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Bachelor's Qualification Work

SECURITY POLICY OF THE COMPANY

(on the basis of _____ Sunrise_Production_____)

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INTRODUCTION

Relevance of the topic. Any governmental or commercial institution is interested in preserving information that can cause harm to it if it falls into the hands of intruders or is destroyed. For government institutions such information is classified as "Secret", for commercial enterprises it is classified as "Commercial Secret" or "Valuable Information".

Information requiring protection is of potential interest for the intruder - as a rule, these are important contracts, client lists, databases of accounting programs, passwords and keys of the "client-bank" system, communication channels with departments, etc. The media reports about information leaks in the Internet and Dark Net, while intruders are very rarely found. Most institutions, on the other hand, conceal the origins of electronic documentation to preserve their business reputations.

One of the problems with system security evaluation criteria was a misunderstanding of network mechanisms. Due to the above, the application of new methods through the introduction of new security management systems will not lose its relevance for a very long time.

The purpose of the thesis research is to comprehensively and thoroughly investigate information security in the company. According to the goal, the following tasks are set:

- To describe the problems of modern cybersecurity, analysis and solutions;
- to consider video production companies and video production security management issues;
- give a general description of Sunrise Production;
- to analyze financial and economic indicators of Sunrise Production;
- analyze the current state of enterprise cybersecurity and digitalization issues;
- to investigate cloud technologies as a tool to ensure secure operations and improve the efficiency of the company;
- to determine the functioning of Bitrix 24 program as a tool to improve the efficiency of Sunrise Production employees.

The object of the study is the information that must be secured and do everything to ensure that it is reliably protected.

The subject of the study is a comprehensive system of information protection company SUNRISE PRODUCTION.

Research methods. We used the following general scientific methods: analysis, comparison, systematization and generalization. The method of analysis allowed to comprehend the main approaches to the definition and understanding of the conceptual apparatus of the study. The method of comparison allowed to consider the object of research in its interdisciplinary context. The method of systematization allowed to build logically and systematize the identified theories and factual data. The method of generalization allowed to formulate meaningful conclusions.

Structure and size of the work. The structure and scope of the study are conditioned by the goals and their objectives. The work consists of an introduction, three chapters, which include seven divisions, conclusions, a list of used sources (50 units). The total volume of the thesis research is 63 pages.

CHAPTER 1. THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF COMPANY SECURITY POLICY

1.1 Problems of modern cybersecurity, analysis and solutions

In the current stage of science and technology development in every developed state, there is a growing need to strengthen cybersecurity and make it one of the most important sectors of society. Because of attacks on critical infrastructure facilities, the development of the Internet of Things, the 4th industrial revolution, cyberattacks, and increased global instability, there is a need for the development of the cybersecurity industry [42, p.265]. As a result of the extremely widespread use of modern information technology in all spheres of its existence, society has become vulnerable to cyber influences, so the need for non-powerful control and management of critical infrastructure facilities, as well as individual citizens or their associations.

Information flows that are transmitted, stored and processed in cyberspace are constantly growing and need to be adequately protected from unauthorized criminal access. The issue of cyber security is on the agenda for many countries around the world. Cyberspace is now seen as an important security imperative, as the economic, military, social and other spheres of government depend on its implementation.

The understanding of new challenges that have arisen in the modern information age and the need to neutralize them led to the emergence of the concept of "cyber security. It is believed that this concept first appeared in the mid-90s, when the U.S. government began to explore this topic [4]. For a comprehensive review of the issue, let us analyze the concepts of "cybersecurity" and "cyberspace".

Scientific approaches share the following concepts of "cyberspace":

1) according to the international standard, cyberspace is a habitat resulting from the interaction of people, software and services on the Internet through technological devices and networks connected to them, which does not exist in any physical form [30] ;

2) according to the U.S. regulatory framework, cyberspace is an area characterized by the ability to use electronic and electromagnetic means to memorize, modify and exchange data through networked systems and associated physical infrastructure [13];

3) according to the official documents of the European Union, cyberspace is a virtual space in which the electronic data of the world's personal computers circulate [32];

4) according to official documents of the United Kingdom cyberspace is all forms of network, digital activity, which includes content and actions carried out through digital networks [23];

5) according to official documents of Germany, cyberspace is all information infrastructure available through the Internet beyond any territorial boundaries [41].

Thus, cybersecurity is:

- a set of special actors of cyber security, the means and methods used by them, as well as a set of related interrelated legal, organizational and technical measures carried out by them [25];

- a set of cyber security elements coordinated by tasks, which are completed and deployed according to a unified plan and design in cyber space in order to ensure cyber security of information, telecommunications and information and telecommunication systems [20];

- the state of protection of state electronic information resources in cyberspace from the risk of extraneous influence, detection and prevention of various external interference through information systems, and threats to national and personal interests [14, p. 575];

- state of protection of vital interests of an individual and citizen, society and state in cyberspace, in which unhindered creation, collection, receipt, storage, use, distribution, protection of information is possible, and in the narrow sense - the state of an individual, society and state, where there is no danger [13];

- the state of the ability of the individual, society and state to prevent and avoid directed, primarily unconscious, negative influence (management) of information [45];

- the state of protection of the vital interests of an individual, society and the state in conditions of use of computer systems and/or telecommunication networks, in which damage is minimized due to: incompleteness, untimeliness and unreliability of the information used; negative information influence; negative

consequences of information technology functioning; unauthorized distribution, use and violation of the integrity, confidentiality and availability of information [10].

Thus, cyber security in the general sense is the basis of national security, which forms the protection of the state, society and the population of the country in cyberspace through the creation of legitimate mechanisms to ensure cyber security.

It should be noted that in recent years in Ukraine cyber attacks have also become more frequent, which, among other things, are caused by national features of economic activity, such as the lack of an appropriate legal framework, the large proportion of businesses that use unlicensed accounting software products, the neglect of the rules of protection of automated workplaces, the marriage of accounting specialists knowledge of the basics of cybersecurity[2].

However, the problems of cybersecurity (identification and grouping of cyberthreats, taking measures to minimize or eliminate them, building an adequate system of protection of accounting information at the enterprise, etc.) to date has been little researched. Many of them, against the background of increased competition and the invention of new information technologies, remain unresolved and require careful study, especially in the context of the domestic peculiarities of accounting in enterprises.

First of all, we should note that the deepening of automation of accounting work is an unavoidable and, in general, a positive phenomenon, because it allows you to significantly save resources of the enterprise, improve the quality of information processing, flexibility, mobility, innovativeness and efficiency of specialist work, accelerate its digital transformation, provide access to a wide choice of modern. programs, cloud solutions and other tools of information technology. But one of the negative phenomena of the use of computer technology is the vulnerability of credentials to cyber threats, which can be minimized by applying the right methods of protection.

A CyberEdge Group survey of information technology security workers found that an average of 78% of cyber threats were successful in 2020 (about 63% of all businesses were exposed to such threats [24]), with Spain (93.7%), Saudi Arabia (91.5%) and Colombia (87.9%) being the leading countries in this context (Figure 1.1).
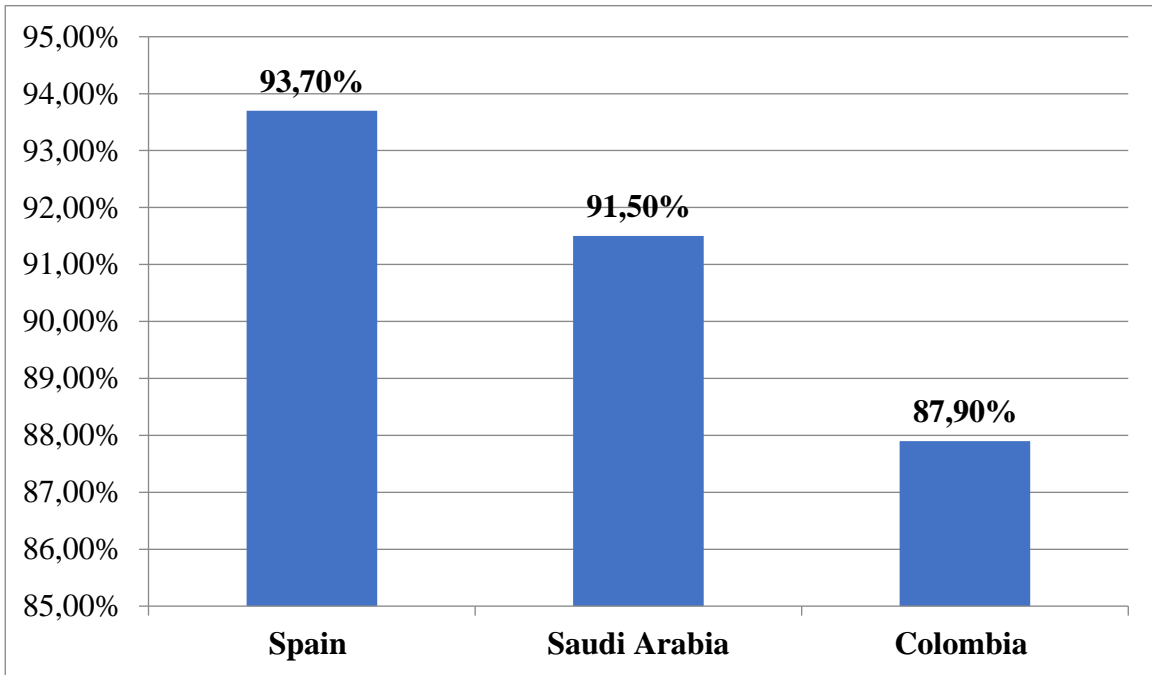
Fig. 1.1 Number of successful cyber attacks in 2020 in % [24].

The main threats nowadays are malware, phishing attacks, cybercriminals, account abuse (including identity theft), denial of service (DoS/DDoS attacks), spam, botnets, data breaches, and insider threats. identity theft), attacks on web applications, spam, botnets, data breaches, insider threats, physical manipulation (data corruption, theft, loss), information leakage, cryptojacking (a new type of threat that involves unauthorized use of another's computer for cryptocurrency) and cyberspy. and the suppliers of cyber defenses as of 2021 are Cisco, Palo Alto Networks, Fortinet, and Cisco Point [24].

Websites and web applications, servers (physical and virtual) and data storages are the most protected from cyberthreats in enterprises, while laptops and mobile devices are the least protected. To properly assess potential risks, professionals must familiarize themselves with current and emerging technologies. Controlling unauthorized access to records within an organization is an important component of internal controls. Access and password policies, encryption, digital signatures, disk locks, firewalls, and digital certificates are examples of controls that should be identified, documented, communicated, and tested when evaluating the effectiveness of controls.

1.2 Video Production Enterprises and Video Production Security Management Issues

Production implies the creation of resources - tangible (raw materials, products) or intangible (ideas, information), allowing to eventually obtain a product or service (finished product). [14]

In order to sell a product or service - you need your audience to know about that service. Creating promotional video clips for TV and websites - solve this problem. Now video content is 26% more effective than static. In commerce and services - this is the most effective way to improve the effectiveness of advertising. Such as increasing the number of requests, conversion rate, clickability, brand awareness and interaction with content.

The goal of the video production enterprise is to make business better [43]. But this term is almost never used in production, but in the film, media industry it is always used. Here, production refers to the process of creating various media products (audio, video, animation, etc.). There are several types of media content that belong to production:

- videos;
- films;
- radio and television programs;
- audio recordings;
- presentations [2].

