected aspects of the activity. SWOT-analysis company LLC «SNV Plus» is presented in table 3.5.

Table 3.5

SWOT-analysis company LLC «SNV Plus»

Environment / Internal environment	**Opportunities** 1. The emergence of new schemes and methods of manufacturing processes (including in the field of information technology and automation of business processes); 2. Issue of new production equipment; 3. Close cooperation with other regions	**Threats** 1. Failure to purchase foreign equipment; 2. Reduction of salaries in the industry; 3. Development Software
Strengths 1. Quality of products; 2.Vysokyy level of technological equipment; 3. The breadth of assortment and services; 4. Qualification of staff	**SO (strength and opportunity)** ➢ Purchase of new production equipment to support high-quality products and high level of technological equipment; ➢ The emergence of new schemes and methods of manufacturing processes to optimize the working activities that will expand the range and quality of services	**ST (strength and threat)** ➢ The high level of technological equipment allows the long term not worry about buying new equipment; ➢ A wide range of goods and services will provide additional revenue that will send the support wages at the same level
Weaknesses 1. The low level of capacity utilization; 2. The system of motivation and stimulation; 3. Availability of the necessary information systems; 4. Inefficient operation of search and ongoing work with clients	**WO (Weakness and feature)** ➢ *The low level of capacity utilization reduces the effectiveness of new production equipment;* ➢ *Lack of information management systems (CRM, etc.) Is the cause of inefficient operations of search and ongoing work with clients;*	**WT (Weakness and threat)** ➢ The decline in wages in the industry will have a negative impact on the already inefficient system of motivation; ➢ Continuous development software accelerates the irrelevance of current, making it even more inefficient and unclaimed

Thus, SWOT-analysis company LLC «SNV Plus» reflects that the company has a wide range of opportunities to multiply their strengths and set of tools to reduce the negative effect of threats. Assessing each field can be concluded that organizations should choose the strategy of the opportunities to overcome weaknesses, which examines the problems stated in this study. If the enterprise of LLC «SNV Plus» will pay no attention to them, it will affect the loss of market share and lead to a reduction in income.

After analyzing the internal environment, comparing positive and negative factors in the SWOT-analysis is necessary to collect and classify these factors proranzhyruvavshy them. One of the tools to effectively address this problem, the matrix Hlaystera. Matrix divides the problem into three levels:

1. The level of the organization;
2. The level of unit;
3. Individual level.

Also consider specify them in time, pointing out: causes, solving method and expected results. Matrix Hlaystera for the company LLC «SNV Plus» is presented in table K.3 (Appendix K).

Marked by breaking problems at management levels obvious conclusion to continue the success of the enterprise must urgently solve the problem of capacity utilization. This can be done only by increasing the number of customers (contracts for production), which is possible only in the implementation of the information system.

To implement information system must determine its type, through the provision of basic functionality. For this purpose developed smart card system that includes all those aspects that are present in the business process of production and sales, and those who bring information system.

Smart card is a tool for quality management, based on the definition of logical relationships between data. This tool is used to compare the causes and effects of the investigated problems. These factors regulate reason in logical sequence. When the chart includes connections such factors are absent.

Typically, diagram links used in conjunction with a diagram of relationship because it allows to build detected with the help of reason in a logical chain.

Given the presented functionality can be concluded that the company LLC «SNV Plus» should implement a system to manage customer relationships. In the software market this role is CRM-system.

3.3. Forecast effectiveness of improving the development of information management systems at the enterprise LLC «SNV Plus».

The basis of the information systems needed to manage external and internal process information of the company, is a dynamic model of information flow in managed enterprise level, which is formed on the basis of information flows from points of origin information in a central database.

Learning counts movement document allows you to see which documents are sent where and where to come. Separating units in which information flows converge the same type, you can determine the number of types of jobs to be developed that allows you to start a feasibility study, technical project network software project for business information exchange [7].

In designing information system in modern conditions affect not only the level of organization forms and management of technical equipment, but also new approaches to the idea of development and design.

Develop a plan for implementation. The team consists of the main project manager, senior manager, first, second and third category.

To understand how expedient implementation of the platform and the implementation of the project as a whole, need to evaluate the cost of the project - how much it will cost and then how long it takes for this project. To do this, the software uses Microsoft Project. This product will calculate the project duration and costs of the project.

Fig 3.1. is a list of tasks that must be done to implement this project. Each task has its time and resources spent on its implementation.

From this figure shows that in order to implement this project needed 483 working days and 66.6 thousand UAH.

	and	task name	Costs	Duration	Beginning	End
0		**- Implementation platform "Bitrix24" LLC «SNV Plus»**	**66609,00 ₴**	**483 day**	**Tue 10/01/19**	**Thu 11/15/20**
1		**- Search software**	**3260,00 ₴**	**40 days**	**Tue 10/01/19**	**Mon 06/03/19**
2		Market monitoring IT platform	1320,00 ₴	30 days	Vt.10.01.19	Mon 20/02/19
3		Learning platform features	220,00 ₴	5 days	Vt.21.02.19	Mon 27/02/19
4		Reconciliation of acquiring cloud version of the guidance	1720,00 ₴	5 days	Tue 26/02/19	Mon 06/03/19
5		**- Preparation for presentation software**	**748,00 ₴**	**21 days**	**Tue 03/07/19**	**Tue 04/04/19**
6		Installation on the PC platform development team	28,00 ₴	1 day	Tue 03/07/19	Tue 03/07/19
7		Personalized platform	720,00 ₴	20 days	Wed 03/08/19	Tue 04/04/19
8		**- Getting employees to the platform Bitrix24**	**2573,00 ₴**	**54 day**	**Wed 04/05/19**	**Mon 19/06/19**
9		Setting Bitrix24 platform for all PC company	280,00 ₴	10 days	Wed 04/05/19	Tue 18/04/19
10		Initial familiarity with the platform staff, agitation interest	140,00 ₴	5 days	Wed 04/19/19	Tue 25/04/19
11		Stimulating the interest of employees to the platform	616,00 ₴	14 days	Wed 04/19/19	Mon 08/05/19
12		Audit of business processes within the enterprise	280,00 ₴	7 days	Wed 04/19/19	Thu 04/27/19
13		Design of the first five automated business processes	720,00 ₴	20 days	Fri 04/28/19	Thu 05/25/19
14		Beta testing of business processes	108,00 ₴	3 days	Fri 05/26/19	Tue 30/05/19
15		Presentation of the first business process	88,00 ₴	2 days	Wed 05/31/19	Thu 06/01/19
16		Training on new processes	280,00 ₴	10 days	Fri 06/02/19	Thu 06/15/19
17		Commissioning of the first automated processes	61,00 ₴	2 days	Fri 06/16/19	Mon 19/06/19
18		**- Bitrix24 platform commissioning into operation**	**60028,00 ₴**	**368 days**	**Tue 20/06/19**	**Thu 11/15/20**
19		Purchase the full version of the platform Bitrix24	5132,00 ₴	3 days	Tue 20/06/19	Thu 06/22/19
20		Audit of business processes	14600,00 ₴	365 days	Fri 06/23/19	Thu 11/15/20
21		Designing business processes	13140,00 ₴	365 days	Fri 06/23/19	Thu 11/15/20
22		Presentation of ready business processes	16060,00 ₴	365 days	Fri 06/23/19	Thu 11/15/20
23		The planned introduction of automated business processes into operation	11096,00 ₴	365 days	Fri 06/23/19	Thu 11/15/20

Fig.3.1. Task List for project

[Authoring]

Next, consider the resources used to implement this project. Letter resources shown in Fig. 3.2.

	and	task name	Type	Max. one.	The standard rate	overtime rate	Charging
1		Manager development team	Labor	100%	55,00 ₴ / g	0,00 ₴ / g	Pro rata
2		The auditor business processes	Labor	100%	50,00 ₴ / g	0,00 ₴ / g	Pro rata
3		Senior developer of business processes	Labor	100%	45,00 ₴ / g	0,00 ₴ / g	Pro rata
4		Junior developer of business processes	Labor	100%	45,00 ₴ / g	0,00 ₴ / g	Pro rata
5		System administrator Bitrix24	Labor	100%	35,00 ₴ / g	0,00 ₴ / g	Pro rata
6		Overcast version Bitrix24	Material		15000,00 ₴		Pro rata
7		The server version Bitrix24	Material		50000,00 ₴		Pro rata

Fig.3.2. Letter resources

[Authoring]

From this figure shows that the implementation we use two physical resources: cloudy Bitrix24 version and server version Bitrix24. As well as the five human resources, the development team manager, auditor business processes, senior developer of business processes, junior developer of business processes,

systems administrator Bitrix24. The standard rate of staff was appointed on average from the data site hh.ua.

The next step was built table costs by type of resources used for the entire period of the project (table. 3.6):

Table 3.6

The cost of the project

Costs		
Type	Resource	Result
Material	Overcast version Bitrix24	15000
	The server version Bitrix24	50000
Material summary		65000
Labor	The auditor business processes	14660
	Manager development team	18547
	Junior developer of business processes	9562
	System administrator Bitrix24	7921
	Senior developer of business processes	9090
Labor summary		60000
Grand total		125109

[Authoring]

In order to estimate profit project must first calculate its costs. The cost of the project consists of lines, which include:

– Purchase of software - 125 000;

– Work on implementation (staff salaries), and simple setting - 190 900 UAH.

And indirect, consisting of:

– Support (bonuses to staff salaries Information Department) - 937,440 UAH.

The main advantage that gives the company the introduction of CRM-system - is increasing sales. Practice shows that the average sales growth per year from the use of such software is - 10% during the first three years of implementation. This is more efficient sales system that allows you to spend more time with customers and spend it more efficiently and with more effective control system [14].

For LLC «SNV Plus», which has a monthly turnover of 2000000 UAH, the increase in revenue in the first half of the implementation period, net amount - 175,000 UAH.

Deferred expenses, this gradual transfer software cost and the cost of implementation services, they amount to 8775 UAH Llc. "SNV PLUS" is on the common system of taxation, which means that the company pays 18% income tax. Based on internal company documents was found the average cost of one contract - UAH 300,000 and the cost of production - UAH 230,000, and estimated number of contracts that are lost because of the inefficiency of the process of working with clients - 3 pieces. Display revenue per contract after the introduction of tax-inclusive table. 3.7.

Table 3.7

Calculation of income from the project for 1 month

Name	Price
Average price contract, thousand UAH	300
Cost, thous. UAH	245
Profit, ths. UAH	165
Deferred expenses, thousand UAH	8.775
Support thousand UAH	78.12
Changing the tax base, th. UAH	78.105
Changing the tax thousand. UAH	15.621
Total revenue thousand. UAH	71.259

[Authoring]

So for the first period of tax will be 15 621 UAH excluding 2 weeks of implementing CRM-system, as well as profit growth, equal to 165 000 UAH. Growth figures for the entire project period can be seen in the table 3.8.

To determine the economic impact of the project and the need to define a number of key indicators, namely: NR (net revenue), PI (profitability index) and payback period and others.