Production is used to increase brand awareness and consists of selecting a team, writing a script and choosing music, selecting costumes, applying makeup, filming, editing, dubbing, and other technical filming moments. To get quality material, which will interest the target audience and attract the attention of potential customers, the production should be carried out by professional specialists using appropriate technology and quality site, which at first glance will give the client confidence and trust.

Video production is traditionally divided into three large stages, each of which includes many stages. However, in practice there are grounds for singling out one more, additional stage, so the video production process preceding pre-production looks like this (Fig. 1.2).
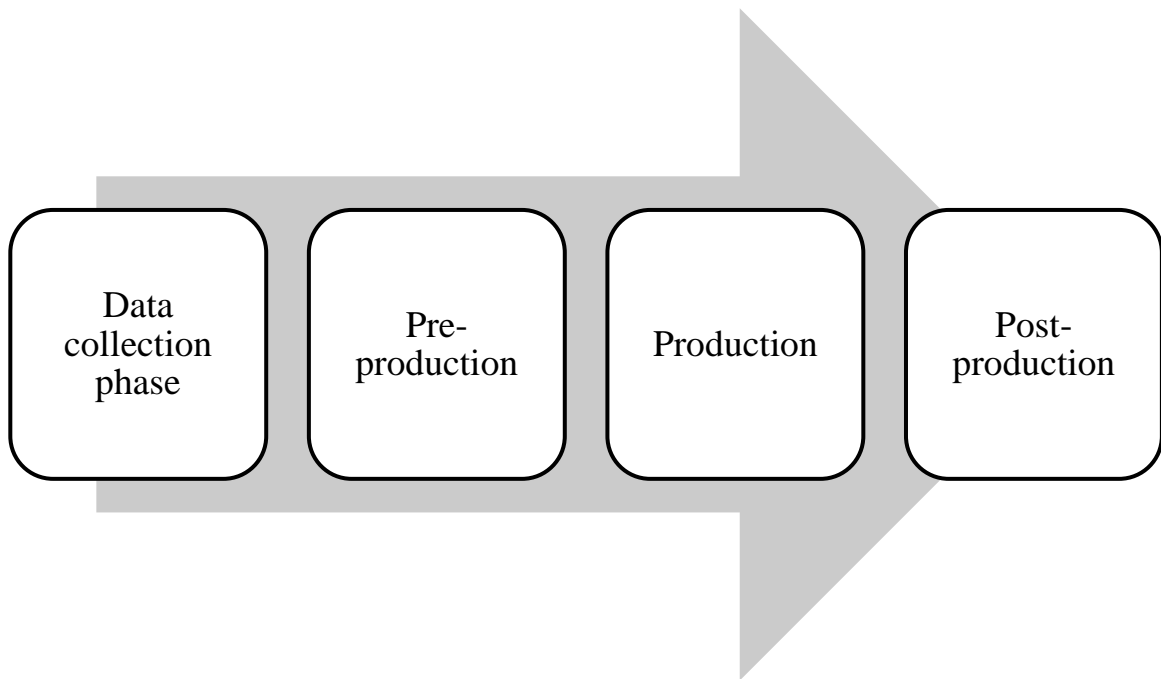
Fig. 1.2 Stages of video production [1;2]

In order to reveal the issue of video production safety management, it is necessary to characterize each technological and organizational aspect of video production in detail.

Information gathering stage. Work on a video project starts with negotiations with the client and goal setting. From there, the client's goals are used to gather information from the underlying subject. At this stage, a complete package of information about the company is collected, every detail counts.

Such information is:

- values and mission of the organization;
- advertising and PR materials;
- preliminary videos;
- printed materials of the organization;
- marketing materials, etc.

When the information is collected, move on to the briefing stage.

Brief (instruction, summary) - a brief written form of the consent order between the parties planning to cooperate, where the main parameters of the future software, graphic, media or any other project are prescribed [22].

Brief is a document that has no clearly standardized structure, so each organization makes it taking into account its own experience and the peculiarities of a particular situation. In SUNRISE PRODUCTION company, the brief can be divided into 3 key information blocks, each of which has its own task:

1. The first block is focused on the information about the company, its purpose is to form an idea about the client's organization, it is necessary to reflect the values of the company and its features, in addition, the information about the organization helps to develop a unique style, in accordance with which the video will be produced;

2. The second block should be characterized as a subject matter, it is aimed at collecting days about the subject matter, which is to take a key place in the future video. This is necessary to identify the strengths and weaknesses of the object of advertising, its features and specific characteristics, which will present the most favorable light;

3. The third block is devoted to the audience. Here we are talking about the audience of the firm, as well as the audience of the object featured in the commercial.

After filling out the brief the key idea is formulated by the client, after its approval comes the next stage of production. The preparatory stage (Pre-production). The preparatory stage is basic, because the success of the whole project depends on the quality of the work. At the preparatory stage, a number of important organizational issues are addressed, for example, the selection of locations for shooting with all the requirements, light, sound and noise, the situation and the possibility of shooting in the selected location, approval of the actors and decorations.

Shooting (production). Generally accepted characteristics of the shooting process does not exist, since each production studio comes to a particular scheme of its organization independently, but it is important to emphasize that this stage is a check on the quality of work conducted in the previous stages of planning and development of video. Shooting period requires the maximum involvement of all the links of the production chain, if any details were not taken into account in the planning, directly during the filming, problems may arise, as the shooting process is complex and there is a clear adherence to a preconceived plan. Any shortcomings can lead to chaos on the set, deviations from the schedule and unplanned financial costs.

Post-production. This stage is a work on the footage and bringing it to the final state. This stage is usually the longest, depending on the size of the project, it may include the following stages: editing, interframe editing, animation, color correction (Color grading).

Consequently, it is obvious that in the long process of video production, many people have access to all the information, so to manage the security of video production, it is necessary to control access to this information, means a variety of organizational programs, including Bitrix 24.

CHAPTER 2. ANALYSIS OF THE PROBLEM OF THE COMPANY'S SECURITY POLICY ON THE EXAMPLE OF SUNRISE PRODUCTION

2.2 General characteristics of Sunrise Production

Sunrise Production is a video production studio that manages projects. Direct technical tasks are performed by external specialists and organizations. The producer assembles an appropriate team and selects appropriate performers within budget. The ability to manage and coordinate the project team and to specialize in management functions is an undeniable advantage. The studios select all project specialists so that any idea can be brought to life.

The studio unites specialists from different fields (PR-managers, marketing experts, copywriters) and video production professionals (directors, scriptwriters, cameramen, sound directors, etc.). We create all kinds of videos, from commercials and clips to movies. We work with startups, small businesses and large corporations.

Sunrise Production was founded in May 2011 and was created in accordance with the Commercial and Civil Codes and other regulations of Ukraine. Sunrise Production is located at Kurenivska street 18, Kyiv [26].

Sources of formation of the property of the enterprise:
- cash and material contributions of the founders;
- income received from sales of products and services, as well as other economic activities.

The subject of activity of LLC "Media Expert Plus" is providing a full range of high quality advertising services.

Primary sales channel is personal sales and a small amount of goods is sold as a result of exhibition activities.

The company Sunrise Production:
- independently carries out economic activities, disposes of profits. The economic activities of the company is carried out by the staff, under contracts. The company is free to choose the subject of the contract, the definition of

commitments, other conditions of economic relations, which are not contrary to applicable law;

- independently plans its activities and determines the prospects for development based on the real consumer demand, the need for social development of the enterprise, increasing the personal profits of its employees;

- if necessary, can purchase the necessary resources directly from manufacturers, wholesale and retail trade, auctions and logistics organizations, through commercial centers, wholesalers, citizens;

- may lease, transfer, sell, and barter material goods and resources with other businesses and organizations. The supreme body of the company describes the bases and the procedure for writing off property from the balance sheet;

- performs works and renders services at prices determined independently or on a contractual basis, and in cases stipulated by the current legislation, at prices determined on a centralized basis.

The organizational structure of Sunrise Production is shown in Fig. 2.1.

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                          ┌─────────────┐
                          │  Director   │
                          └──────┬──────┘
        ┌────────────────────────┼────────────────────────┐
┌───────────────┐        ┌───────────────┐        ┌───────────────┐
│  Manager of   │        │ Art Department│        │Administration │
│  advertising  │        │               │        │               │
│   programs    │        │   Designer    │        │  Secretariat  │
│  Advertising  │        │   Copywriter  │        │  Accounting   │
│    agents     │        │               │        │               │
└───────────────┘        └───────────────┘        └───────────────┘
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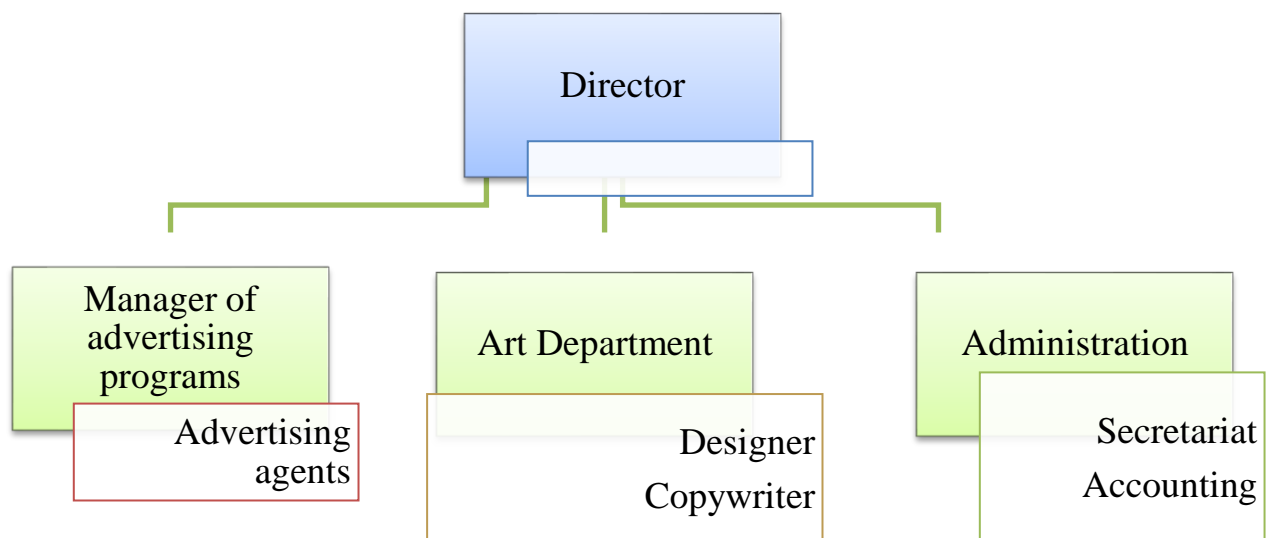
Fig. 2.1. Organizational structure of Sunrise Production [26].

The main purpose of the enterprise is to make a profit, as well as to achieve economic and social results through the systematic implementation of exhibition and educational activities to meet the aesthetic needs of consumers.

Stakeholders play an important role in the activities of the enterprise under study.

A stakeholder is a market entity that has an interest in the activities of the enterprise or in some areas of its activities, but this interest is not based on the desire to receive a net income. The main stakeholders of an enterprise are:

- creditors, who temporarily lend to the enterprise in exchange for a predetermined income and are interested in information that allows them to determine whether the loan payments will be made on time;
- managers of the enterprise, because financial information allows to make the most reliable assessment of the effectiveness of management of the enterprise;
- employees of the enterprise, interested in obtaining information about the company's ability to pay salaries, pensions and other payments on time
- suppliers, interested in information that allows them to determine whether amounts due to them will be paid on time;
- consumers (customers of the enterprise), interested in the stability of supply, as a consequence of the financial respectability of the enterprise;
- public and governmental organizations, because the welfare of the region's economic infrastructure depends on the successful functioning of the enterprise.

Let's analyze the stakeholders in Sunrise Production presented in table 2.2.

Table 2.2

Analytical characteristics of the enterprise's stakeholders [26]

Stakeholders	Interests / needs	Stakeholder power rank (1 - least important)	Stakeholder involvement rank (1 - least significant)
Customers	Satisfaction of own needs at the expense of production of the company	9	7
Competitors	Get convenient sales channels to promote your own products	1	2
Banks	Providing services for the company (opening a current account of the company, as well as cards for employees)	4	4
Media	Creating a positive image of the company	5	6
Public authorities	Meeting the needs of the state by providing real national income, compliance with state standards	2	1
Director	Maximize the company's profits, organize the effective operation of the company	8	10
Employees	Getting jobs, decent wages, providing all the necessary working conditions.	6	9
Controlling and regulatory authorities	Conducting activities in accordance with the law	3	3
Owner	Profit and business expansion	10	5

Having conducted the analysis, we can say that the main stakeholders of the company are: employees, clients, director.

To develop and support the concept of "transparency", Sunrise Production holds different events: one-time events with "fans" and people interested in the agency as potential clients. Open "Kreasnidanki", active communication on the company blog (Q&A), Skype-conferences, invitations to visit, videos from the office.

Activities:

1. Press releases - at least three press releases a month on thematic sites about advertising, design, marketing.

2. PR calendar - a calendar is created in the company and supplemented with events.

3. Publications about the work.

The coverage of Sunrise Production's commercial projects consists not only of post-releases, but also of periodic information about the project's progress, its development, interesting facts, unaccepted concepts.

Teaser - a few news items about the progress and start of the project.

Release - the final result in the form of design, copywriting, advertising concept.

4. Regular blog posts, Twitter, Facebook, news (2-3 times a week).

5. Organizing employee appearances at festivals, conferences, take-offs, planning sessions, etc.

6. Personal PR. Posting articles, participating in juries, quotes to papers.

7. Organizing creative breakfasts.

8. Organizing and conducting public events for partners, friends, foes and others.

9. Festivals. Monitoring of festivals. Preparation and sending of the agency's works to festivals and competitions.

New clients are referred to us by existing clients or through the social networks. We value recommendations as the most reliable resource, so we take even the smallest project seriously. A high level of work quality leads to a high level of project complexity in the future. It happens in a chain reaction: you do more than clients expect, and the next time they order more than you expect.

Sunrise Prod. is a Ukrainian video production studio, so that we work with TV channels such as Inter, Novy Channel, ICTV and STB.

For example, not long ago, our company spent 12 weeks working on the project of Mila Di - an Israeli singer from Lviv. We had been developing all stages of production for three music videos.

However, Sunrise Prod. is not limited to the Ukrainian market; we are assisted in finding foreign clients by the company AIR Media-Tech.

2.3 Analysis of financial and economic indicators of Sunrise Production

The analysis of the structure and changes in the value of the company's assets is performed by comparing the asset indicators of the balance sheet for 2018-2020 by asset type (Table 2.2).

The analysis of the assets of Sunrise Production shown in Table 2.1 shows the expansion of its business activities, as the coefficient of growth of the value of assets in 2020 is 1.58.

Table 2.2.

Analysis of the structure and dynamics of Sunrise Production assets [26]

№ s/n	Characteristic	2018, thous. UAH.	2019, thous. UAH.	2020, thous. UAH.	The ratio of 2020 to 2018	
					Absolute growth	Growth rate
1.	Non-current assets of all	390	524	1431	1041	3,67
1.1	Intangible assets	96	29	10	-86	0,10
1.2	Incomplete capital investments	-	-	811	-	-
1.3	Fixed assets	294	495	610	316	2,07
1.4	Other non-current assets	-	-	-	-	-
2	Current assets	16284	24153	24918	8634	1,53
2.1	Stocks	57	23	251	194	4,40
2.2	Cargo	4950	5300	8602	3652	1,74
2.3	Accounts receivable for goods, works, services	6447	9829	7878	1431	1,22
2.4	Accounts receivable by calculation	1138	569	405	-733	0,36
2.5	Cash and cash equivalents	3425	7722	4955	1530	1,45
2.6	Other current receivables	-	411	2772	-	-
2.7	Other current assets	248	284	50	-198	0,20
2.8	Deferred expenses	19	15	5	-14	0,26
3	Asset value	16674	24677	26349	9675	1,58

For the period under study the volumes of both non-current and current assets increased by 267% and 53% respectively. Decrease is noted only in the values of intangible assets and accounts receivable on settlements.

In Table 2.3 let us calculate the return on assets coefficient, which shows the share of total income in 1 hryvnia of the company's assets value.

Table 2.3.

Analysis of return on assets of Sunrise Production [26]

№ s/n	Characteristic	2018, thous. UAH.	2019, thous. UAH.	2020, thous. UAH.	The ratio of 2020 to 2018	
					Absolute growth	Growth rate
1.	The value of the company's assets	16674	24677	26349	9675	1,58
2.	Comprehensive income	28475	35251	70176	41701	2,46
4.	The amount of total income per 1 UAH. asset value	1,71	1,43	2,66	0,95	1,56

The value of assets of Sunrise Production and total income increased in 2020. Accordingly, the amount of comprehensive income per 1 UAH of the company's asset value grew by 56% (950 UAH). These configurations took place at the expense of the growth of aggregate income from the sale of products.

Let's analyze the structure and dynamics of cash income of the company in table 2.4.

Table 2.4.

Analysis of structure and dynamics of financial results of the company [26]

№ s/n	Characteristic	2018, thous. UAH.	2019, thous. UAH.	2020, thous. UAH.	The ratio of 2020 to 2018	
					Absolute growth	Absolute growth
1.	Net income from sales	28475	35251	70176	41701	2,46
2.	Cost of goods sold	20407	23633	47712	27305	2,34
3.	Cost of goods sold	8068	11618	22464	14396	2,78
4.	Other operating income	585	1836	1842	1257	3,15
5.	Administrative costs	1155	4787	14145	12990	12,25
6.	Selling expenses	1175	2457	2557	1382	2,18
7.	Other operating expenses	6387	7869	6628	241	1,04
8.	Financial result from operating activities (row 3 + row 4 - row 5)	-64	-1659	976	1040	15,25
9.	Other financial income	75	36	34	-41	0,45
10.	Financial expenses	-	-	-	-	-
11.	Financial result from ordinary activities before taxation	11	-1623	1010	999	91,82
12.	Net profit	9	-1623	825	816	91,67

The total net profit of the enterprise in 2020 amounted to 825 thousand UAH, which is by 816 thousand UAH more than in 2018. Net income from sales of the enterprise for this period increased by 146%, the cost of production - by 134%, gross profit - respectively, by 1040 thousand UAH. The financial result from ordinary activities before taxation rose almost 92 times. So, the activity of the investigated enterprise in 2020 was profitable and

the volume of sales has significantly expanded, which indicates a general improvement and growth of production activity of Sunrise Production.

2.4 Analysis of the current state of enterprise cybersecurity and digitalization challenges

To analyze the current state of cybersecurity, let us first consider the company's information system, namely the set of technical means, programs, information and software, people, etc.

Sunrise Production's operations use requests such as:

- requests from clients, equipment and materials, which are further used in the work on the request;
- information about the market of video production services, which allows to adjust the company's activities.

Outputs are provided services, advertising campaigns to attract new customers and reporting (accounting, tax, etc.).

All activities of the company are regulated by regulatory and legislative documents, as well as job descriptions, clearly separating the responsibilities of each employee and their behavior.

The company processes are carried out by the company personnel using software and hardware (which include PCs, phones, MFPs and various software products) as well as communication channels.

As we can see, the main business processes of Sunrise Production are record keeping using specialized applications and general document flow of information with limited access (LAD) and for official use (DSC). Part of the documentation can be obtained via the Internet, as well as by means of electronic correspondence. Administration, as a rule, is performed from a single point by a system administrator.

Let's consider typical threats detected in this enterprise system. Threats are understood as single or complex, real or potential, active or passive manifestations of adverse opportunities of external or internal sources of threats, create critical situations, events and have a harmful effect on the objects of protection.

The list of threats to information resources with limited access is wider, as they are the object of increased attention from intruders. As a result of a leak, information can become the property of a subject who has no right to access it. A malefactor is defined as a person acting in the interests of a competitor, an adversary or in his own interest. The purpose and result of the intruder's possession of this type of information can be not only access, but also its modification or destruction.

The threat of availability, integrity and confidentiality is practically realized because of the risk of unauthorized channel of getting valuable documents by someone. Functioning of this channel always leads to loss of data. Let's consider data properties and threats in more details.

Properties of data. There are three basic properties of data:

1. Confidentiality: Confidentiality prevents information from being transmitted to unauthorized individuals, resources and processes. A synonym for privacy is personal data. Organizations restrict access to data or other network resources to ensure that only authorized operators use them. For example, a programmer should not have access to all employees' personal data. Organizations should educate employees on best practices to protect sensitive information so that they can protect themselves and their organization from attack. Techniques such as data encryption, authentication and access differentiation are used to ensure confidentiality. Sunrise Production has restricted access information:

- Confidential information: data, calculations, storage software media or other information collection, copyrights, trademark, trade name, service brand, service name, know-how, trade secrets, customer lists, details of customer or consultant contracts, pricing policies, operating methods, marketing plans or strategies, product development methods or plans, computer programs (including object code sources), processes, procedures, formulas, etc. [38]

2. Integrity. Integrity is the accuracy, consistency, and reliability of data throughout its life cycle. Synonymous with data integrity is its quality. Data are subjected to operations such as receiving, storing, deleting, updating, and transmitting. In all these operations, the data must remain protected from unauthorized access.

To ensure data integrity, methods [6] such as hashing, data validation and consistency, and means of access differentiation are used.

3. Accessibility. Accessibility implies that accessibility to different systems and services is maintained at all times. Cyberattacks and system failures can prevent access to information systems and services. For example, by interrupting the availability of a competitor's website by shutting it down, another company can provide itself with an advantage. Such DoS attacks compromise system availability and prevent legitimate users from accessing and using the information system. To ensure availability, methods such as system redundancy, backups and increasing the resilience of systems are used,

Types of attacks applied to a company. There are many types of cyber attacks today. The most common attacks on data are:

- Malicious software (software) is code created to secretly affect a computer system without the user's knowledge. Malware is characterized by the fact that it can spread through a network, cause changes and damage, remain undetected, and remain in an infected system. It can wreck a network and reduce its performance.
- Trojan Horse viruses are malicious software that falsely represent themselves as useful (i.e., they enter a network disguised as legitimate software). They spread like normal software and convince the victim to install them (their developers use methods such as social engineering). Trojans are considered one of the most dangerous types of all malware because they are often designed to steal financial information.
- SQL injection, known as SQLI, is a type of attack that uses malicious code to manipulate databases provided to gain access to information not intended to be displayed. This can include numerous items, including private customer data, user lists or sensitive company data. SQLI can have devastating consequences for a business. A successful SQLI attack can result in the deletion of entire tables, unauthorized viewing of user lists, and in some cases an attacker can gain administrative access to a database. They can be very disruptive to business. When calculating the estimated cost of SQLI, you should consider the loss of

customer trust if personal information such as addresses, credit card information, and phone numbers are stolen. Although SQLI can be used to attack any SQL database, criminals often target websites [31].