Table 3.8

Growth indicators project period

Indicator / period (month)	1	2	3	4	5	6	7	8	9	10	11	12
Increase revenue th. UAH	0	0	165	165	165	165	165	165	165	165	165	165
Increase in costs, th. UAH	0	0	78.12	78.12	78.12	78.12	78.12	78.12	78.12	78.12	78.12	78.12
Deferred expenses, th. UAH	8.775	8.775	8.775	8.775	8.775	8.775	8.775	8.775	8.775	8.775	8.775	8.775
Tax th. UAH	1.755	1.775	15.621	15.621	15.621	15.621	15.621	15.621	15.621	15.621	15.621	15.621
Increase profits th. UAH	1.755	1.755	71.259	71.259	71.259	71.259	71.259	71.259	71.259	71.259	71.259	71.259

[Authoring]

The discount rate used to bring future value to the value at the moment.

$$d = \frac{1}{FV} = \frac{(FV-PV)}{FV} \qquad (3.1)$$

where PV - the current value of the original amount;

FV - future value, the amount of extension;

I = (FV-PV) - interest money percent.

Regarding the project implementation of CRM-systems Bitrix24 rate is calculated as:

- Inflation - 3%;
- Refinancing rate - 17.5%;
- The absence of the expected impact of the introduction of CRM-system - 7.45%;
- The uncertainty of the external environment in the project - 5.30%.

Discount rate - a measure that is used for the procedure of discounting (bringing the future price of money in today's value).

$$a_t = \frac{1}{(1+En)^t} \qquad (3.2)$$

where t - the year the costs and results are given to the initial period (t = 0,1,2, ..., T);

En - discount rate that is acceptable to the investor rate of return on capital.

Discounted operating income - is bringing the value of the future (expected)

cash payments to the present time. In other words, the money eventually lose their value compared with the current, so you need a starting point to currently assess all future cash receipts (profit / loss) to bring up to date. Calculated as:

$$DOI = \sum_{i=1}^{n} \frac{CF_i}{(1+r)^i} \qquad (3.3)$$

where DOI - discounted cash flow;

CF - cash flow in the period I;

r - discount rate (rate of return);

n - number of time periods for which there are cash flows.

Expresses the present value of investment value of future cash flows in the value of current flow payments. The draft implementing CRM-system investments simultaneously, ie is a one-time payment for the purchase and installation and configuration process. The formula for calculating operating income discounted identical, except that instead of the numerator cash flow set value costs.

Net discounted income (NDR) is the result of the project, which is the sum of the effects of the current billing period, defined as the excess of the discounted cash flow of the sum of the discounted investment costs.

$$NDR = \sum_{t=1}^{T} (R_t - З_t) \frac{1}{(1+Ен)^t} \qquad (3.4)$$

where Rt - valuation results (the amount of cash revenues);

3t - valuation costs (investment) in period t;

(Rt - 3t) - an effect that is achieved at the step.

Net present value (or NPV) - is the net value of the cash flows, reduced the time of calculation of the project.

$$NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} - \sum_{t=0}^{n} \frac{I_t}{(1+r)^t}, \qquad (3.5)$$

CFt - cash inflow in period t;

It - investments (costs) in the t-th period;

r - Barrier rate (discount rate);

n - the total number of periods (intervals steps) t = 1, 2, ..., n (or the time of the investment).

Profitability index (PI) is the ratio of the sum of these effects to the value of investments.

$$PI = \frac{1}{K} \sum_{t=1}^{T} (R_t - З_t^*) \frac{1}{(1+En)^t}, \quad (3.6)$$

En - valuation of current expenditure on the t-th step; $З_t^*$

K - the sum of discounted investments.

Internal Rate of Return (IRR) - the rate of return generated by the investment. This is the rate of return (barrier rate, discount rate) at which the net present value of an investment is zero, or this is the discount rate at which the discounted income from the project level investment costs.

Calculation and analysis of economic efficiency for the company LLC «SNV Plus» is presented in Appendix L.

When calculating the payback period is accepted that the project pays at a time when the cumulative net profit of the project, taking into account the discount factor is equal to the amount of capital investment in the project.

Consider the basic criteria that affect the decision to accept the project and compare the values in terms of utility. Displays them in the table 3.9.

Table 3.9

Table of key indicators project

Indicator	The dimension index	Value	Criterion
NR	th. UAH	333.56	> 0
ID (index of profitability)	UAH	2.18	> 1
Payback period	month	6.4	<12

[Authoring]

As a result, following the assessment of investments shows that the discount rate of 25% of the project will begin to generate revenue through 6.4 months after its implementation, the lowest of his term, even years. Profitability index is 2.18, meaning that for every investment in this project UAH profit will be 1.18 hryvnia. The project NR equals 333.56, which means that the project is profitable and prokryvaye all funds invested in it. All this proves that the project implementation of CRM-system "Bitrix24" will help the company Llc. "SNV PLUS" system not

only improve sales but also increase the overall profit from ongoing activities.

Conclusions to part 3

In this section, we have determined that all the problems of organization of outflows, the loss of customers and solve many other Bitrix24 system. It will help the manager understand exactly what is happening within the walls of his company. After all, he can not be at all points simultaneously monitor all staff together. Also, this system will be an excellent assistant and staff in their work.

After some investigation, had found that the most effective and low-expense will improve the system of sales through the introduction of CRM-system.

To justify the choice was investigated by the concept of customer relationship management. Were brought to the functional requirements of the system and determine its type for the organization. As a result, the selection procedure was conducted and its outcome chosen CRM-system Bitrix24 that suits both the technical level and at the level of maturity.

In order to ensure that the system will solve the stated problem, it was roughly modeled enterprise customer base.

Thus, based on practical research shows that Bitrix24 has all the necessary features to address the problem of low capacity utilization due to lower customer base.

Thus, the analysis of external and internal environment of Llc. "SNV PLUS" and examining the architecture of business organization, has been allocated a number of significant problems. Based on theoretical knowledge and information obtained in the study were offered possible solutions to these crises.

Firms should focus on the solution and minimize the impact of the negative aspects internal and external environment, while not losing their value and multiplying. Overall, the company is in a stable condition. Dedicated those problems are not solved, and often also have several options.

The main and most serious is the problem of low capacity utilization enterprise. This is because the organization reduced customer base and the number

of contracts due to ineffective sales and customer service processes and, consequently, falling profits. Automating this process helps to increase efficiency of management, reduce costs and increase the workload of the company.

According to specialization, it is worth noting that the most effective and low-cost option - is to improve the system of sales processes and customer service, means the introduction of CRM-system. Organizations need to focus on the level of security of information products. This will help the company understand its place in the market for goods and services, find the highest priority aspects of the business and its products.

After analyzing the company revealed the following problems: a company can not cope with modern demands of the key players in the consumer market, and there is no single, integrated software for operational work with customers contract manufacturing products. Therefore, we proposed to introduce Bitrix24 software that will automate part of the key weaknesses in the process.

Thus, we have developed a detailed project plan for the implementation of CRM-system "Bitrix24" in the company Llc. "SNV PLUS". We have developed a detailed work plan, calculated and justified costs and revenues, and these roles are involved in the process resources. Also, the project risks have been considered and implemented their qualitative and quantitative analysis.

The resulting figures reflect the effectiveness of the project. Given that its implementation were laid one year calculated payback period of 6.4 months, is irrefutable proof of the project. Adopting it will make the company profitable investment in your future and solve urgent business problems.

CONCLUSIONS AND PROPOSALS

In the course of writing the final qualifying were resolved following tasks:

Information component is the main link between the managed and managing enterprise system. Some authors understand information systems as a set of mechanisms to ensure the full implementation of the information process, ie organizational and technical system that is designed to perform data-processing operations or providing data-processing services to meet the needs of management and its users - management, external users (investors, suppliers, customers) using and/or creating information products.

Information systems at the physical level can be considered a form of implementation of information technology and treated as "the means by which organizations and people using appropriate technology for this, collect, process, store, use and distribute information.

Thus, the information system should support all stages of the information process. As a result, at the conceptual level, this system will provide information of the organization or supply chain, that is conceptual information flow within the system regardless of its automation.

We studied LLC «SNV Plus», which is a small business with a small number of staff employed. The organizational structure is at the proper level. Company tries to follow its mission to motivate staff and increase sales. By all indicators of LLC «SNV Plus» is solvent financially stable, profitable business. Based on the analysis we can conclude that the company LLC «SNV Plus» develops. These economic analysis indicate that the performance for the period have a different orientation. There are positive characteristics (operating profitability growth, increasing turnover of current assets), such negative (decrease of profitability on assets of fixed assets, decreased productivity). In this regard, we can conclude that the company holds a number of financial problems,

Available resources information technology, technology and equipment meet the needs of LLC «SNV Plus» during the financial and economic activity. If

the company can increase market then these resources will be supplemented, as they are not specific and exclusive.

The paper company is both pluses and minuses. First, it should be said about the organizational structure. Each point should ask the manager or general manager who will deal with supply and maintenance.

Now these questions decides leader who takes a lot of time and effort. Since the company is not going to stay put, and wants to grow and develop, naturally, the number of retail outlets will soon increase, which will lead to greater load on the head. Additional staff will be able to solve these problems simply coordinating them with management. Everything is coordinated through the work plan for the period. For example, quarterly. At the end of each quarter, the officer manager provides a report and plan for the next quarter. In such a plan may include renovations, repairs and recycling facilities. Based on estimates developed a plan under which is spending. In the event of cost overruns, an analysis of the reasons for this.

All problems of organization of outflows, the loss of customers and solve many other Bitrix24 system. It will help the manager understand exactly what is happening within the walls of his company. After all, he can not be at all points simultaneously monitor all staff together. Also, this system will be an excellent assistant and staff in their work.

After some investigation, had found that the most effective and low-expense will improve the system of sales through the introduction of CRM-system.

To justify the choice was investigated by the concept of customer relationship management. Were brought to the functional requirements of the system and determine its type for the organization. As a result, the selection procedure was conducted and its outcome chosen CRM-system Bitrix24 that suits both the technical level and at the level of maturity.

In order to ensure that the system will solve the stated problem, it was roughly modeled enterprise customer base.

Thus, based on practical research shows that Bitrix24 has all the necessary features to address the problem of low capacity utilization due to lower customer base.

Thus, the analysis of external and internal environment of LLC «SNV Plus» and examining the architecture of business organization, has been allocated a number of significant problems. Based on theoretical knowledge and information obtained in the study were offered possible solutions to these crises.

Firms should focus on the solution and minimize the impact of the negative aspects internal and external environment, while not losing their value and multiplying. Overall, the company is in a stable condition. Dedicated those problems are not solved, and often also have several options.

The main and most serious is the problem of low capacity utilization enterprise. This is because the organization reduced customer base and the number of contracts due to ineffective sales and customer service processes and, consequently, falling profits. Automating this process helps to increase efficiency of management, reduce costs and increase the workload of the company.

According to specialization, it is worth noting that the most effective and low-cost option - is to improve the system of sales processes and customer service, means the introduction of CRM-system. Organizations need to focus on the level of security of information products. This will help the company understand its place in the market for goods and services, find the highest priority aspects of the business and its products.

After analyzing the company revealed the following problems: a company can not cope with modern demands of the key players in the consumer market, and there is no single, integrated software for operational work with customers contract manufacturing products. Therefore, we proposed to introduce Bitrix24 software that will automate part of the key weaknesses in the process.

Thus, we have developed a detailed project plan for the implementation of CRM-system "Bitrix24" in the company LLC «SNV Plus». We have developed a detailed work plan, calculated and justified costs and revenues, and these roles are

involved in the process resources. Also, the project risks have been considered and implemented their qualitative and quantitative analysis.

The resulting figures reflect the effectiveness of the project. Given that its implementation were laid one year calculated payback period of 6.4 months, is irrefutable proof of the project. Adopting it will make the company profitable investment in your future and solve urgent business problems.