Next, let's analyze the technical equipment of the Sunrise Production employee's workplace.

4. Personal computer. Each employee except the technical staff has a personal computer. There are 19 of them in total.

The average characteristics of a PC are as follows:

- system unit: HP Slimline 260-a183ur Z0L02EA;
- processor: AMD;
- processor type: A8-7410 2.2GHz;
- number of cores: 4;
- processor speed: 2.2GHz Max. - 2.5GHz;
- main memory: 4 GB;
- memory frequency: 1600 MHz;
- hard drive: 500 GB;
- graphics controller: AMD Radeon R5;
- drive: DVD+/- RW;
- USB port: 2.0×4, 3.1×2.

The Windows 10 Pro operating system is installed on each employee's computer. It allows you to manage all the hardware and other software on the computer. Each employee has his own login and password to log in to the computer.

Let's look at the software used by Sunrise Production employees.

"MS Office" is an office software package. Employees mostly use only MS Word and MS Excel. This is a word processor and spreadsheet application, respectively.

"Adobe Premiere Pro CC" is a software for professional video editing. This software has been on the market for over a decade and is one of the leaders because it is constantly supplied with new updates that can be downloaded for free.

Final Cut Pro is a professional video editing software that has support for 360-degree virtual reality, HDR, multi-camera editing, high speed rendering, lots of interesting tools, a

large library of plugins and easy-to-use color correction, grading and adjustment tools. Final Cut Pro has also been developed and optimized for Mac operating systems.

"1C: Manufacturing Enterprise Management+CRM" (hereinafter - 1C: PPM+CRM) - ERP-system that automates all business processes of the company. Installed on all computers. Basically this 1C is used by the commercial department and accounting department. Employees of the first department use it as a CRM to work with counterparties, and employees of the second for tax and accounting, payroll, etc. Technical Directorate rarely uses the program only as a composition for the existing equipment.

Skype is software for text, voice, and video communication over the Internet. It is not installed on all computers. Employees rarely work in the program, they mostly use it as a messenger.

Google Chrome - Internet browser used to use the necessary electronic resources. Installed on all computers.

"CCleaner" - antivirus program designed for comprehensive protection of PCs from malicious programs. There are on the PC of each employee.

Multifunctional inkjet device (MFP) - "Epson WorkForce Pro WF-5620DWF". Total number: 7 pcs. It has the following functions: printer, scanner, fax with color and black-and-white printing.

Landline phone. In departments working personally with clients, each employee has a phone, others have one phone per office. Total number: 10 pieces.

The company has a server room where all the information on 1C:OWP+CRM is stored. Server characteristics:

- name - SUPERMICRO SC836E2-R800B;
- maximum number of hard drives in 3U form factor - 16;
- processor - Intel Xeon 8-Core E5-26xx 2.60 GHz, 8.00;
- motherboard - X9DRi-F;
- type of RAM - DIMM DDR3;
- maximum number of RAM slots - 16;
- frequency - 1866/1600/1333/1066 MHz
- maximum number of 3.5" hard drives - 16;

- hard drive type - SAS/SATA;
- number of power supplies - 2;
- one power supply - 800W.

5. Website. The company has its own website, where all the information about the mentioned services, campaigns is located, the client can also send an application by filling in a special field, or ask a question. All appeals from clients go to the corporate e-mail of the organization.

During the research of the organization the following problems were revealed:
- the used "1C: PPM+CRM" does not fully meet all the needs of workers;
- there is an insufficient level of communication between employees.

In "1C: PPM+CRM" there are a large number of functions that are not actually used. Only the functions of CRM, accounting and warehouse are in constant use. But even they do not meet the needs of employees.

Employees were interviewed about the advantages and disadvantages of "1C: PPM + CRM. The unanimous answer was that the advantage of this system is only its presence, because the company has no other analogues of this program.

As for the disadvantages, there were a large number, let us list the most popular:
- only CRM, composition and accounting functions are used;
- outdated interface;
- slow operation of the system;
- no graphic display of statistics and reports;
- no ability to analyze counterparties on different grounds;
- it is impossible to edit comments to the request;
- the counterparty can be searched only by name or phone number;
- there are no messages about new request, changes in the request, etc;
- you cannot delete or change the counteragent, it must be done only by a 1C specialist;
- when establishing a counteragent card you must enter the same information in different places in the system, due to which there are errors in the data, doubling counteragent cards that can only be corrected by specialists;

- insufficient level of professionalism of the 1C staff. You have to wait for several months for the 1C employees to make changes to the system (to issue a counterparty, change his data, etc.);

- there is no integration with the company website;

- there is no way to log in to 1C system from another device outside the office, etc.

Insufficient communication between employees implies that the phone and Skype are not enough for fast communication between employees. Since one request is handled by several employees, it is important that there is communication between them to quickly move the request from the business process from acceptance to closing.

Thus, it was decided that it was necessary to implement a new, more modern CRM system that meets the needs of employees, as well as have the functionality not only of CRM, but also give the possibility of adapting the system to other needs.

CHAPTER 3. PROSPECTS FOR IMPROVING THE EFFICIENCY OF SUNRISE PRODUCTION EMPLOYEES THROUGH THE INTRODUCTION OF THE BITRIX SECURITY MANAGEMENT SYSTEM 24

3.1 Cloud technology as a tool to provide secure operation and improve the efficiency of the company

At the current level of software and hardware development, cloud technology is an effective tool that can significantly improve the efficiency of a company. Modern cloud technologies can be divided into huge groups - "general purpose" and specialized solutions.[36]

General-purpose solutions are primarily aimed at improving the efficiency of all employees of the company - managers and other office workers.

Usually the user is offered a standard set of services. Typically, this is a cloud data storage service that allows access to files from anywhere in the world and provide file sharing. Some providers include a "mobile office" service that allows you to work with your files without installing the appropriate applications on your computer. The cloud can also provide a time planning service (such as a "calendar"), an e-mail service, a video conferencing service, and an alerting service. In an effort to attract new customers, companies providing these services (and there are more than 20 [21]) are constantly expanding their functionality:

- increase the amount of cloud storage (sometimes for free, sometimes as a reward for attracting new users);
- increasing the storage time and volume of emails in mailboxes, providing various bonuses.

But in any case, a "general purpose" cloud solution is a solution for office workers, which leads to improved quality of work only at the expense of optimizing working time.

If an employee has to use specialized programs in their work (this applies to accountants, database administrators, financial analysts, software developers), having cloud storage or functional email is obviously not enough. For this purpose, specialized solutions are offered on today's market. These services are oriented toward employees in certain categories and allow users to work with the appropriate software without installing

it on their computer. Such services include Bitrix24, 1C Enterprise, Windows Azure, Oracle Cloud, Yaware. Online, etc. [48] Of course, to work with these systems you need to have certain qualifications. But the economic effect here is more noticeable, because there is a reduction in the cost of purchasing and deploying the software and fleet of computers.

Since any modern company can not function without accounting and other departments that provide services to the core business, when transferring the company to work in the cloud must use both types of cloud services. Thus, the challenge is to choose not the type of services, but the appropriate solution. When selecting a "universal type" solution, the criteria of cost, reliability, speed of operation and technical characteristics should be followed.

The choice of cloud solution of the second type is determined primarily by the specifics of the enterprise. However, it should be noted that the cloud solution of the first type should be the same for all employees of the company in order to ensure uniformity of business processes. There can be several specialized solutions, precisely because of their "specialization," that is, focus on a strictly defined class of tasks. Economic criteria are important here as well, but become secondary, since in this case, the cloud provider may only be selected from a list of similar service providers, the number of which is significantly lower than the number of cloud service providers in the first group. Let's look at a number of cloud solutions from both groups.

Google solutions. Among the "general purpose" solutions, Google Apps for Business has recently become increasingly popular. This Google service provides its domain name with Google cloud products.

The service supports applications:
- Gmail
- GoogleCalendar
- GoogleHangouts (Talk)
- GoogleDocs (Documents, Tables, Presentations)
- Google Drive [49].

Google defines the following advantages of using these solutions:

- availability of any of the services at any time of the day from any computer or cell phone with an Internet connection;
- mail with the possibility to set up redirection, work in safe mode. User-friendly client for cell phones;
- multifunctional calendar, setting of reminders to e-mail and SMS, the ability to "impose" calendar on the calendar of colleagues, plan events / vacation / vacations for six months / year ahead;
- ability to collaborate with documents in all popular formats, availability of all the latest versions of documents at your fingertips;
- GoogleTalk messenger - the ability to lead group chats, to save the history.

Gmail email with a powerful Google search engine provides users with both cloud storage and offline functionality. Gmail works on any computer or mobile device with connectivity, and offline support allows you to work with mail even when you're not connected.

With GoogleCalendar, company employees can organize their work in an efficient way, which leads to a better quality of work for the company as a whole. GoogleCalendar allows you to schedule meetings, receive mentions of upcoming events and publish your work plans online. Creating a shared calendar helps you choose a time to meet with colleagues and the smart scheduling feature makes it easy for everyone to get together at the right time.

The most important service in GoogleApps is Google Cloud Drive, which includes a word processor, a spreadsheet processor and a presentation service, as well as an online cloud file storage service with file sharing functionality.

The word processor allows you to edit virtually any text document from any computer, regardless of location.

A spreadsheet processor helps you enter data into rows and columns of a spreadsheet, and perform calculations in tables in virtually all popular formats.

Presentation creation service allows you to create electronic presentations in Microsoft PowerPoint format.

1C:Enterprise solution. Specialized cloud systems include cloud development "1C:Enterprise" with the possibility of convenient work with 1C software products, regardless of the type of client device and installed OS [48].

Users can use mobile devices and devices with low computing power. In this case the application logic is carried out in a cluster of 1C:Enterprise servers, which have all the necessary characteristics: scalability, high fault tolerance, dynamic load balancing and interaction with databases, the ability to store data application solutions. If necessary, the server cluster can be strengthened by the service infrastructure, allowing users to provide services for the use of software products, service consumption accounting, general service administration and others.

The functionality of cloud technologies:

- connection via http (https) to the information base, allowing customers to work with 1C programs via the Internet, while being anywhere in the world;
- 1C server cluster with high fault tolerance and scalability capable of serving a large number of users simultaneously.

There are four basic models of cloud technology application in 1C (Fig. 3.1).

Cloud in the organization

Cloud in holding

Cloud for customers
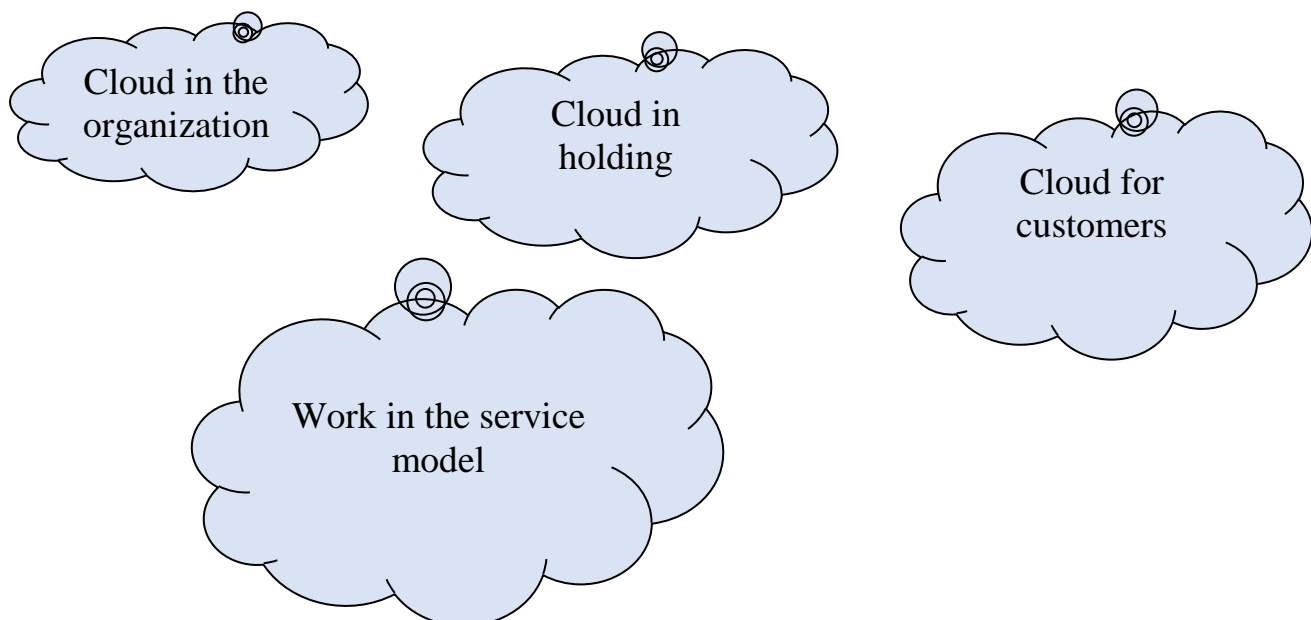
Work in the service model

Fig. 3.1 Models of cloud technology application

Within a single company, 1C clouds can be used by employees who need to connect to a 1C information base, regardless of their location. This increases the quality of work of company managers, because they can receive the necessary documents, being in fact in any part of the world.

Users, who are not employees, may connect to 1C cloud inside the company.

Within a holding consisting of several companies, cloud technology 1C significantly reduces the cost of maintaining the same type of applications. In this case, each company has access only to a specific, independent area of data and only one information base needs to deal with configuration, update, backup and other administrative operations.

The use of cloud technology 1C can greatly facilitate the work in cases where the potential users of the software product is not united into one local network, using different hardware and software and can not meet any special technical requirements.

1C clouds can be most fully used if the work with the application is organized by the service model, which implies that end users do not buy software products, but pay for their use via the Internet. In this case, the applications themselves are installed and maintained on the server of the provider of this service.

The provider should provide continuous uninterrupted operation of software products, their periodic updates, backup and security of the stored data. To maintain accounting records with the help of a particular 1C:Enterprise program users pay a certain set of services to the provider and can easily connect to the necessary 1C program with an ordinary browser.

This business model completely deprives the end user of all costs associated with installing, upgrading and support of hardware and software. Support for backup and security of stored data is taken over by the provider of this service.

A separate place among cloud technologies takes Bitrix 24. Bitrix 24 is a 1C-Bitrix corporate portal implemented as a cloud service. This distinctive feature allows you to start using Bitrix 24 quickly and easily: no need to buy and configure a server, install the application, keep track of updates and perform many other routine operations. At the same time, if necessary, you can always migrate data from Bitrix 24 to a corporate portal installed locally.

Bitrix 24 has been in operation since 2009, oriented and rapidly and steadily evolving [48]. Bitrix 24 is a multifunctional CRM system that simplifies not only the work with customers, but also helps to conduct processes within the company.

It is among the top systems according to one CRM research site [16]. Functional Features:

Social Portal:

- the Social Intranet concept makes working in a company as easy as working on a social network;
- live feed brings together all the latest events in one place;
- "Like" button allows you to add an opinion with a single click;
- instant messages inside the portal - a full-fledged replacement of ICQ;
- you can attach a file, photo or video to the message in the live feed;
- photo galleries inside the portal - fast and convenient;
- notifications will remind about tasks and meetings;
- the mobile version works with all modern smartphones.

Task Management:

- tasks can be set by both manager and employees;
- Gantt chart allows you to quickly assess the workload of employees;
- ready-to-use task reports can contain data for a month, a week, a year or any time period;
- by combining employees into groups, it is easy to set collective tasks and discuss projects;
- the report builder helps to create non-standard reports;
- extranet allows you to involve clients and freelancers in the discussion and execution of tasks.

Document handling:

- Bitrix 24 is great for storing company documents;
- uploaded documents appear instantly in the live feed, where employees can request or leave comments;

- each employee can upload their own files and customize access rights to each of them;
- you can save the history of file changes;
- any folder in the portal can be connected as a network drive of your computer;
- edit documents using Microsoft Office without leaving the portal.

CRM (customer base):

- Bitrix 24 includes an excellent CRM system;
- the lead processor allows you to add, export and import data on customer enquiries;
- looking at the "sales funnel" you can quickly assess all the stages of work with customers;
- automation of work with clients is available with the help of business-processes designer in CRM;
- an open API allows you to automatically download leads from the site.

Work time:

- work calendars allow you to plan tasks for the week, month and year ahead;
- time tracking system will show how much working time is spent on each task;
- schedule of absences will help you quickly estimate the amount of time worked;
- you can set up periodic generation of work reports from employees;
- through the "Planners" menu, you can easily request employees for a meeting and send out the results of the discussion.

Company employees:

- Bitrix 24 social intranet is all about people;
- you only need to enter the first letters of the name to find the right employee;
- the company structure is presented in the form of a hierarchical scheme in the relevant section of the portal;
- access rights can be assigned to a group, department, employee, document and many other system objects;
- to invite new users to the portal, simply enter their e-mail.

The following advantages can be highlighted in this system:

- high functionality;
- working with documents (doc, pdf, xls, etc.) within the service; looks like a social network;
- video chats;
- it is possible to create a free working e-mail;
- elements of gamification (badges);
- integration with social networks, google calendar and other services;
- integration with 1C-Bitrix and other well-known CRM-systems;
- telephony;
- free tariff.

As with any system there are disadvantages:
- the biggest plus is and minus, too many features, long and hard to figure out;
- visual garbage - interface problems;
- incomprehensible task-manager;
- no document templates.

To summarize, let's formulate the positive and negative sides of using cloud technology in information systems. The positives of using cloud technology are as follows:
- accessibility: anyone with a computer, tablet, or any mobile device connected to the Internet can access information stored in the cloud. From this follows such an advantage.
- mobility: the user does not have a constant need for one workplace. Managers can receive reports from anywhere in the world, and managers can monitor production.
- cost-effectiveness: one of the important advantages is called a lower cost. The user does not need to buy expensive, high in computing power computers and software, and he is free from the need to hire a specialist to maintain local IT-technologies.
- rental: the user receives the necessary package of services only when he needs it, and pays only for the quantity of purchased functions.
- flexibility: all necessary resources are automatically provided by provider.

- high technological capability: large computing power that is available to the user, which can be used for storing, analyzing and processing data.
- reliability: Some experts argue that the reliability provided by modern cloud computing is much higher than that of on-premises resources, arguing that few businesses can afford to purchase and maintain a full data center.

Despite the many advantages described above, cloud technology also has its disadvantages:

1. The constant need for an Internet connection: this technology always requires an Internet connection. There are usually a number of applications that are downloaded to the computer and allow further work despite the connection. In other cases, everything is simple: no connection - no work. According to many experts, this is the biggest disadvantage of cloud technology. But if you consider the development of information technology in our time, it is safe to say that access to the Internet is almost everywhere. Therefore, soon such a problem will disappear altogether.

2. Poor performance with a slow connection: most cloud services require a fast Internet connection to work properly. But information technology does not stand still, so there is no problem with the bandwidth of Internet connections.

3. Applications may run slowly and with incomplete functionality: some of the programs provided by cloud services run faster on the local computer. This can be due to both the low bandwidth of Internet connections and the congestion of remote servers. Also, applications provided in the cloud have limited functionality compared to their local computer versions.

4. There is a threat to data security: Certainly, if you transfer your data to the cloud, the possibility of a threat to data security arises immediately. Let's take a closer look at the risks that arise when using cloud technology:

- network risks. For cloud access to company resources, employees typically use different combinations of secure and insecure, wired or wireless networks, and private or public networks. This gives many entry options for hackers and cybercriminals - companies simply can't protect every network that employees use.

-        physical device protection. Protecting physical devices when working remotely with cloud storage becomes a serious risk and challenge, as a lost device - personal or corporate - poses the threat of loss of sensitive data and personal information. The devices of employees traveling or working away from home are particularly at risk.

-        the use of personal devices for commercial purposes. In this situation, there is a great risk that personal use of software products and other resources can give criminals access to company resources. Typically, companies have no control over the programs and software installed on personal devices, along with corporate devices.

Cloud security includes technologies, controls, processes and policies that collectively protect cloud systems, data and infrastructure. It is a sub-domain of computer security and in the broader sense of information security [8].

Cloud security is the most important requirement for all organizations. Especially considering a recent study (ISC) 2 that found 93% of organizations are moderately to extremely concerned about cloud security, and one in four organizations have confirmed a cloud security incident in the past 12 months.

3.2 Bitrix 24 as a tool to improve the efficiency of Sunrise Production employees

During the market analysis of CRM-systems, information system Sunrise Production and identifying problems of the IS, it was found that the company needs to implement a new management system that will increase the efficiency of employees, and at the same time should be as protected from unauthorized intruders and block the sources of information.

Today, some of the most popular CRM systems are: 1C - Bitrix 24, ModX, Drupal, Wordpress, UMI. Each of them has its pros and cons, so you need to analyze them to determine the most effective.

Bitrix 24 [4] is the most common paid content management system, with an excellent reputation, the cost of which varies widely. There are budget and premium license options. In any case, the system is worth the money spent on it, because it has a huge number of features and with its help it is possible to perform a project of any complexity. It is very

easy to manage and does not require special training. The scope of this CRM-system is huge, it can be used to create a site for any purpose. It is ideal for the creation of online stores, social networks and sites that conduct various calculations.

The main advantages of the CRM-system Bitrix 24 are:

- high level of reliability and security;
- constant updating of the product version;
- high-quality technical support;
- availability of necessary technical documentation;
- widespread distribution of Bitrix-based sites;
- CMS integration with 1C systems [48].

ModX is a free CRM-system with open source code. Uses AJAX and languages MySQL, PHP. The system is excellent for creating simple sites, even has an accessible interface and administration panel for non-specialists.

Popular web magazine CMS Magazine in 5 CMS made Wordpress. This system is freely distributed CMS and enjoys great popularity among users.

To compare these three most popular online CRM-systems we use the most important indicators in the study of this or that system:

- security;
- convenience of the content manager;
- user-friendliness;
- convenience for the developer;
- usability during SEO optimization.

Based on the selected basic characteristics, let's compare these systems with each other (Table 3.1).

Table 3.1.

Comparison of CRM-systems (on a 5-point scale) [6;18;25]

CRM	Security	Convenience of the content manager	User convenience	Convenience for the developer	Convenience in SEO optimization	Total
Bitrix 24	5	4,5	4	3,5	5	22
ModX	4,5	4	2	5	5	20,5
Wordpress	3	3	3,5	4	4	17,5

The security of the Bitrix system is confirmed by numerous certificates, tests and studies. It is important that the system is constantly evolving in the protection of the Internet resource. So, from Table 3.1, we see that the Bitrix 24 system suits the company best. Let's look at its characteristics for a detailed analysis of this tool to improve the efficiency of Sunrise Production.