These results are consistent with the objectives and targets set in the introduction. The results to date can be applied in practice of LLC «SNV Plus». The company will increase the degree of control over the activities of employees, accelerate the implementation of the critical problems in pass-through chain business process, thereby providing the potential for new customers, which will help take the company to a new level of performance and increase market share.

REFERENCES

1. Авилов А.В., Сидоров, Н.И. Теоретико-методологические основы управления как творчества / А.В. Авилов, Н.И. Сидоров // Стратегии бизнеса. – 2016.– № 1.– 315 с.

2. Азарова А.О. Інформатика та комп'ютерна техніка: навч. посіб. / А.О. Азарова, А.В. Поплавський; Вінниц. нац. техн. Ун-т. – Вінниця: ВНТУ, 2012. – Ч. 1. – 2014. – 360 с.

3. Азарова А. О. Розроблення механізму покращення інноваційної діяльності підприємства засобами системи підтримки прийняття рішень/ А. О. Азарова, О. О. Мороз, А. В. Сторожа // Вісник Хмельницького національного університету. – 2015. – № 6, т. 1. – 212 с.

4. Азарова А. О. Впровадження та використання автоматизованих систем підвищення продуктивності праці на підприємств за умов кризи/ А. О. Азарова, О. М. Роїк, І. С. Лобанкіна // Економічний простір. – Дніпропетровськ: ПДАБА, 2014. – № 42. – 169 с.

5. C. Anderson. The most effective methods of implementation of management systems [Electronic resource]. – Access mode: www.cfin.ru/vernikov/kias/

6. Tarek Samara. ERP and Information Systems. Integration or Disintegration / Tarek Samara. – M. John Wiley & Sons Limited. – 2018. – 145 p.

7. David L. Cannon. CISA Certified Information Systems Auditor Study Guide / David L. Cannon. - M. John Wiley & Sons Limited. – 2015. – 704 p.

8. Бурковська А.В. Важливість і необхідність оцінки та контролю фінансового стану аграрного підприємства / А.В. Бурковська, В.О. Юрков, В.Р.Хабіров // Економічний форум. – 2017. – Вип. 3. – 215 с.

9. Виханський О.С. Стратегічне управління: Підручник. – К.:Гардарика, 2016. – 296 с.

10. M.V. Barker. Methods of evaluating the effectiveness of implementation of information systems in industrial / M. B. Barker. // Theoretical and practical aspects of the economy and intellectual property. - 2015. -

Issue 1 (11). – 49 p.

11. American Conference on Information Systems 2017 Workshop on Smart Manufacturing Proceedings Implementation of Automation [Electronic resource]. – Access mode: https://publications.hse.ru/books/212687463

12. Choice of ERP - [electronic resource] // Access: http://www.i2r.ru/static/342/out_17306.shtml

13. Гетьман О. О., Шаповал В. М. Економічна діагностика: навчальний посібник для студентів вищих навчальних закладів / О. О. Гетьман, В. М. Шаповал. – Київ: ЦНЛ, 2016. – 307 с.

14. Горлач А.С. Інформаційно-аналітичне забезпечення управління діяльністю підприємства / А.С. Горлач // Науковий вісник Академії муніципального управління. Серія: Економіка. – 2015. – Вип. 1. – 211 с.

15. Bondar G.H., Hopewood W.S. Accounting Information Systems. 6th ed. – New Jersey: Prentice Hall, 2014. – 232 с.

16. Гринчуцький В. І. Економіка підприємства: навч. посібник / В. І. Гринчуцький, Е. Т. Карапетян, Б. В. Погріщук. – К. : Центр учбової літератури, 2014. – 304 с.

17. Дегтярьова І. Б. Стратегія підприємства: конспект лекцій із дисципліни «Стратегія підприємства» для студ. спец. 076 «Підприємництво, торгівля та біржова діяльність» денної та заочної форм навчання [Текст] / І. Б. Дегтярьова, М.О. Харченко. – Суми : СумДУ, 2016. – 145 с.

18. Довгань Л. Є. Стратегічне управління: навч. посібник [Текст] / Л. Є Довгань, Ю. В. Каракай, Л. П.Артеменко – К. : Центр учбової літератури, 2009. – 440 с.

19. The activity of commercial enterprises in a competitive environment, control and analytical support of management: monograph / B. Davis – Center for Educational Literature, 2015. - 440 p.

20. Дорохов О.В. Оцінювання корпоративних інформаційних систем на основі нечіткого моделювання / О.В. Дорохов, Л.П. Дорохова, І.О.Золотарьова // Матеріали І міжнар. наук.-метод. конф. «Математичні

методи, моделі та інформаційні технології в економіці», 1-4 квітня 2009. – Чернівці: Друк-Арт, 2014. – 193 с.

21. H. Chiras. Strategic Aspects of Interaction of Electronic and Mobile Business / H. Chiras. – Seal-Art, 2014. – 230 p.

22. Ефективність стратегічного управління підприємствами: сучасні проблеми та перспективи їх вирішення: монографія / [В. П. Мікловда, І. Г. Брітченко, Н. Ю. Кубіній, Ю. О. Дідович]. – Полтава : ПУЕТ, 2013. - 218 с.

23. Загорна Т. О. Економічна діагностика: навч. посіб. / Т. О. Загорна; Мін. освіти і науки України. Макіїв. екон.-гуманіт. ін-т. – К.: ЦУЛ, 2013. – 400 с.

24. Іванова Т.В., Баранов В.В. Сучасний стан розвитку інформаційних систем [Електронний ресурс]. – Режим доступу: www.kntu.kr.ua/doc/nauk_zap_10_1/stat_10_1/64.doc.

25. Ігнатьєва І. А. Стратегічний менеджмент: підручник / І. А. Ігнатьєва. – К.: Каравела, 2013. – 480 с.

26. Ільєнко Р.В. Впровадження та використання інформаційних технологій у системі вищої освіти ЄС. Економіка і управління. – 2015. – №1. – 140 с.

27. Інформаційні системи і технології в бухгалтерському обліку : монографія. – К.: Київ. нац. торг.-екон. ун-т, 2015. – 336 с.

28. Інформаційні системи та технології. Конспект лекцій для студентів спеціальностей 073 «Менеджмент», 071 «Облік і оподаткування», 072 «Фінанси, банківська справа та страхування» / Укладач І.К. Карімов – Кам’янське: ДДТУ, 2016. – 98 с

29. Калашнікова Т.В. Фінансовий стан підприємства: сутність та оцінка / Т.В. Калашнікова // Вісник Сумського національного аграрного університету Серія «Економіка і менеджмент». – 2017. – № 3. – 135 с.

30. Калиніченко Ю. Стратегічний розвиток підприємства: теоретичні та практичні аспекти / Ю. Калиніченко // Галицький економічний вісник. – 2016. – №4(29). – 139 с.

31. Кіндрацька Г. І. Стратегічний менеджмент: навч. посібник / Г. І. Кіндрацька. – 2-ге вид., переробл. і доповн. – Львів : Видавництво Львівської політехніки, 2014. – 406 с.

32. Ковтун О. І. Стратегія підприємства: навч. Посібник / О. І. Ковтун. – К.: Ліра-К, 2014. – 680.

33. Конопльов С. П. Управління якістю: навч. Посібник / С. П. Конопльов. – К.: ИНФРА, 2015. – 252 с.

34. Information system [Electronic resource]. – Access mode: https://www.britannica.com/topic/information-system

35. Константінов С. М., Пономаренко Ю. Л. Інформаційні технології управління сучасними підприємствами: Навчальний посібник. У 2 т. / За ред. д.т.н., проф. Л. А. Пономаренка. – Львів: Українська академія друкарства, 2016. – Т. 1. – 368 с.

36. Костенко О.М. Індикатори інформаційно-аналітичної системи управління діяльністю підприємства / О. М. Костенко // Облік і фінанси. – 2014. – № 4. – 215 с.

37. Кравченко О. В. Поняття стратегії розвитку підприємства [Текст] / О. В. Кравченко // Вісник Сумського національного аграрного університету. – 2013. – № 1(22). – 272 с.

38. Краснокутська Н. С. Потенціал підприємства: формування та оцінка: навч. посіб. / Н. С. Краснокутська. – Київ: ЦНЛ, 2014. – 532 с.

39. Крулькевич М. И. Менеджерские системы коммуникаций в организациях / М. И. Крулькевич, А. С. Винарик. – Донецк: Изд-во ИЭПИ НАН Украины, 2016. – 180 с.

40. Мец В. О. Економічний аналіз фінансових результатів та фінансового стану підприємства: навч. посіб. / В. О. Мец. – К.: Вища школа, 2016. – 278 с.

41. Ларіков В. Ю. Ефективність використання ІТ-технологій в інформаційних системах бухгалтерського обліку / В. Ю. Ларіков // Вісник Львівської комерційної академії. Серія економічна / [ред. кол. : Башнянин Г.

І., Апопій В. В. та ін.]. – 2014. – Вип. 39. – 115 с.

42. Літнарович Р.М. Платформи корпоративних інформаційних систем. Курс лекцій. – МЕГУ, Рівне, 2012. – 130 с

43. Маркіна І.А. Методичні та практичні аспекти впровадження програмного забезпечення антикризового управління на підприємстві / І.А. Маркіна, О.С. Синякова // Економіка і регіон. – 2013. – № 2. – 79 с.

44. Овчинников С. Корпоративні інформаційні системи для малого бізнесу [Електронний ресурс] / С. Овчинников. – Режим доступу: http://vestnik.volbi.ru/upload/numbers/29/article-29-1192.pdf.

45. Орлова Н. С. Інформаційні системи в сучасному корпоративному управлінні. // Актуальні проблеми державного управління. – 2016. – №1 (41). – 178 с.

46. Петренко Д. А. Інформаційні системи для сфери малого бізнесу [Електронний ресурс] / Д. А. Петренко. – Режим доступу: http://www.uran.donetsk.ua/~masters/2017/fvti/petrenko/library/petrenko/open_source.pdf.

47. Плескач В. Л. Інформаційні системи і технології на підприємствах: підручник / В. Л. Плескач, Т. Г. Затонацька. – К.: Знання, 2017. – 718 с. [Електронний ресурс] – Режим доступу: http://pidruchniki.com/1431092747737/informatika/zasobi_stvorennya_zabezpechennya_informatsiynih _tehnologiy_pidpriyemstvah.

48. Попович П. Я. Економічний аналіз діяльності суб'єктів господарювання: підручник / П. Я. Попович. – [3-тє вид., перероб. і доп.]. – К.: Знання, 2015. – 631 с.

49. Різніченко Л.В. Досвід упровадження корпоративних інформаційних систем управління на вітчизняних підприємствах. // Вісник КДПУ ім. М. Остроградського. – 2013. – Вип. 4(57). – Ч.2. – 189 с.

50. Рибалко Л.П. Застосування сучасних корпоративних інформаційних систем в управлінні підприємствами. // Науковий вісник Херсонського державного університету. – 2015. – Вип.15. Ч.3. – 113 с.

51. Рульєв В. А. Менеджмент: навч.посібник [Текст] / В. А. Рульєв, С. О. Гуткевич. – К.: Центр учбової літератури, 2015. – 312 с.

52. Сазонець О. М. Інформаційні системи і технології в управлінні зовнішньоекономічною діяльністю: навч. посіб. / О. М. Сазонець. – К.: Центр учбової літератури, 2014. – 256 с.