So, Bitrix 24 is a popular service designed for efficient operation of companies of all sizes thanks to a wide range of tools. On the one hand, it causes difficulties for some users, because it is not clear which tools to start with and how to work with them. In addition, each client can expand the functionality of the service to meet current needs and tasks as the business grows.

In Bitrix 24 only employees of a particular organization may register. By implementing a Bitrix corporate portal, the company receives the following advantages [48]:

Ensuring that employees communicate effectively with each other and with management;

- the ability to store and share data with colleagues;
- the ability to set and control the fulfillment of tasks;
- ease of reporting and accounting of working time of each employee;
- connection of the CRM-service to control the sale of your product;
- the ability to integrate the functionality of Bitrix24 with other tools required for work, such as mailing services, telephony, etc.

In this case, all data remain completely secure.

Corporate portal Bitrix 24 can be used in the cloud. And here all the data is stored on the server manufacturer - 1C Bitrix. Logging in and working with Bitrix 24 in the cloud version is done via the Internet [48].

Key features:

1) Working together on tasks and projects:

- setting tasks;

- setting work mode (plan, deadline, calendar, lists);

- assigning roles and access rights;

- templates;

- work to be done according to a given script;

- kanban boards;

- employee performance tracking;

- iPhone and Android apps.

2) CRM for sales:

- viewing deal histories by card;

- merging deals by searching for duplicates;

- sales automation with robots;

- CRM marketing;

- CRM calls and emails;

- online chat on the website (free);

- reports;

- sales generator;

- automation of creation of contracts, invoices and deeds;

- AI Scoring CRM (predicting the success of transactions with [2]);

- real-time data exchange via 1C;

- end-to-end analytics.

3) Contact Center: telephony, chat on the site (free), call-tracking, CRM forms in social media and on the site, autoresponder.

4) Websites: possibility to create websites in a simple constructor.

5) Stores: creation of online stores in the designer and on templates.

6) Office: a virtual communication space for company employees.

Bitrix24 allows to organize joint work within the company. Executed calendars, tasks, goals, CRM, joint work with documentation are taken into account in a single workspace. Groups, conversations, chats and news feeds are used for this purpose. The time tracking system "Bitrix24" distributes working time between scheduled tasks. Time is allocated for scheduled meetings, meetings and appointments planned by management or colleagues through tasks and calendar. The employee time monitoring system will allow you to plan your work day using the time planner [3].

Bitrix 24 includes:

- CRM with a suite of sales, marketing, analysis mechanisms;
- goals and projects, with the ability to work on them in a timely and unified manner;
- a single call-center that collects all information about interactions with customers;
- Internet resources and stores, with the ability to quickly and easily create a stylish, successfully operating online store;
- office with a corporate portal, chats and other means of work.

Through this system, the company works more quickly and successfully. Managers get an opportunity to process information about clients. Using CRM, transactions can be made. Salespeople can reduce the time of interaction with the customer. Completed deals are accumulated in the system. Access rights to the system are set up in any convenient way.

This software product is optimal for those companies for which the simultaneous involvement of all participants without leaving the workplace is important.

The system allows to optimize standard business processes, deprives repetitive or superfluous actions, saves labor, financial and time resources, which are spent for information search, restoration of history of negotiations and in other cases [2].

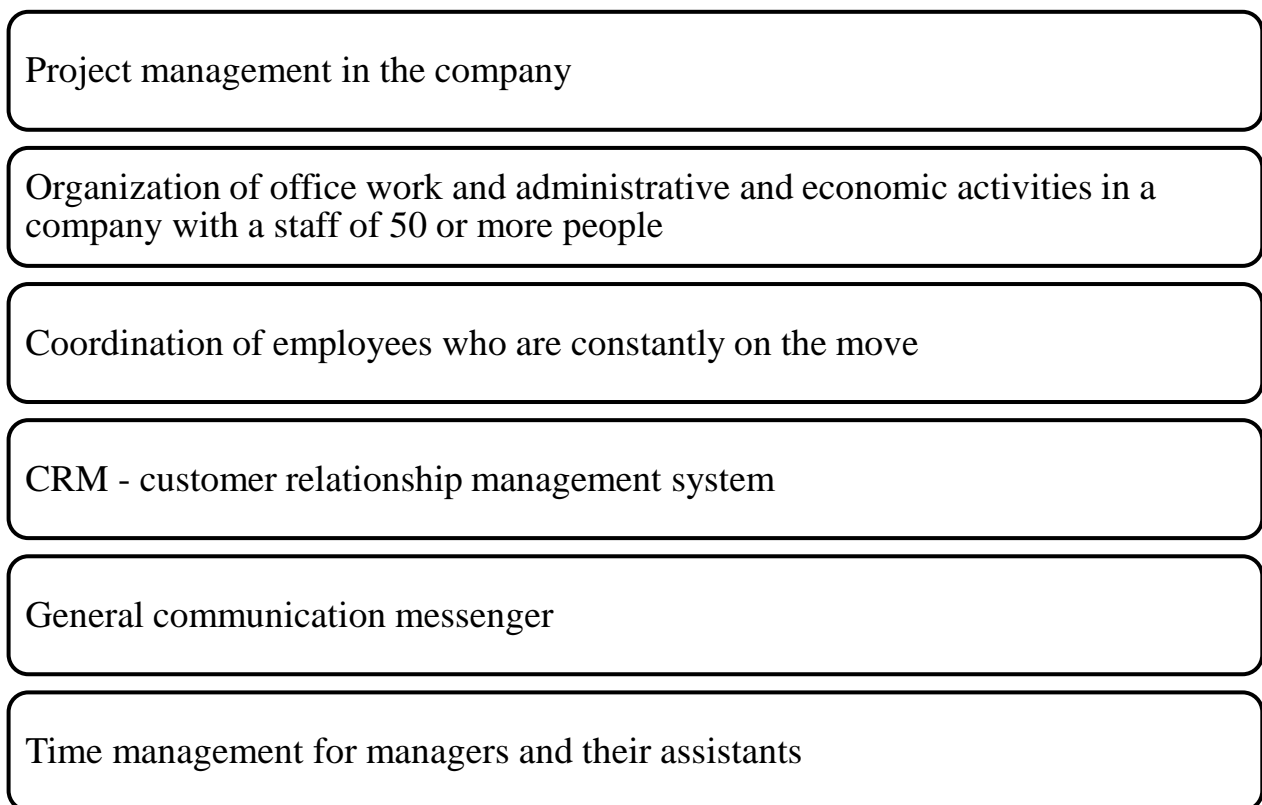Bitrix 24 includes various modules for the following tasks (Fig. 3.1)

Project management in the company

Organization of office work and administrative and economic activities in a company with a staff of 50 or more people

Coordination of employees who are constantly on the move

CRM - customer relationship management system

General communication messenger

Time management for managers and their assistants

Fig. 3.1 Modules for solving Bitrix 24 tasks [48]

Let's consider them in more detail:

1) company project management. Bitrix 24 supports all modern methods of project and task management - summary lists with subtasks, Gantt chart, kanban and personal boards.

Project management becomes clear and simple, employees do not need to be taught how to use these tools, and the control of stages of work does not take time.

Therefore, Bitrix24 can be used in various areas where work is based on the project principle.

2) Organization of office work and administrative activities in a company with 50 or more employees[2]. Bitrix 24 allows you to optimize workflow, procurement of office supplies, relationships with service providers and contractors, staffing issues. All these tasks are solved quickly and under constant control.

3) Coordination of activities of employees who are constantly on the move. Coordinating the activities of employees who are constantly on the move - couriers, sales managers, merchandisers, etc. Bitrix 24 is easy to install on smartphones and

tablets, which allows you to keep in touch and get information from each employee. Reports, messages, photos and contacts go immediately to the company's network for further processing.

4) CRM - customer relationship management system. CRM is one of the most important modules of Bitrix 24. With its help it is possible to significantly reduce the cost of working with customers and automate the work of sales departments. The system displays all stages of communication with customers, from initial inquiries, offers and calls to billing and statistics on the work of employees and sales channels.

All information about customers, deals and efficiency is at your fingertips - it's easy to control obligations, issue invoices in a timely manner and track sales techniques that work.

Bitrix 24 is especially useful for sales with a significant check on each agreement. For companies with a large incoming flow of emails and calls Bitrix24 provides immediate savings on the salaries of call center employees. The integration of the CRM module with telephony and email will provide easy management of information flows and guarantee that no client will be forgotten and no agreement will be overdue.

If you need to increase the already rich functionality or integrate the sales information with 1C, then the modification of the Bitrix24 box version will help to solve almost any problem.

5) Unified communication messenger. Bitrix 24 can be used as a single communication messenger with data storage on its server. By installing and configuring a boxed version of Bitrix 24 companies abandon Skype, Whats App, Viber and other messengers in favor of their fully controlled system.

6) A company's personal archive. Proprietary Bitrix 24 can be an archive of the company, which will store any information of a production or documentary nature. A unique system with the possibility of structured search and different levels of access to information has been developed. This will not only ensure the safety of data and its backup, but also increase the efficiency of its use.

7) Time management for managers and their assistants. For executives and their assistants, Bitrix 24 can be used for time management. It will not only allow you to plan meetings, negotiations and meetings, but also to create tasks and plans for their development in relation to the agreements recorded in the negotiations or ideas that have arisen.

This feature of the program will be interesting both for the management of a large company and for personal use.

The advantages of Bitrix 24 are confirmed by the fact that more than 2 million companies use it today. It is used in construction and trading companies, law and consulting firms, housing and utilities management and private and public projects of various kinds. The important advantage - the developer offers the organizations with up to 12 employees free tariff with basic tools, which makes it convenient for usage in small business [2].

Let's list what Sunrise Production will get from the implementation of the Bitrix 24 CRM system.

Overall, the company will get:
- a single communication tool between employees in all departments;
- access to the system from any device and at any location;
- a system that can be adapted to any needs of the company in the future;
- a system with not only CRM, but a large set of other functions, which will simplify the work of all the business processes of the company;
- a system that can integrate with other specialized programs (for example, "Billing" and "1C");
- integration with telephony, mail and website of the company;
- training site with detailed video tutorials on working with Bitrix 24;
- robots that will automatically remind employees of their tasks, help with tasks in the system, etc;
- creation of templates to speed up work with repetitive tasks;
- free round the clock support from Bitrix 24 specialists.

The director and managers of the departments will receive:

- convenient tools to set tasks for employees in a single system;
- tools to monitor the activities of employees and their effectiveness.

The Commercial Directorate will get [38]:

- a "kanban" - a "board" that visually shows the number of requests, on which they stage, which employees deal with them;
- a convenient counterparty card, which will contain: detailed information on the request from its beginning to its end, all the documents connected with the request, records of calls, letters, etc;
- the employee will be able to delete the counterparty, edit the request, customer data, etc. without any help of specialists, all these changes will be recorded and you can return to the original data at any time;
- robots that will automatically send SMS and emails to customers;
- powerful marketing tools: analytics of clients and sales by all possible features; allocation of clients to certain segments; generation of analytics results in the form of charts, diagrams and tables on one page;
- downloading of reports in any form: by applications, clients, invoices, etc;
- large number of filters, which increase the speed of search of any of counterparties;
- automatic search of duplicates of clients.

Accounting department will get:

- storage of all documents and reports in one system;
- convenient and automated tools for the calculation of various indicators of the company, the formation of all tax and accounting reports;
- analytics of financial indicators.

Bitrix 24 has a box version and a cloud version. The website "Splash.su" provides a complete comparison table of all available functionality of each version and each Bitrix 24 tariff [55]. After analyzing the comparison table, we decided that we wanted a plan that had all the functionality available in Bitrix 24 . This turned out to be the "Company" cloud version tariff and "Enterprise" boxed version tariffs.

The advantage of the box version over the cloud version is that you can completely rewrite the system for the company. Since Sunrise Production has no processes that require rewriting the system code, we were not interested in this feature. Plus, this version is necessary for a company with more than 1,000 employees, which is not relevant for Sunrise Production in the coming years.

That is why we have chosen "Company" tariff of the cloud version. The main advantages of the maximal rates of the cloud version over the boxed version:

- you can start working in the system immediately after payment, without waiting for specialists;
- in the future, you can switch from the cloud version to a boxed one, while the opposite is not possible;
- all functions of the system are available;
- unlimited 24/7 technical support from Bitrix 24 specialists.

But the most important thing in the implemented system is high data security, which should have no possibility of information leakage from Sunrise Production.

Bitrix 24 in the cloud version has the following features in the area of data protection:

- 1C-Bitrix proactive protection blocks 100% of attacks due to potential web program vulnerabilities, which prevents attackers from downloading malicious code via PHP. The system constantly analyzes and filters all data coming from the user through variables and cookies;
- multiple levels of backups with different recovery scenarios are performed daily, as well as continuous online backups to two data centers;
- data from different companies on the Bitrix 24 server is completely isolated from each other;
- technical access to Bitrix 24 servers is only from 1C-Bitrix subnetworks, i.e. external access to the company's server is blocked on all ports except the standard port for the HTTPS protocol;
- access to physical media Bitrix 24 is protected by SAS 70 Type 2 and Safe Harbor, which means maximum protection against external intrusion, and access to information is provided by biometric data;

-   authorized data from the client device is additionally encrypted using RSA keys.

Thus, we can conclude that Bitrix 24 cloud version has a high level of data protection.

Let's move on to the mechanism of implementation of the system Bitrix 24 tariff "Company".

With this tariff you can use all the features of the extended version of Bitrix 24 for one month at no charge.

In the first month, when the system can be used for free, there is configuration and testing of the system, as well as partial training of employees.

Let's list the main work to be done in the first month.

1. Conduct general configuration of Bitrix 24, namely:

- editing the interface (adding background, company logo, setting up the side menu of the portal);

- setting up the portal (company name, date, time, name formats, working time parameters, phone numbers, setting up the display of employees, etc.)

- setting up your own portal domain;

- integration with telephony, e-mail, website, MFP;

- installation of Bitrix 24 dextop software on employees' computers;

- installation of the Bitrix 24 mobile application on employees' phones (Fig. 3.2).

Figure 3.2 Portal interface in the mobile application Bitrix 24

Figure 3.2 shows how the Bitrix 24 application looks on an Android phone. At the bottom of the app screen is the quick access bar, where from left to right are:

- chats, where employees can discuss workflows or into individual chats or group chats;
- open lines, where employees can receive important notifications from their customers;
- live feeds, where employees can see all the updates happening in the corporate portal;
- message, where all employee activities related to the live feed are shown;
- menu, where the necessary functions of the employee's remote work on the portal are collected.

Let's list the main work with the system of the second month.
1. Purchasing the system.

2. Work of all employees of Sunrise Production office in Bitrix 24. Employees of the company are assisted in working with the system by the employees, who in the first month were engaged in its perfect study.

3. Learning Bitrix 24 tutorial videos by employees of the company's subsidiaries. In the third month, Sunrise Production specialists in Bitrix 24 check the readiness of employees to work in the system. If necessary, provide additional training.

So in the first month there is a basic configuration of Bitrix 24, testing its functionality in the company, in-depth study of system functions by a narrow circle of employees Sunrise Production, as well as general familiarity of all employees of the company with the system.

In the second month, the system is paid for 2 years, and employees start working in the system, their actions are monitored by specialists from Bitrix 24 of Sunrise Production. Employees are trained on their own on how to use the system.

And finally, the third employees start working in the system under the supervision of specialists.

Maintenance of the system will be held as follows: by employees of Sunrise Production, whose job descriptions include these duties or Bitrix 24 specialists. This support is already included in the price of the license, it is round the clock and can be provided by mail, phone or video.

3.3 Due to Bitrix24's Russian roots and the war, a replacement has been found for Sunrise Production

On February 24, russia unjustifiably invaded Ukraine, which changed the lives of many people and motivated many to refuse any products that were in any way associated with russia.

The reasons for the migration are obvious:

1. Patriotism and a principled rejection of all ties to the aggressor country.

2. Purchasing russian CRM developers directly funds the aggressor's economy.

3. Importing personal data and confidential information from russian CRM into secure systems that are not accessible to russians.

4. Access to valuable data and services may be blocked or rendered inaccessible at any time as a result of sanctions imposed on russian CRM developers.

HubSpot, a well-known CRM company in the United States, may be an alternative to russian CRM.

Why use HubSpot CRM?

The Free package includes powerful platform features.

HubSpot CRM provides free tools for marketing, sales, and support teams, including the ability to create up to 1 million contacts with no restrictions on user or customer data, deal and task management, email tracking and interaction notifications, email templates, document sharing, website integration, live chat, reports and more [47]. HubSpot's CRM platform scales to your needs regardless of the size of your company.

FREE MARKETING TOOLS:	FREE SALES TOOLS:	FREE SERVICE TOOLS:	FREE OPERATIONS TOOLS:
✓ Forms	✓ Live chat	✓ Ticketing	✓ Data sync
✓ Email marketing	✓ Basic bots	✓ Email scheduling	✓ Historical sync
✓ Ad management	✓ Team email	✓ Live chat	✓ Default field mappings
✓ Landing pages	✓ Quotes	✓ Shared inbox	✓ App Marketplace integrations
✓ Shared inbox	✓ Calling	✓ Calling	✓ Contact management

Importing is quick and simple.

It is simple to move data to HubSpot. With a few clicks, you can import all records from current system into HubSpot. There is no need to work with your data because HubSpot deduplicates your records based on a number of criteria, ensuring that your database is clean and organized from the start. You can also add your own properties to your data so that it matches your company settings and the specifics of business.

All of information in one place.

You have the option of importing all of data at once. Contacts, companies, offers, tickets and other items can all be added to HubSpot at the same time and associated with a simple column mapping. There is no need for manual associations.


A portion of the information is filled in automatically.

HubSpot CRM pulls additional information from its database of over 20 million companies to automatically populate new contact, company and agreement records. All you need is the corporate email address of a potential customer. You'll spend less time

looking for information about leads and companies and more time communicating with them when you use HubSpot CRM.

Exporting is simple and quick.

If you decide to leave HubSpot and migrate to another CRM, you can do so in just a few clicks. Your data is solely yours.
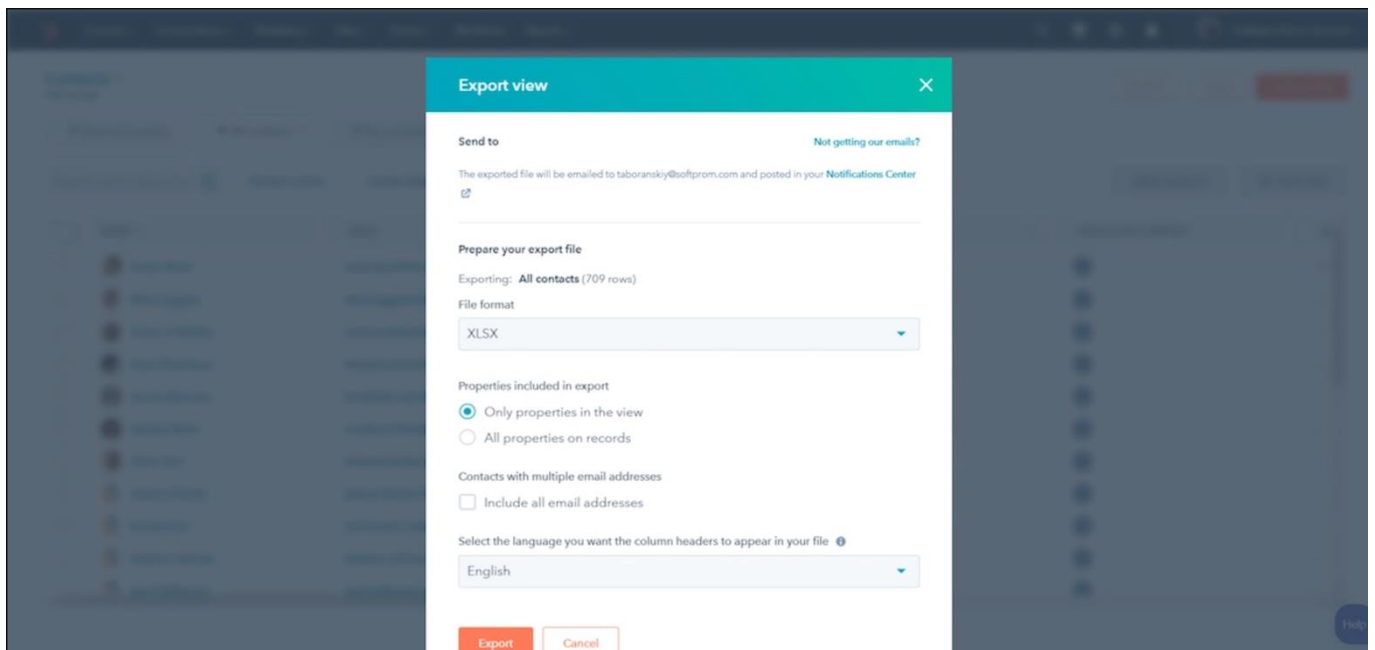
How is the data structured in HubSpot?

HubSpot, like most CRMs, stores data in the form of objects. An object is a type of record that stores a specific type of data. Data is placed in properties on a given object, which give specific characteristics of the object it contains.

HubSpot CRM is organized around four basic objects: contacts, companies, agreements and tickets.

Each of them contains different types of data and can be related to the other three in some way. Before proceeding, it is critical to understand what these four standard objects are.
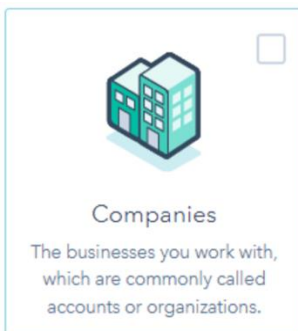
Contacts
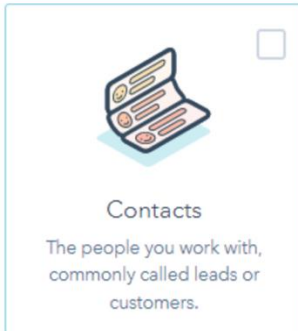
These are the people you communicate with or intend to communicate with. Those you will call and email to initiate, continue, or maintain a business relationship. Each contact's record contains information such as their first and last names, email address and phone number. It also includes a history of when the contact was last contacted.

Contacts
The people you work with, commonly called leads or customers.

Each contact can be associated with only one company, but with multiple agreements and tickets.

Companies

Companies are the organizations in which your contacts work. You may have several contacts who work for the same company with whom you communicate. A company record contains data such as the company name, domain, industry and phone number. You can also store additional detailed information here, such as the city in which the company is located, the number of employees, income information and so on.