53. Сальніков О.М., Романюк В.А., Оленченко В.Т. Інформаційні системи в менеджменті (частина перша). Теоретичні основи інформаційних систем в менеджменті. Формування інформаційної структури та управління інформаційними ресурсами підприємства./ Навчальний посібник. – Х.: Національна академія Національної гвардії України, 2015. – 203 с.

54. Сокол К.М. Світовий ринок інформаційних технологій в контексті глобалізації світової економіки. // Миколаївський національний університет імені В.О. Сухомлинського. – 2015. – Вип.3. – 95 с.

55. Сучасні інформаційні системи і технології: конспект лекцій / В. Г. Іванов, С. М. Іванов, В. В. Карасюк та ін.; за заг. ред. В. Г. Іванова, В. В. Карасюка. – Х.: Нац. юрид. ун-т ім. Ярослава Мудрого, 2014. – 347 с.

APPENDICES

Appendix A

7. Кузнєцов П. В. Маркетингове управління асортиментом продукції підприємства в умовах інформаційної економіки / П. В. Кузнєцов, І. А. Парфентенко, Д. П. Балагула // Вісник економіки транспорту і промисловості. – 2015. – Вип. 49. – С. 198–204.

8. Малюк С. О. Показники та методи оцінки ефективності системи управління товарним асортиментом хлібопекарських підприємств / С. О. Малюк // Науковий вісник Херсонського державного університету. Серія : Економічні науки. – 2014. – Вип. 6. Ч. 3. – С. 22–25.

9. Основні характеристики асортименту товарів [Електронний ресурс]. – Режим доступу : http://www.grandars.ua/college/tovarovedenie/assortiment-tovara.html.

10. Хом'як Ю. М., Затирка М. С. Система показників оцінки асортименту роздрібного підприємства [Електронний ресурс]. – Режим доступу : http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=2&I21DBN=UJRN&P21DBN=UJRN&IMAGE_FILE_DOWNLOAD=1&Image_file_name=PDF/Torg_2013_15_12.pdf.

Робота виконана під науковим керівництвом канд. екон. наук,
ст. викладача ЯЦИШИНОЇ К. В.

METHODOLOGY OF DEVELOPMENT OF INFORMATION MANAGMENT SUSTEMS AT THE ENTERPRISE

KLIUIEV D., 5 course FEMP KNUTE,
specialty «Trade management»

У статті визначено особливості методології розробки інформаційних систем управління на підприємстві. Обґрунтовано переваги впровадження сучасних методологій розробки інформаційних систем управління на основі процесуального підходу та політику щодо удосконалення їх реалізації на підприємстві. З'ясовано, що використання сучасних методологій розробки інформаційних систем управління сприяє підвищенню ефективності контролю, фінансового стану та розвитку підприємства.

The article defines the features of the methodology of the development of information management systems at the enterprise. The process approach identifies the advantages of implementing modern information technology development methodologies and policies to improve their implementation at the enterprise. It is indicated that the use of modern information technology development methodologies contributes to increased control, financial status and enterprise development.

The comprehension by managers of the fact that in modern conditions it is impossible to manage the old way, led to a wide use of information systems (IS) in the activities of enterprises of any scale. A wide range of tasks that require the use of IS and a high degree of relevance have caused the emergence of a wide variety of software products and methods that to some extent help solve a variety of applied problems. The consequence is the ambiguity and ambiguity faced by the customer and the designer of the new IS.

Actuality of the theme. In the modern world it is difficult to imagine the management of any enterprise without using a computer and information systems. All accounting operations, logistics chains, databases of suppliers and customers are conducted thanks to modern storage technologies. The system of programs helps to establish stable work and timely response to the emergence of various problems.

The object of the article. The object of this article is the study of modern methodology for the development of information systems and their adaptation for the further use and improvement of the economic indicators of the enterprise. The task of this article is to study the methodologies for implementing information systems in the enterprise, the main advantages and disadvantages, as well as the choice of methodologies that are relevant for the present days.

To begin with, we define the concept of «system». The system is a set of material and non-material objects forming a single whole, united by certain common characteristics, purposes, properties, conditions of existence, life activity, functioning, etc.

Process approach - an approach to the organization and analysis of the company's activities, based on the allocation and consideration of its business processes, each of which occurs in conjunction with other business processes of the company or the external environment.

Information management system - a set of information, economic and mathematical methods and models, technical, software, other technological tools and specialists, used for processing information and making managerial decisions. The following are the main interpretations of this definitions (table 1).

Table 1

Basic definitions of «information system»

Baldin K. V.	An information system is an interconnected set of tools, methods and personnel used to store, process and issue information to achieve the management objective. In modern conditions, the main technical means of processing information is a personal computer. Most modern information systems do not convert information, but data. Therefore, they are often called data processing systems. [1, p. 22]
Grekul V. I.	The information system is an organizationally ordered interconnected set of tools, methods and personnel used for storing, processing and issuing information in the interest of achieving the stated goal. [2, p. 15]
Ustinova G. M.	Information system is a set of software and hardware, as well as organizational support, which together provide information support to a person in various spheres of his activity. I would especially like to draw the attention of the reader to the fact that the information system is not only a software product and computers with network equipment, but also a list of regulations and rules for the operation of the system, personnel involved in the management and administration of all its components, and data that this the system manages. [3, p. 25]
Denishenko G. N.	The information system is an interconnected set of information, technical, software, mathematical, organizational, legal, ergonomic, linguistic, technological and other means, as well as personnel, designed to collect, process, store and issue economic information and make management decisions. [2, p. 17]
Orlov A. I.	The information system is an information circuit, together with the means of collecting, transmitting, processing and storing information, as well as the personnel carrying out these actions with information. [6, p. 8]

Information management systems are designed to be an effective tool in solving the problems of human society. One of the reasons for their accelerated development is the automation of production processes. In general, information can be called any system that serves to provide data on the progress of various operations. Information systems have been used since the middle of the last century. At first they were used to process accounting transactions and payroll. In the 60-ies. the improvement of programming languages made it possible to apply the IMS for the preparation of regular reporting. In the 1970s, interactive displays and databases appeared, which led to the emergence of programs that provided information not on fixed forms, but on necessity. In the 1980s, new computer technologies significantly expanded the capabilities of IMS, on the basis of which a systematic approach to monitoring was introduced. At the end of the same decade, top managers realized that the ISU is a strategic weapon. Timely received important information gives an advantage over competitors [2, p. 52].

Information management systems are used to solve various problems: compiling databases, communication, application programs, etc. But the priority task of the IMS is to ensure strategic planning and management monitoring of the tasks. For the same purpose they are used at the lower levels: tactical and operational. In the first case, the IST prepares materials for middle managers. In the second, work is carried out on specific groups of employees.

The mission of information systems is the production of information necessary for the organization to ensure the effective management of all its resources, creating an information and technological environment for the management of the organization. The main purpose of the information management system is the integration of information of various types. For example, reporting data or payment documents from different companies may differ. The information system must be able to integrate dissimilar information [8].

Basic properties of information systems:

1. Correspondence of the structure of IS, its functional purpose of the goal.
2. Production of reliable, reliable, timely and systematic information based on the use of databases, expert systems and knowledge bases. Since any IS is designed to collect, store and process information, then any information and communication medium lies in the environment of storage and access to data. The environment should provide a level of reliability of storage and access efficiency that are consistent with the scope of IS.
3. Use of data transmission networks.
4. IS should be controlled by people, understood and used in accordance with the basic principles implemented in the form of an enterprise standard for IS. The user interface of the IS must be easily understood on an intuitive level [4, p. 69].

Since management depends not only on information about its own production, but also on external information, the system must combine both internal and external information. Different levels of management need different kinds of information. Management of a higher level - in the information external, necessary for strategic planning, the management of a lower level needs more in-house information necessary for monitoring. The information management system should be useful to both [1, p. 112].

So, the enterprise information management system is an operating environment that is able to provide managers and specialists with up-to-date and reliable information about all business processes of the enterprise, which is necessary for planning operations, their implementation, registration and analysis. In other words, IMS is a system that contains a description of the full market cycle - from planning a business to analyzing the performance of an enterprise.

Management of enterprises in modern conditions requires more and more efficiency. Therefore, the use of enterprise information systems is one of the most important levers of business development. An indicative list of tasks that the IMS should solve at various levels of enterprise management and for its various services can now be considered universally recognized (table 2, developed on the basis of materials by Orlov A.I.).

Table 2

Main tasks of IMS

Levels and management services	Solved problems
Company Management	• providing reliable information about the company's current financial situation and preparing a forecast for the future; • control over the work of the company's services; • ensuring a clear coordination of work and resources; • providing operational information on negative trends, their causes and possible remedial measures
Financial and Accounting Services	• full control over the movement of funds; • realization of the accounting policy necessary for management; • operative definition of accounts receivable and accounts payable; • control over the implementation of contracts, estimates and plans;

Levels and management services	Solved problems
Production Management	• control over financial discipline; • tracking the movement of commodity-material flows • control over fulfillment of production orders; • control over the state of production capacities. • control over technological discipline
Marketing Services	• control over the promotion of new products on the market; • analysis of the sales market in order to expand it; • maintaining sales statistics; • informational support of the price and discounts policy; • use the base of standard letters for distribution; • control over the fulfillment of deliveries to the customer at the right time with the optimization of transportation costs
Sales and Supply Service	• maintaining databases of goods, products, services; • scheduling of delivery terms and transportation costs; • optimization of transport routes and transportation methods – computer contract management
Warehouse Accounting Services	• management of multi-tier structure of warehouses; • operational search for goods (products) by warehouses; • optimal placement in warehouses taking into account storage conditions; • management of proceeds subject to quality control; • inventory

The introduction of the information management system of the enterprise, like any serious transformation in the enterprise, is a complex and often painful process. Nevertheless, some of the problems that arise during the implementation of the system have been thoroughly studied, formalized and have effective decision methodologies. An early study of these problems and preparation for them greatly facilitate the implementation process and increase the efficiency of the further use of the system [5, p. 84].

The main problems and tasks that require special attention in their solution:

- absence of statement of a problem of management at the enterprise;
- the necessity of a partial or complete reorganization of the structure of the enterprise;
- the necessity of change the technology of business in various aspects;
- resistance of employees of the enterprise;
- temporary increase in the burden on employees during the implementation of the information management system of the enterprise;
- the necessity of the formation of a qualified group for the introduction and maintenance of the system, the choice of a strong team leader.

At present, the following principles of construction and functioning information systems:

1. The principle of compliance – the IS should ensure the operation of the facility with the efficiency criterion must be quantitative.
2. The principle of economy – the cost of processing information in the IS should be less economic gain on the site when using this information.
3. The principle of regulation – most of the information in the IS should come and processed with strict periodicity, according to the schedule.
4. The principle of self-control – the work of IS should be oriented towards continuous detection of errors in data and processing processes.
5. Principle of integration – one-time entry of information into EIS and its multiple, multi-purpose use.
6. The principle of adequacy – the ability of IS to change its structure and the law of behavior to achieve the optimum result under changing external conditions [7].

The basis for the development of any IS is the methodology, technology and tools (CASE-tools).

The methodology for creating information systems is to organize the process of building an information system and to provide management of this process in order to ensure that the requirements for both the system itself and the characteristics of the development process are met. The main tasks, the solution of which should be provided by the methodology of creating information systems (with the help of the corresponding toolkit), are the following:

- ensuring the creation of information systems that meet the goals and objectives of the enterprise and meet the requirements for automation of business processes;
- guarantee the creation of a system with specified parameters within a given time within the agreed budget;
- simplicity of maintenance, modification and expansion of the system in order to ensure its compliance with the changing operating conditions of the enterprise;
- ensuring the creation of information systems that meet the requirements of openness, portability and scalability;
- the possibility of using in the created system the previously developed and used at the enterprise information technology (software, databases, computer facilities, telecommunications).

Nowadays, there are not so many methodologies, especially complete ones, that is, taking into account all stages of the software life cycle. It is the methodology that determines which languages and systems will be used for software development and, in many respects, recommends which technological approach will be used [3, p. 213].

Methodology of RAD – Rapid Application Development.

The methodology of developing information systems, based on the use of rapid application development tools, has recently become widespread and has become known as Rapid Application Development (RAD) methodology. This methodology covers all stages of the life cycle of modern information systems. RAD is a complex of special tools for the rapid development of application information systems that allow you to operate with a certain set of graphical objects that functionally display individual information components of applications.

The basic principles of the RAD methodology can be summarized as follows:

- an iterative (spiral) development model is used;
- complete completion of work at each stage of the life cycle is not necessary;
- in the process of developing an information system, close interaction with the customer and future users is necessary;
- it is necessary to use CASE-tools and tools for rapid application development;
- it is necessary to use configuration management tools to facilitate the introduction of changes to the design and maintenance of the finished system;
- the use of prototypes is necessary, which makes it possible to fully understand and realize the needs of the end user;
- testing and development of the project are carried out simultaneously with the development;
- development is conducted by a small and well-managed team of professionals;
- competent management of the development of the system, precise planning and monitoring of the performance of work are necessary.

RAD's tools made it possible to implement a completely different technology than traditional application development. Information objects are formed as some acting models (prototypes) whose operation is coordinated with the user, and then the developer can go directly to the formation of finished applications, without losing sight of the overall picture of the projected system.

RAD-technology is not universal, its application it is not always advisable. For example, in projects where the requirements for software product is clearly defined and should not change, involvement customer in the development process is not required, and more effective may be cascade method. The same goes for projects whose complexity is determined by the need to implement complex algorithms, and the role and scope user interface is small.

Despite all its merits, the RAD methodology nevertheless (as, indeed, any other methodology) cannot claim universality. Its application is most effective when performing relatively small systems developed for a very specific enterprise. The RAD methodology cannot be used to develop

applications in which the user interface is secondary, that is, there is no visual definition of the logic of the system. Examples of such applications are real-time applications, drivers, or services.

«MSF METHODOLOGY»

MSF – the methodology of software development, proposed by Microsoft. MSF builds on Microsoft's hands-on experience and describes the management of people and workflows in the solution development process.

Basic concepts and principles of the MSF process model:

- a unified vision of the project – all interested parties and simply project participants must clearly represent the final result, everyone should understand the purpose of the project;
- management of trade-offs – search of compromises between the resources of the project, calendar schedule and realized opportunities;
- flexibility – readiness for changing project conditions;
- concentration on business priorities – focus on the return and benefits that the consumer expects to receive;
- encouraging free communication within the project;
- creation of basic versions – fixing the state of any project artifact, including program code, project plan, user manual, server configuration and subsequent effective change management, project analytics [9].

MSF offers proven methods for planning, designing, developing and implementing successful IT solutions. Due to its flexibility, scalability and the absence of rigid instructions, MSF can meet the needs of an organization or a project team of any size. The methodology of MSF consists of principles, models and disciplines on personnel management, processes, technological elements and issues related to all these factors, characteristic of most projects.

AGILE-METHODS

Agile – one of the methodologies of iterative and step-by-step software development, in contrast to the traditional linear methodology «waterfall». The methodology of flexible development defines a system of methods for designing, developing and testing throughout the life cycle of software. Methods of flexible development are based on rapid response to changes through the use of adaptive planning, joint development of requirements, rationalization of self-organizing cross-functional development teams, and step-by-step software development with a clear timeframe. This approach is used in many modern commercial software development projects.

The flexible development methodology is based on a liberal-democratic approach to the management and organization of labor teams, whose members are focused on the development of specific software. One of the main ideas of Agile is interaction within the team and with the customer face to face, which allows you to quickly make decisions and minimize the risks of software development, so the team is placed in one place, from a geographical point of view. [9]

But, Agile poorly describes the processes of requirements management, it can be said that such a concept is simply missing. a flexible development methodology does not imply long-term planning (planning is carried out in the short term), as a consequence, the step of forming a product development plan or in other words a product roadmap is skipped. Because Short-term planning (for the nearest iteration of development), and the Customer at the end of each iteration accepts the product and sets new requirements, the product itself can change to the roots, and the new requirements that are introduced often contradict the structure and architecture of the product already supplied to customers. Some Agile experts associate more with the approach to improving the finished product, rather than developing a new one. Supporters have a lot of flexible development methodology, exactly, like opponents.

RUP METHODOLOGY

RUP is a process aimed at supporting the collective development of the PS. All participants in the project use a common knowledge base, a single process, a unified view of development, a common modeling language. RUP was developed hand in hand with the UML - industrial standard of OO modeling – the same team of authors. All models in RUP are represented in UML notation.

RUP is a technological process for creating a PS, which allows improving the productivity of collective development by providing for all stages of the life cycle of methodologies for performing basic activities, document templates, instructions for working with the tools. RUP is constantly developing on the basis of a single knowledge base, replenished via the Internet. This is a useful tool, applicable to a wide range of developed applications. [8]

RUP offers an iterative approach to the design and development of the PS, based on the spiral life cycle. The entire life cycle includes four phases - entry into the project (research), development (refinement of the plan), design and deployment. Each phase consists of a sequence of iterations, the number of which can be any. In each iteration, the above technological processes are consistently applied to the development of a small part of the MS. In this case, the presentation of the result to the customer is acceptable. He has the opportunity to assess the implementation of the implementation, to give their comments, which may lead to a change and refinement of the requirements for the PS. The next iteration involves expanding the already developed part by implementing and integrating the next batch of requirements and taking into account changes in requirements in accordance with the customer's comments. Such organization of the process has a number of advantages.

What is good about RUP:

- It takes into account changing requirements. No matter how good the project manager, it is impossible to take into account everything in the beginning.
- Integration of functions occurs gradually, that is, each «detail» goes through a cycle of development, verification and implementation in the project. As a result, risks and costs of production are reduced.
- Early release of the product. The software comes with reduced functionality to occupy a niche in the market and to resist competitors, and then overgrows with «meat».
- Reuse. When building functionality, it's easier to identify typical solutions that will reduce development.
- Continuous learning. Because of frequent iterations, developers do not have a lot of pauses between code development, so professional growth is smooth and painless.
- Continuous improvement of the product. Iterations allow you to evaluate the project not only in terms of compliance with the plan, but also find ways to increase the efficiency and quality of the product.

Conclusions. Comparing the described methodologies and assessing their applicability to the process of developing an information system, we can say the following. For the successful operation of Agile methods, the interaction of the project team, the customer and the management should be organized - this is one of the components of success, but users and management are not always ready for such work, this is one of the drawbacks of Agile-methodologies. Flexible methods allow you to quickly create the first version of a product that has a complete functionality and self-sufficiency, which can be provided to the customer for testing. However, it is not always possible to solve a large problem by solving a set of small ones. Microsoft Solutions Framework can be an effective tool for organizations that want to quickly develop high-quality technology solutions for business. The flexibility of this platform makes it easy to adapt it to most of the technology projects, helping the working groups to effectively interact and coordinate their work. RAD is a methodology that focuses on the speed and convenience of development. One of the main conditions is the use of the language of rapid development. This is the name of an abstract programming language, with which the programmer is able to solve problems faster than with representatives of the third generation. RAD involves the use of a whole set of tools in addition to the language of rapid development: a system for gathering requirements, a development environment, frameworks, a program for group communication, software for testing. The most significant of them are: high development speed, low cost, high quality. RUP presents the user with a very wide range of possibilities. If you do all the work and tasks, create all the artifacts and formalize all reviews, RUP is an extremely formal, heavy-weight methodology. On the other hand, RUP allows you to develop only those artifacts and perform only those jobs and tasks that are necessary in a particular project.

A wide variety of IS development techniques allows to select the most suitable one, using as criteria the size and the complexity of the project, the number and qualification of the development team, customer requirements of the system. The techniques described in this paper used by software companies to create a variety of information systems in all areas of automation of human activities. Their features, as well as similarities, become clear only in the process of practical activities to create information systems.

References

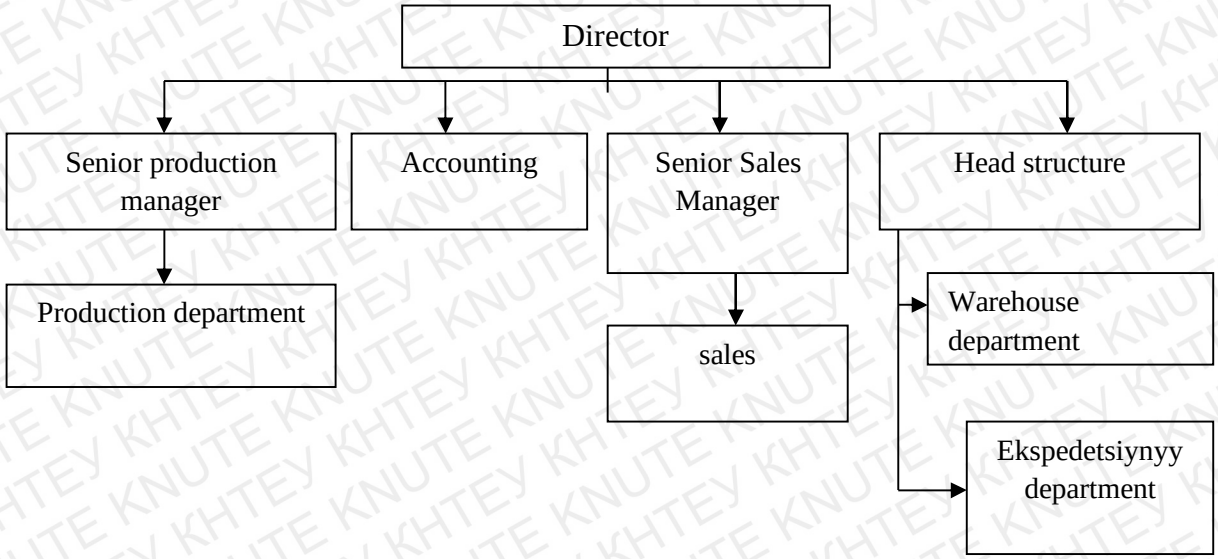
1. Baldin K. V. Information systems in economics. Textbook. SRC INFRA, 2013. – 218 c.
2. Grekul V. I., Denishenko G. N., Korovkina N. L. Designing of information systems. Internet University of Information Technologies, 2005. – 272 p.
3. Ustinova G. M. Information management systems. Tutorial. Publishing House DiSoft Yu.P., 2000. – 368 p.
4. Brusakova I. A. Information systems and technologies in economics. Textbook. Kiev, 2014. – 327 p.
5. Chernikov B. V., Ilyin V. V. Quality Management of Information Systems in Economics. Textbook. Kiev, 2013. – 412 p.
6. Official site of UPA (administrative-management portal) [Electronic resource]. – Access mod : http://www.aup.com/books/m151/3_6.htm
7. Official site of Megaplan [Electronic resource]. – Access mode : https://megaplan.ua/blog/business/1933/
8. Official site of Center of creative ideas [Electronic resource]. – Access mode: https://www.inventech.ua/lib/analis/analis0017/
9. Official site of Soft (Microsoft partner) [Electronic resource]. – Access mode : http://cmdsoft.com/information_systems/erp/system_management/
10. Official site of Sit forum [Electronic resource]. – Access mode : http://citforum.com/database/kbd96/43.shtml

The work was carried out under the scientific guidance of the candidate of economic sciences, associate professor LUKASHOVA L. V.