Companies
The businesses you work with, which are commonly called accounts or organizations.

A company may have a number of related contacts, agreements and tasks.

Deals
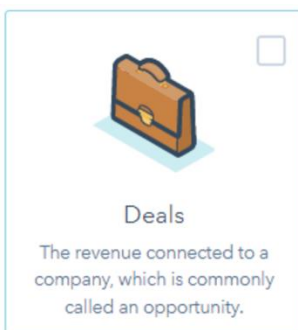
Deals are used to track revenue associated with potential sales and to manage the sales process. Deal stages are implemented throughout the sales process, from the beginning to the end, whether the sale is successful or not. The transaction record contains

Deals
The revenue connected to a company, which is commonly called an opportunity.

information such as the amount of potential sales, when sales are expected to close, who is in charge of the sale, and so on.

Each agreement can be associated with only one company, but it can also be associated with multiple contacts.

Tickets
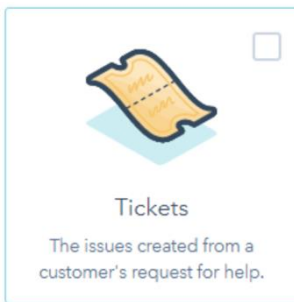
A ticket is a record of your customer service interaction. Tickets pass through various stages, from "created" to "closed". Tickets save data such as the source of the request, the time of the agent's first response, the time the request was closed and so on.

Tickets can be linked to any contact, company or agreement. They can be associated with a single object or any combination of objects.

What data import options are available in HubSpot CRM?

There are various methods for transferring data to HubSpot CRM. The best one is determined by the type of data you have and the internal resources you have (team of specialists, competencies, time, etc.).

The main options for migrating data to HubSpot CRM are listed below, along with the benefits and limitations of each:
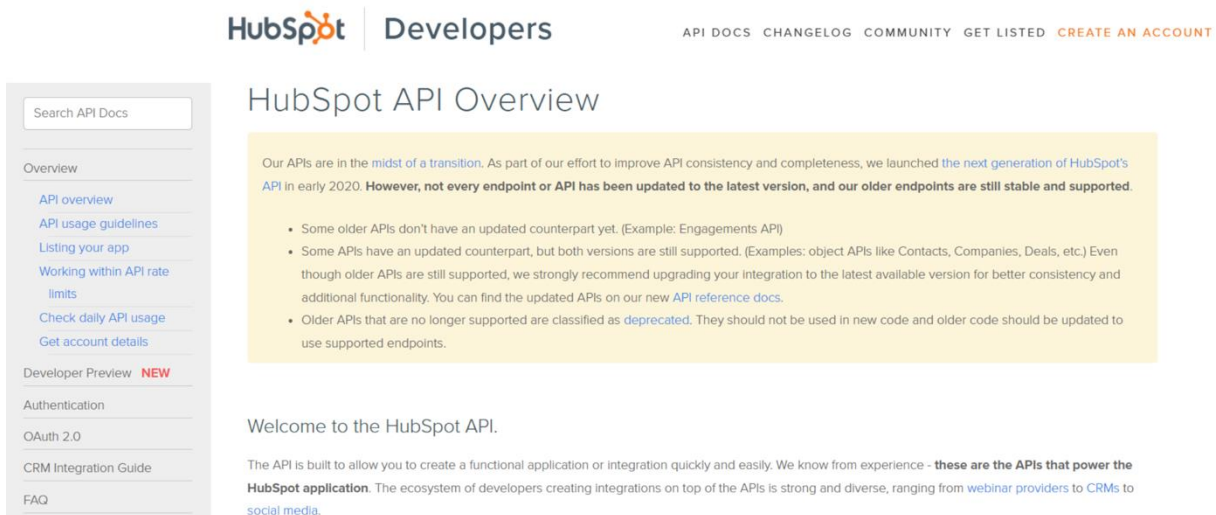
1. Downloading import files
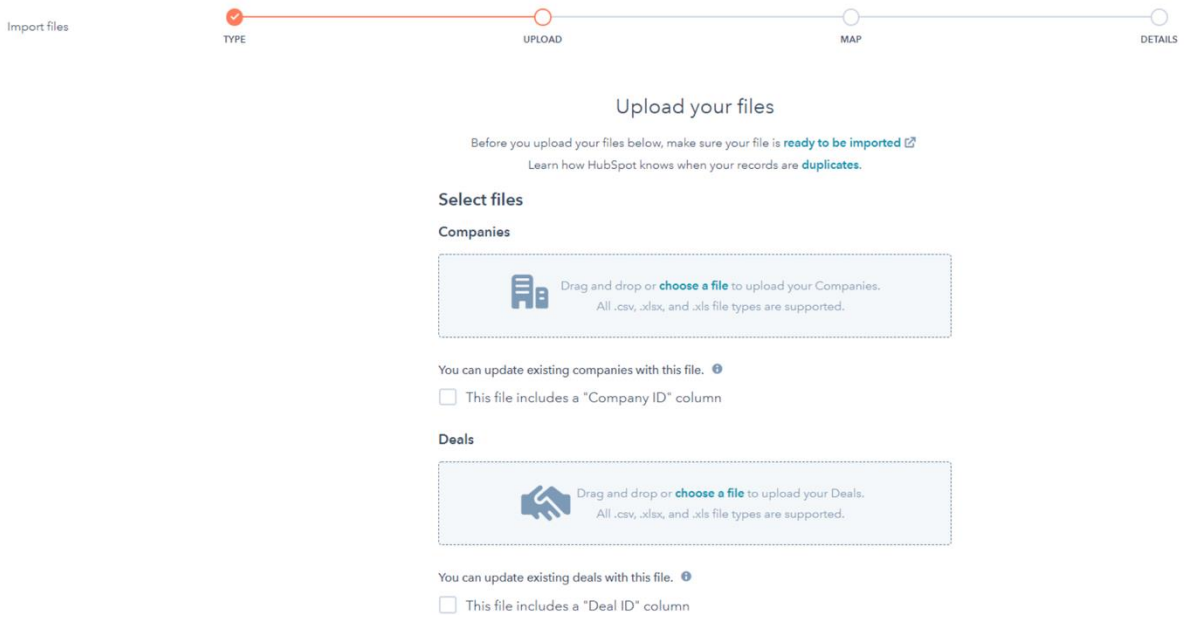
The simplest way to import data.

You can do it yourself or with the help of a partner.

2. Working with API

You can import data from the previous CRM into all objects, including tasks and customer interaction (notes, calls, emails).

3. Data synchronization with your previous CRM

Basic objects (Contacts, Companies, Deals, Tickets) and, in some cases, customer interactions (notes, calls, emails) can be imported.

CONCLUSIONS

In the thesis we have comprehensively analyzed information security in the theoretical plane and directly in the company Sunrise Production. As a result of the analysis, we can draw the following conclusions:

1. At the present stage of science and technology development in every developed state, there is a growing need to strengthen cybersecurity and make it one of the most important sectors of society. In a general sense, cybersecurity is the basis of national security, which forms the protection of the state, society and the population of the country in cyberspace through the creation of legitimate mechanisms to ensure cybersecurity. The sources of the main threat at present are malware, phishing attacks, hijackers, abuse of user accounts (including identity theft), denial of service (DoS/DDoS attacks), attacks on web applications, spam, botnets, data breaches, insider threats, physical manipulation, etc. The most protected from cyberthreats in enterprises are web sites and web applications, servers (physical and virtual) and data storage, and the least protected are laptops and mobile devices. Controlling unauthorized access to records in an organization is an important component of internal controls. Access and password policies, encryption, digital signatures, disk locks, firewalls, and digital certificates are examples of controls that should be identified, documented, reported, and audited when evaluating the effectiveness of controls.

2. Production represents the process of creating various media products (audio, video, animation, etc.). There are several types of media content related to production: videos, films, radio and television programs, audio recordings, presentations. Video production is traditionally divided into three large stages, each of which includes many stages. However, in practice there are grounds for allocating one more, additional stage, thus, the video production process preceding the pre-production has: the information gathering stage, the preproduction stage (pre-production), shooting (production), post-production (post-production). In a long video production process, a large number of people have access to all the information, so to manage the security of video production, you need

to control access to this information, by means of a variety of organizational programs, including Bitrix 24.

3. Sunrise Production was founded in May 2011 and is established in accordance with the Commercial and Civil Codes and other regulations of Ukraine. Sunrise Production is located at Kurenivska street 18, Kyiv. The subject of activity of Sunrise Production is providing a full range of video production of the highest quality. The main objective of the company is to make a profit, as well as to achieve economic and social results through the systematic implementation of exhibition and educational activities to meet the aesthetic needs of consumers. Sunrise Production receives payment for its services in the form of commissions and royalties from customers, which generates the company's profit. The activities of the investigated company in 2020 were profitable and the sales of products have significantly expanded, which indicates an overall improvement and growth of Sunrise Production's production activities.

4. Analysis of the current state of cybersecurity of the enterprise revealed the following problems: the used "1C: PPM+CRM" does not fully meet all the needs of employees, there is an insufficient level of communication between employees. The insufficient level of communication between employees implies that the phone and Skype are not enough for fast communication between employees. Since one request is handled by several employees, it is important that there is communication between them in order to quickly move the request from the business process from acceptance to closing. Thus it was decided that it was necessary to implement a new, more modern CRM system, which would meet the needs of employees, as well as have the functionality not only of CRM, but also give the possibility of adapting the system to other needs.

5. As a result of the analysis of cloud technology as a tool for organizing secure operation and improving the efficiency of the company, it is determined that modern cloud technology can be divided into large groups - "general purpose" and specialized solutions. Cloud technology at the current level of software and hardware development is an effective tool that can significantly improve business efficiency. Despite its many advantages, cloud technology has the following disadvantages: constant need for Internet connection, works poorly with slow connections, programs may run slowly and with

incomplete functionality, there is a threat to data security (network risks, physical security of devices, the use of personal devices for commercial purposes, etc.

6. While analyzing the market of CRM-systems, Sunrise Production information system and identifying IS problems it was found out that the company needs to implement a new management system, which would increase the efficiency of employees' work, and at the same time should be as protected from unauthorized intrusion of hackers and block the sources of information. After comparing the CRM-systems Bitrix 24, ModX and Wordpress, it was determined that the system Bitrix 24 suits the company best. After analyzing all the versions of Bitrix 24, it was decided that the cloud version of the "Company" tariff would suit Sunrise Production best. As a result, a full analysis of the necessary tools of the Bitrix 24 system was carried out, as well as the stages of employee training and further maintenance of the system.

7. Sunrise Production has replaced Bitrix24 due its russian roots and the war. HubSpot, a well-known CRM company in the US, could be an alternative to russian CRM. There are 4 reasons for the migration: 1. Patriotism and the rejection of all ties to the aggressor country. 2. Purchasing Russian CRM developers funds the aggressor's economy directly. 3. Importing personal and confidential data from Russian CRM into secure systems inaccessible to Russians. 4. As a result of sanctions imposed on Russian CRM developers, access to valuable data and services may be blocked or rendered inaccessible at any time. HubSpot is an alternative because of the Free package that includes powerful platform features. HubSpot CRM offers free tools for marketing, sales, and support teams, such as the ability to create up to 1 million contacts with no limitations on user or customer data, deal and task management, email tracking and interaction notifications, email templates, document sharing, website integration, live chat, reports, and more. HubSpot's CRM platform scales to meet your needs regardless of your company's size.

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