ANALYSIS THE METHODS OF EFFICIEN

Appendix B

The organizational structure of LLC «SNV Plus»



Appendix C

FINANCIAL REPORT
of small business

	Date (year, month, day)	2017	01	01
Enterprise Limited Liability Company «SNV Plus»	YEDRPOU	34224887		
Territory Uzyn	by KOATUU	3220410500		
Organizational and management pravovaforma Limited Liability Company	by KOPFH	240		
Type of economic activity Wholesale wood, construction materials and sanitary equipment;	by NACE	47.78		
The average number of employees, persons 12				

Unit: thousand. UAH. with one decimal place

Address, phone Str., Belotserkovsky district, city Uzyn, street Factory, 2 B

1. balance on December 31, 2016 **Form number 1st** Code for DKUD 1801006

Assets	Line code	At the beginning of the year	At the end of the period
1	2	3	4
I. Non-current assets			
Incomplete capital investments	1005	221	173
Fixed assets:	1010	241467	235705
initial value	1011	301196	302833
wear and tear	1012	-59,729	-67,128
Long-term biological assets	1020		
Long-term financial investments	1030	57053	57053
Other current assets	1090		
Total section I	**1095**	298741	292931
II. Current assets			
Inventory:	1100	93414	69570
including finished products	1103	22250	13799
Current biological assets	1110		
Accounts receivable for goods and services	1125	8569	9697
Receivables estimated budget	1135	2222	2181
including income tax	1136	193	30
Other current receivables	1155	7119	3146
Current financial investments	1160		

Money and cash equivalents	1165	45	16121
Prepaid expenses	1170		
Other current assets	1190	5312	656
Total section II	**1195**	68781	66558
III. Non-current assets held for sale and disposal groups	**1200**		
Balance	**1300**	367522	359489
Liability	Line code	At the beginning of the year	At the end of the period
1	2	3	4
I. Equity			
Registered (share) capital	1400	560,00	560,00
Additional capital	1410		
Reserve capital	1415		
Retained earnings (uncovered loss)	1420	-472.50	-492.10
Unpaid capital	1425		
Total section I	**1495**	87.50	67.90
II. Long-term liabilities target finansuvannyata software	**1595**		
III. Current liabilities			
Short-term bank credits	1600		
Current payables by: long-term liabilities	1610		
goods, works, services	1615	20,00	20,00
estimated budget	1620	58.20	58.20
including income tax	1621	10.60	20.52
Insurance settlements	1625		
calculation of wages	1630		
future revenues	1665		
Other current commitments	1690	112.40	112.40
Total section III	1695	190.60	190.60
IV. Liabilities associated with non-current assets held for sale and disposal groups	**1700**		
Balance	**1900**	278.10	258.50

2. Income Statement
on December 31, 2016

Form number 2nd	
Code for DKUD	1801007

Article	Line code	For the reporting period	Over the same period the previous year
1	2	3	4
Net income from sales of products (goods and services)	2000	715	660

Other operating income	2120	46	44
Other income	2240		
Total revenue (2000 + 2120 + 2240)	**2280**	761	704
Cost of products (goods and services)	2050	-589	-580
Other operating expenses	2180	-58	-65
Other expenses	2270		
Total costs (2050 + 2180 + 2270)	**2285**	-647	-645
Financial result before tax (2280 - 2285)	2290	114	59
Income tax	2300	20.52	10.6
Net profit (loss) (2290 - 2300)	**2350**	93.5	48.4

Head

(signature)

Chief Accountant

(signature)

Appendix D

FINANCIAL REPORT
of small business

		Date (year, month, day)	2018 01 01
Enterprise	Limited Liability Company «SNV Plus»	YEDRPOU	34224887
Territory	Uzyn	by KOATUU	3220410500
Organizational and management pravovaforma	Limited Liability Company	by KOPFH	240
Type of economic activity	Wholesale wood, construction materials and sanitary equipment;	by NACE	47.78
The average number of employees, persons	12		

Unit: thousand. UAH with one decimal place

Address, phone Str., Belotserkovsky district, city Uzyn, street Factory, 2 B

1. balance on December 31, 2017 **Form number 1st** Code for DKUD 1801006

Assets	Line code	At the beginning of the year	At the end of the period
1	2	3	4
I. Non-current assets			
Incomplete capital investments	1005	173	127
Fixed assets:	1010	235705	231133
initial value	1011	302833	306038
wear and tear	1012	-67,128	-74,905
Long-term biological assets	1020		
Long-term financial investments	1030	57053	57053
Other current assets	1090		405
Total section I	**1095**	292931	288909
II. Current assets			
Inventory:	1100	69570	81126
including finished products	1103	13799	24625
Current biological assets	1110		
Accounts receivable for goods and services	1125	9697	6846
Receivables estimated budget	1135	2181	88806
including income tax	1136	30	30

Other current receivables	1155	3146	900
Current financial investments	1160		
Money and cash equivalents	1165	16121	51328
Prepaid expenses	1170		
Other current assets	1190	656	0
Total section II	**1195**	66558	188413
III. Non-current assets held for sale and disposal groups	**1200**		
Balance	**1300**	359489	477322

Liability	Line code	At the beginning of the year	At the end of the period
1	2	3	4
I. Equity			
Registered (share) capital	1400	560,00	560,00
Additional capital	1410		
Reserve capital	1415		
Retained earnings (uncovered loss)	1420	-492.10	-482.50
Unpaid capital	1425		
Total section I	**1495**	67.90	77.50
II. Long-term liabilities target finansuvannyata software	**1595**		
III. Current liabilities			
Short-term bank credits	1600		
Current payables by: long-term liabilities	1610		
goods, works, services	1615	20,00	20,00
estimated budget	1620	58.20	56.20
including income tax	1621	0.00	11.60
Insurance settlements	1625		
calculation of wages	1630		
future revenues	1665		
Other current commitments	1690	112.40	112.40
Total section III	1695	190.60	188.60
IV. Liabilities associated with non-current assets held for sale and disposal groups	**1700**		
Balance	**1900**	258.50	266.10

2. Income Statement
on December 31, 2017

Form number 2nd Code for DKUD 1801007

Article	Line code	For the reporting period	Over the same period the previous year
1	2	3	4

Net income from sales of products (goods and services)	2000	635	715
Other operating income	2120	76	46
Other income	2240		
Total revenue (2000 + 2120 + 2240)	**2280**	711	761
Cost of products (goods and services)	2050	-589	-589
Other operating expenses	2180	-58	-58
Other expenses	2270		
Total costs (2050 + 2180 + 2270)	**2285**	-647	-647
Financial result before tax (2280 - 2285)	2290	64	114
Income tax	2300	11.52	20.52
Net profit (loss) (2290 - 2300)	**2350**	52.5	93.5

Head _____ (signature) Olinchenko NM (Initials, surname)

Chief Accountant _____ (signature) Vasco AM (Initials, surname)

Appendix E

Table E.1

Summary of the characteristics of information systems

Name	Year	data retention	OS	Free Trial	Acquisition
Bitrix24	2008	cloudy; physical	MacOS; Windows; linux; Android	So	50000 UAH
FreshOffice	2012	cloudy; physical	MacOS; Windows; Linux	No	From 125,000 UAH
Salesforce	1999	cloudy	MacOS; Windows; Linux	No	-
1C: CRM	1991	cloudy; physical	MacOS; Windows; linux;	No	Based on interviews

Appendix F

Table F.1

Assessment of internal environment of LLC «SNV Plus»

Sphere	Factor	Rating	
		Llc. "SNV Plus"	LLC "UKRSTK"
Cadre	Management	Qualified managers to address planning and control; Dominant goal is to guide the optimization of the production process for profit organization	Qualified managers to address planning and control; The primary purpose - the expansion of activities
	Motivating employees	Direct piecework wage system; Competitive salary for the industry; Motivating employees only through financial rewards (mostly holidays) and verbal praise from management (board "Employee of the Month"); The inability to take leadership positions, as their number is minimal, and they are busy	Direct piecework wage system; Competitive salary for the industry; Motivating employees only through financial rewards (mostly holidays) and verbal praise from management (board "Employee of the Month"); The inability to take leadership positions, as their number is minimal and they are busy
	management Style	Use authoritarian management style; The best style, given the business, its scope and the number of staff	Use authoritarian management style; The best style, given the business, its scope and the number of staff
	Requirements for working personnel	Highly qualified staff, preferably with experience that meets current and future goals of the organization	Highly qualified staff, preferably with experience that meets current and future goals of the organization
	Staff and hiring new staff	In the company of 20 persons including 3 personnel on a regular basis; Low staff turnover (due to closure lying near the city); Ability-training directly to production (but only clarification of the specific characteristics, lack of full school training)	High staff turnover; The possibility of passing directly training before production
Organization	The effectiveness of the current organizational structure	Linear-functional organizational structure; The structure is optimal in terms of scale and number of employees of the organization; The company distributed the rights and responsibilities of employees, which is reflected in job descriptions;	Linear-functional organizational structure; The structure is optimal in terms of scale and number of employees of the organization; The company distributed the rights and responsibilities of employees, which is reflected in job descriptions;
	Communications	The lack of an effective system of informing staff; By staff communicated only targets	The lack of an effective system of informing staff; By staff communicated only targets
	Decision-making	Decisions are made by senior management of the company through "brainstorming" or peer review activities	Decisions are made by senior management of the company through "brainstorming" or peer review activities
	Organizational culture	The team follows a purely formal working relationship, boss –	The team follows a purely formal working relationship,

		subordinate	boss – subordinate
Production	Equipment of modernization and production equipment	The current fleet of production equipment; Periodic modernization of production equipment (the last was in 2014)	Modern production equipment Park
	Quality control	A thorough quality control of the finished product (climatic tests, checking reliability); Having our own service center for external and internal use	A thorough quality control of the finished product (climatic tests, checking reliability)
	Capacity utilization	The presence of large industrial facilities; Little their workload associated with inefficient search for new customers with low and work with a client base	The presence of large industrial facilities; High load capacity
	The cost of purchase of raw materials and dependence on suppliers	Great choice of suppliers of components; High availability of production materials; Some resources of the high cost of purchase, but overall prices are reasonable	Great choice of suppliers of components; High availability of production materials; Some resources of the high cost of purchase, but overall prices are reasonable
	Storage inventories and finished products	Having our own warehouse, where to send stored as finished products and components production received	Having our own warehouse, where to send is stored as finished products and components production received
	R & D	No system of research and innovation, which is due to focus production company	Having developed R & D department
Marketing	Products and its benefits	Contract manufacturing and installing windows (products); production structures with glass balconies; production input groups of aluminum, fiberglass etc. Delivery and Installation of dealers and retail, processing slopes; Construction waste that remains after installation, processing balconies and more.	Contract manufacturing and installation of metal-plastic constructions; production input groups of aluminum, fiberglass etc. Delivery and Installation of dealers and retail.
	Business department	Lack of Marketing; Progress is due to the Internet and a long presence in the market	Present marketing department; Progress comes through the Internet site of the company and positive image
	company image	Ltd. "START PLUS" has established itself as a reliable partner, always fulfills all the conditions in time	The positive image as a reliable producer; There are publications in the media
	The life cycle of products	High life cycle of products, at least 10-15 years	High life cycle of products, at least 10-15 years
	After-sales service	The service center provides after-sales service products	Ability to send product back for replacement
	Pricing policy	The company's products have an average industry pricing	The company's products have an average industry pricing
	Shipping	Developed own logistics department; Ability to work and deliver the	Uses courier services

		goods across Ukraine	
	The ability to diversify	The company can expand its business	Expansion of activities through the development of new products
Finances	Founder	Director M. Olinichenko	Director General Korneev KE
	Cigarette taxes	Enterprise during and in compliance with all the standards and procedures for conducting tax deductions	Enterprise during and in compliance with all the standards and procedures for conducting tax deductions
	The use of short-term and long-term capital	The company uses its capital for long-term opportunities for future investments in the modernization of equipment; As well as short-term capital for the purchase of necessary components and materials	It uses short-term capital for the purchase of materials and components as well as for repair and modernization of equipment; Long-term capital is used to enter new markets
	The cost of capital	Currently registered capital is 35 thousand. UAH., Which is the industry averages; Monthly income of the company is 50 thousand. UAH., But there is tendency to decline due to low load capacity	-
	Accounting	Accounting for the enterprise meets the generally accepted requirements; Found all the necessary software for the account of the company	Accounting for the enterprise meets the generally applicable requirements; Found all the necessary software for the account of the company
	Prospects	Long-term profit growth division provides service and repair service is the only department whose quarterly profit from changes	Further diversification and expansion of influence
	Hardware equipment	Use different computer technology including: computers, servers and all the surrounding peripherals	Use different computer technology including: computers, servers and all the surrounding peripherals
	Software	Windows Server Windows XP Microsoft Office Enterprise AutoCAD and P-CAD	-

Appendix G

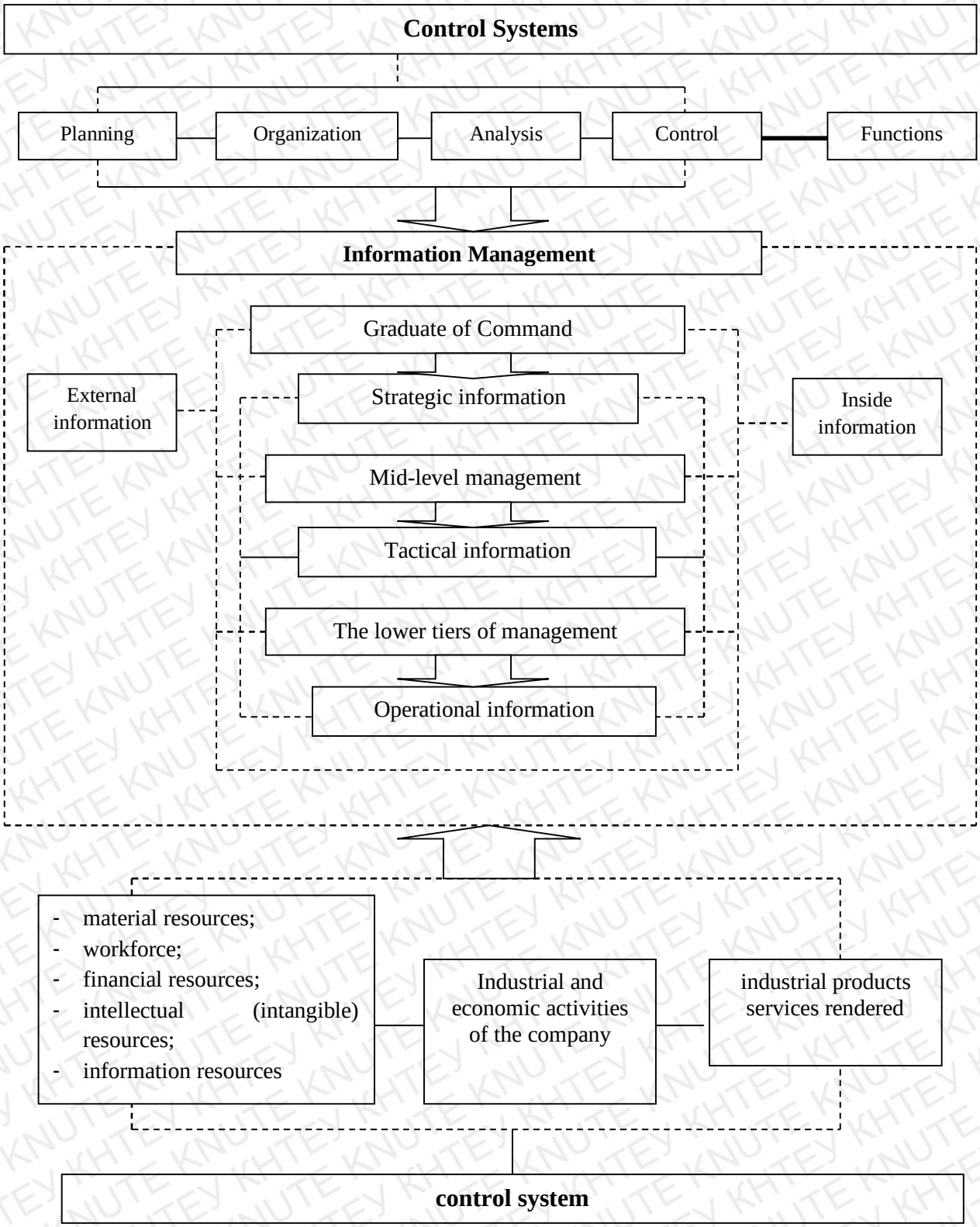


Figure 1.2. Business management scheme based Information Management *[Authoring]*

Appendix H

Table H.1

Financial Performance of LLC «SNV Plus» for the 2015-2017, th.UAH.

Characteristic	2015	2016	2017	Deviations +/- thousand UAH		
				2016 / 2015	2017 / 2016	2017 / 2015
Net income (revenues) from sales of products (goods and services)	660	715	635	55	-80	-25
Other operating income	44	46	76	2	30	32
Total revenue	704	761	711	57	-50	7
Cost of products (goods and services)	-580	-589	-589	-9	0	-9
Other operating expenses	-65	-58	-58	7	0	7
Total costs	-645	-647	-647	-2	0	-2
Financial result before taxation	59	114	64	55	-50	5
Income tax	10.6	20.5	11.5	9.9	-9	0.9
Net profit (loss)	48.4	93.5	52.5	45.1	-41	4.1

[Financial statements]

Table H.2

Horizontal analysis of the balance of LLC «SNV Plus» for the 2015-2017

Indexes	Absolute values, th. UAH			Absolute change +/- thousand. UAH.			Growth rate,%		
	2015	2016	2017	2016 / 2015	2017 / 2016	2017 / 2015	2016 / 2015	2017 / 2016	2017 / 2015
Assets (property company)									
I. Non-current assets	298741	292931	288909	-5,810	-4,022	-9,832	-2.0	-1.4	-3.4
Intangible assets:	221	173	127	-48	-46	-94	-27.7	-36.2	-74.0
-initial value	536	598	627	62	29	91	10.4	4.6	14.5
- accumulated depreciation	(315)	(425)	(500)	-110	-75	-185	25.9	15.0	37.0
Incomplete capital investments	0	0	191	0	191	191	0.0	100.0	100.0
Fixed assets:	241467	235705	231133	-5,762	-4,572	-10,334	-2.4	-2.0	-4.5
- initial value	301196	302833	306038	1637	3205	4842	0.5	1.0	1.6
- wear and tear	(59729)	(67,128)	(74,905)	-7,399	-7,777	-15,176	11.0	10.4	20.3
Long-term financial investments:	57053	57053	57053	0	0	0	0.0	0.0	0.0
II. Current assets		66558	188413	-2,223	121855	119632	-3.3	64.7	63.5
Inventories	45707	34785	40563	-10,922	5778	-5,144	-31.4	14.2	-12.7
Inventories	3169	3293	8994	124	5701	5825	3.8	63.4	64.8
Unfinished production	12818	10588	2690	-2,230	-7,898	-10,128	-21.1	-293.6	-376.5
Final product	22250	13799	24625	-8,451	10826	2375	-61.2	44.0	9.6
Goods	7470	7105	4254	-365	-2,851	-3,216	-5.1	-67.0	-75.6
Accounts receivable for goods, works and services:	8569	9697	6846	1128	-2,851	-1,723	11.6	-41.6	-25.2
Receivables on settlements:	8569	9697	6846	122	86625	86747	5.7	97.6	97.7
for advances paid	467	2116	81026	1649	78910	80559	77.9	97.4	99.4
the budget	1562	35	7750	-1,527	7715	6188	-4362.9	99.5	79.8
including income tax	193	30	30	-163	0	-163	-543.3	0.0	-543.3
Other current receivables	7119	3146	900	-3,973	-2,246	-6,219	-126.3	-249.6	-691.0
Cash and cash equivalents:	45	16123	51328	16078	35205	51283	99.7	68.6	99.9
Cash	2	2	1	0	-1	-1	0.0	-100.0	-100.0
Bank accounts	43	16121	51327	16078	35206	51284	99.7	68.6	99.9
Other current assets	5312	656	0	-4,656	-656	-5,312	-709.8	0.0	0.0
BALANCE	367522	359489	477322	-8,033	117833	109800	-2.2	24.7	23.0
Liabilities (sources of formation)									
I. Equity	318175	318596	228859	421	-89,737	-89,316	0.1	-39.2	-39.0
Registered (share) capital	218276	218276	218276	0	0	0	0.0	0.0	0.0
Additional capital	98733	98733	8401	0	-90,332	-90,332	0.0	-1075.3	-1075.3
Reserve capital	83	0	0	-83	0	-83	0.0	0.0	0.0
Retained earnings (uncovered loss)	1083	1587	1603	504	16	520	31.8	1.0	32.4
II. Long-term liabilities and provision	143	209	2780	66	2571	2637	31.6	92.5	94.9
Other long-term liabilities	0	0	300	0	300	300	0.0	100.0	100.0
Long maintenance	0	0	2480	0	2480	2480	0.0	100.0	100.0
Targeted financing	143	209	0	66	-209	-143	31.6	0.0	0.0
III. Current liabilities and ensuring	49294	40684	245683	-8,610	204999	196389	-21.2	83.4	79.9

Short-term bank credits	24050	19363	61442	-4,687	42079	37392	-24.2	68.5	60.9
Current payables:	9298	21321	157708	12023	136387	148410	56.4	86.5	94.1
- for goods, services	15856	10376	15630	-5,480	5254	-226	-52.8	33.6	-1.4
-with budget	210	272	314	62	42	104	22.8	13.4	33.1
-zi insurance	1475	209	248	-1,266	39	-1,227	-605.7	15.7	-494.8
-with wage	1401	349	688	-1,052	339	-713	-301.4	49.3	-103.6
- obtained by advances	6212	10115	140828	3903	130713	134616	38.6	92.8	95.6
Other current commitments	0	0	26533	0	26533	26533	0.0	100.0	100.0
BALANCE	367522	359489	477322	-8,033	117833	109800	-2.2	24.7	23.0

[Financial statements]

Appendix H

Table H.3

Vertical analysis of the balance of LLC «SNV Plus» for the 2015-2017

Indexes	Absolute values, th. UAH.			Structure,%		
	2015	2016	2017	2016 / 2015	2017 / 2016	2017 / 2015
Assets (property company)						
I. Non-current assets	298741	292931	288909	81.29	81.49	60.53
Intangible assets:	221	173	127	0.06	0.05	0.03
-initial value	536	598	627	0.15	0.17	0.13
- accumulated depreciation	(315)	(425)	(500)	-0.09	-0.12	-0.10
Incomplete capital investments	0	0	191	0.00	0.00	0.04
Fixed assets:	241467	235705	231133	65.70	65.57	48.42
- initial value	301196	302833	306038	81.95	84.24	64.12
- wear and tear	(59729)	(67,128)	(74,905)	-16.25	-18.67	-15.69
Long-term financial investments:	57053	57053	57053	15.52	15.87	11.95
II. Current assets	68781	66558	188413	18.71	18.51	39.47
Inventories	45707	34785	40563	12.44	9,68	8.50
Inventories	3169	3293	8994	0.86	0.92	1.88
Unfinished production	12818	10588	2690	3.49	2.95	0.56
Final product	22250	13799	24625	6.05	3.84	5.16
Goods	7470	7105	4254	2.03	1.98	0.89
Accounts receivable for goods, works and services:	8569	9697	6846	2.33	2.70	1.43
Receivables on settlements:	2029	2151	88776	122	86625	86747
for advances paid	467	2116	81026	0.13	0.59	16.98
the budget	1562	35	7750	0.43	0.01	1.62
including income tax	193	30	30	0.05	0.01	0.01
Other current receivables	7119	3146	900	1.94	0.88	0.19
Cash and cash equivalents:	45	16123	51328	0.01	4.48	10.75
Cash	2	2	1	0.00	0.00	0.00
Bank accounts	43	16121	51327	0.01	4.48	10.75
Other current assets	5312	656	0	1.45	0.18	0.00
BALANCE	367522	359489	477322	100.00	100.00	100.00
Liabilities (sources of formation)						
I. Equity	318175	318596	228859	86.57	88.62	47.95
Registered (share) capital	218276	218276	218276	59.39	60.72	45.73
Additional capital	98733	98733	8401	26.86	27.46	1.76
Reserve capital	83	0	0	0.02	0.00	0.00
Retained earnings (uncovered loss)	1083	1587	1603	0.29	0.44	0.34
II. Long-term liabilities and provision	143	209	2780	0.04	0.06	0.58
Other long-term liabilities	0	0	300	0.00	0.00	0.06
Long maintenance	0	0	2480	0.00	0.00	0.52
Targeted financing	143	209	0	0.04	0.06	0.00
III. Current liabilities and ensuring	49294	40684	245683	13.41	11,32	51.47
Short-term bank credits	24050	19363	61442	6,54	5.39	12.87
Current payables:	9298	21321	157708	2.53	5.93	33.04
- for goods, services	15856	10376	15630	4.31	2.89	3.27
-with budget	210	272	314	0.06	0.08	0.07
-zi insurance	1475	209	248	0.40	0.06	0.05
-with wage	1401	349	688	0.38	0.10	0.14
- obtained by advances	6212	10115	140828	1.69	2.81	29.50
Other current commitments	0	0	26533	0.00	0.00	5.56
BALANCE	367522	359489	477322	100.00	100.00	100.00

[Financial statements]

Appendix J

Fig. J.1

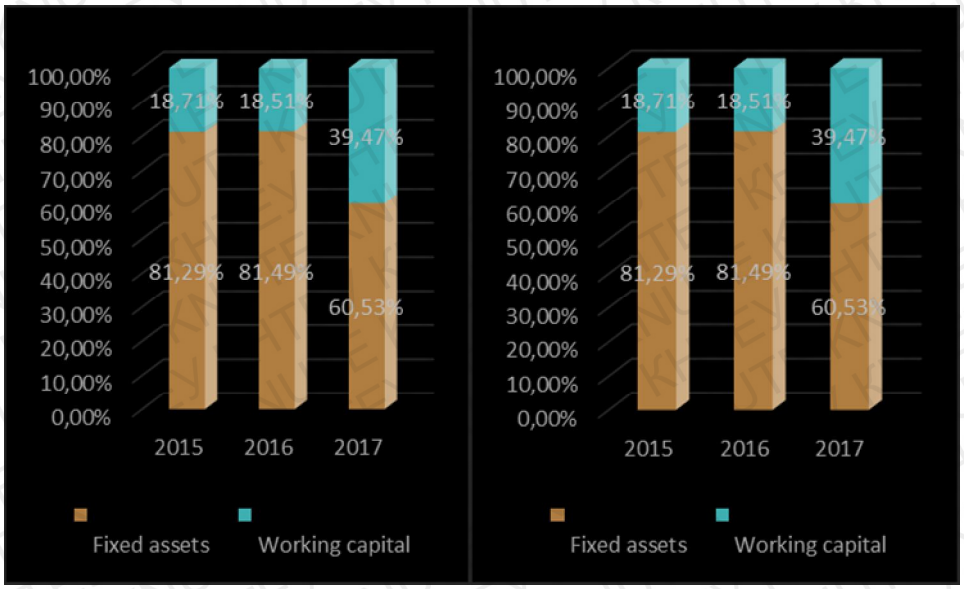


Fig. J.1. The structure of assets and liabilities of the balance of LLC «SNV Plus» for the 2015-2017 biennium., th. UAH

[Financial statements]

Appendix K

Table K.3

Matrix Hlaystera Company LLC «SNV Plus»

Define the problem	The essence of the problem	Signs manifestations problems	Recommendations for methods of solving problems	Expected results
Organizational level				
Low load capacities of the enterprise	Because of inefficient work with current clients and seeking new defective no orders for production	The negative dynamics of revenue	The introduction of the enterprise information system	Systematics database of existing customers and finding new work will increase the number of contacts to manufacture products that will improve profit by ~ 10-15%
level unit				
Lack of necessary information software	The lack of effective management control and accounting clients to work with them	The fall in the number of contracts for production from ~ 50 to ~ 20	The introduction of the enterprise information system	Increase the efficiency of planning and building business processes when working with clients manager
The level of individual				
Ineffective work projects manager	Improper planning manager enough experience and lack of information systems that provide support	Loss of customers due to improperly constructed and inefficient business processes	Adjustments motivation	Creating customer base, signing new contracts for production

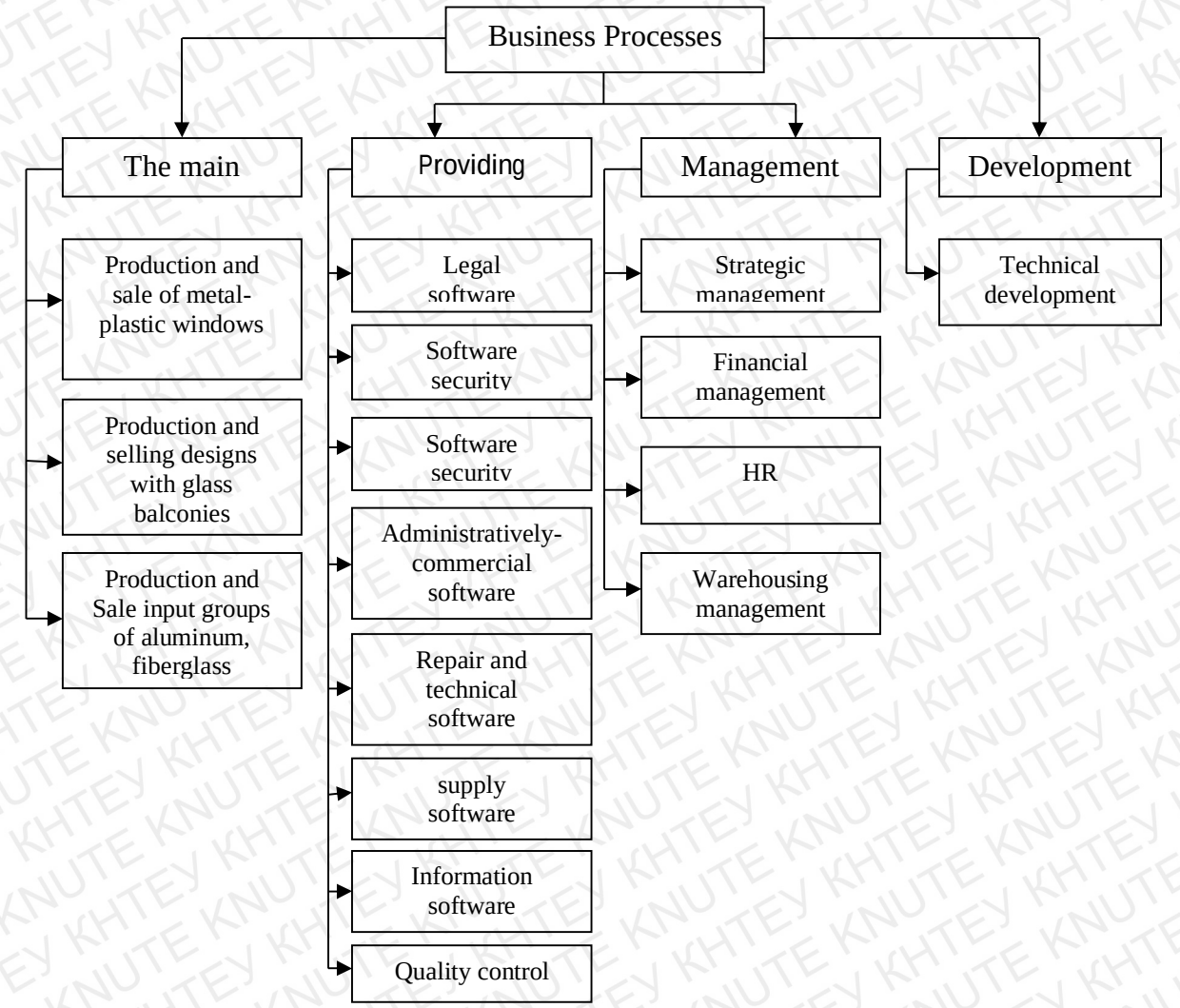
Appendix L

Table L.1

Model cash flow and project performance

	Start	Period (month)											
	0	1	2	3	4	5	6	7	8	9	10	11	12
Invetsytsiyi (cost CRM system implementation and technical support), th. UAH	283.74												
Increase profits th. UAH		-1.76	-1.76	71.26	71.26	71.26	71.26	71.26	71.26	71.26	71.26	71.26	71.26
Discount rate% a year	25,00												
Discount rate% during	1.88												
Discount rate	1	0.98	0.96	0.95	0.93	0.91	0.89	0.88	0.86	0.85	0.83	0.82	0.8
Discounted operating income th. UAH		-1.7	-1.69	67.39	66.15	64.9	63.74	62.56	61.41	60.28	59.17	58.08	57.01
The value of these discounted investments, th. UAH	283.74												
Discounted cash flow for the period (NPV), th. UAH	-283.74	-1.7	-1.69	67.39	66.15	64.9	63.74	62.56	61.41	60.28	59.17	58.08	57.01
CHTS th. UAH	-283.74	-285	-287.15	-219.76	-153.61	-88.68	-24.94	37.6	99	159.31	218.47	276.6	333.56
NPV, th. UAH	333.56												
ID (profitability index) UAH	2.18												
Term pays bridge, month	6.4												

Appendix M



Classification of business processes of LLC «SNV Plus»