Ministry of Education and Science of Ukraine
Ukrainian-American Concordia University
Faculty of Management and Business
Department of International Economic Relations, Business & Management

MASTER'S QUALIFICATION WORK

DIGITALIZATION IN THE ENTERPRISE MANAGEMENT SYSTEM IN THE CONTEXT OF THE COVID-19 PANDEMIC AND MILITARY AGGRESSION (based on LLC National Trading Group case)

Master student of
Field of Study 07 – Management
and Administration **Tetiana Ovchinnikova**
Speciality 073 – Management (*First Name, Last Name)*
Educ. program – Business Administration

Research supervisor **Natalia Chaplynska**
(*First Name, Last Name)*
Ph.D. in Economics

Kyiv – 2024

ABSTRACT

The work focuses on digitalization in the enterprise management system in general as well as within the realm of restaurant business, taking into account the challenges posed by the COVID-19 pandemic and military aggression. The research establishes a theoretical framework, exploring the multifaceted impacts of digitalization on management dynamics. It underscores the positive outcomes, including the enhanced operational efficiency, improved customer experience, adaptability to changing circumstances.

The research is based on the real case of restaurants "Gastro Ukryttia", LLC National Trading Group, and the main focus was set on the implementation and potential upgrade of a Point-of-Sale (PoS) system as a crucial instrument to digitalize restaurant management system and streamline business processes. The comprehensive analysis underscores the prospective advantages and increased efficiency, positioning the PoS upgrade as a strategic investment for the restaurant, enabling it to stay competitive and resilient in the face of challenges such as COVID-19 and military aggression.

Key words: digitalization in management system, Point-of-Sale (PoS) system, COVID-19, military aggression, restaurant business, optimization of business processes.

АНОТАЦІЯ

Робота присвячена темі цифровізації системи управління підприємством з акцентом на розвиток галузі ресторанного бізнесу під впливом викликів, що утворились через пандемію COVID-19 та військовий конфлікт. Дослідження базується на огляді теоретичних основ, розкриваючи багатогранні впливи цифровізації на динаміку управління. Воно підкреслює позитивні результати, включаючи підвищену операційну ефективність, поліпшену взаємодію з клієнтами та адаптивність до змінних обставин.

Практичний розділ побудований за матеріалами ресторану “Gastro Укриття”, ТОВ «Національна Торгова Група», де досліджено рівень впроваджень та потенційного оновлення системи точки продажу (Point of Sale - PoS) як ключового інструменту для цифровізації системи управління рестораном та оптимізації бізнес-процесів. Комплексний аналіз підкреслює потенційні переваги та збільшену ефективність роботи підприємства, позиціонуючи оновлення PoS як доцільну стратегічну інвестицію для ресторана, яка забезпечує конкурентоспроможність і стійкість в умовах викликів, таких як COVID-19 та військовий конфлікт.

Ключові слова: цифровізація в системі управління, система Point-of-Sale (PoS), COVID-19, військова агресія, ресторанний бізнес, оптимізація бізнес-процесів.

PHEE-institute «Ukrainian-American Concordia University»

Faculty of Management and Business
Department of International Economic Relations, Business and Management

Educational level: **Master degree**
Specialty **073 «Management»**
Educational program **"Business Administration"**

APPROVED

Head of the Department

Prof. Zharova L.V.

"18" September 2023

TASK
FOR MASTER'S QUALIFICATION WORK OF STUDENT

Tetiana Ovchinnikova
(Name, Surname)

1. Topic of the master's qualification work: ***"Digitalization in the enterprise management system in the context of the COVID-19 and military aggression (based on LLC National Trading Group case)"***

Consultant of the master's qualification work **Ph.D. in Economics Chaplynska N.M.**, which approved by Order of University from ***"14" September 2023 № 14-09/2023-6c.***

2. Deadline for master thesis submission ***"20" December 2023.***

3. Data-out to the master thesis
Materials from open resources, official sites of international and national organizations, and the company where a student had her internship (LLC National Trading Group).

4. Contents of the explanatory note (list of issues to be developed)

– ***to investigate the theoretical framework, essential features of digitization, digitalization and digital transformation;***
– ***evaluate digitalization affects of the enterprise management system;***

– ***identify the impact of COVID-19 pandemic and military aggression crises on the digitalization processes within the business entity;***

– ***reveal general characteristics, strategy, analyze economic activity, competitiveness of the Ukrainian company LLC National Trading Group,***

– ***assess effectiveness of LLC National Trading Group and its management system for further business development under challenges caused by pandemic and military conflict.***

– ***develop and substantiate recommendations for business development and enhancement through the focus on digitization of its management system.***

5. List of graphic material (with exact indication of any mandatory drawings)

Figures: Pyramid of concepts "digitization", "digitalization" and "digital transformation", implementation of digital technologies within enterprises, components of pricing in the restaurant

Tables: Restaurant's turnover for specific products, Restaurant's Net Profit, Gross Profit, Net Income, etc.; SWOT analysis of the company.

6. Consultants for parts of the master's qualification work

Part of the project	Surname, name, position		
		Given	Accepted
1.	***N. Chaplynska, Ph.D. in Economics***	+	+
2.	***N. Chaplynska, Ph.D. in Economics***	+	+
3.	***N. Chaplynska, Ph.D. in Economics***	+	+

7. Date of issue of the assignment

Time Schedule

№	The title of the parts of the qualification paper (work)	Deadlines	Notes
1.	I part of master thesis	*10.10.2023*	***On time***
2.	II part of master thesis	*10.11.2023*	***On time***
3.	III part of master thesis	*10.12.2023*	***On time***
4.	Introduction, conclusions, summary	*20.12.2023*	***On time***
5.	Pre-defense of the thesis	*22.12.2023*	***On time***

Student _____
(signature)

Consultant _____
(signature)

Conclusions:

The Master's qualification work is designed at the high scientific level, its content and structure fully meet with methodological requirements. The study provided a meticulous analysis of the digital development of enterprise management system under circumstances in last 4 years (COVID-19 and military aggression). The student describes such theoretical categories as digitalization, digitization and digital transformation, their differences and mutual aspects. From practical point of view the research includes information from the company LLC National Trading Group, where big emphasize was made on digitalization of management system, assess its effectiveness and providing recommendations for its improvement.

The work contains all the important parts and details of scientific research with empirical, theoretical analysis and recommendations. The practical recommendations were formulated accurately and focused on the main goal and tasks of the work.

In general, if successful defense, the master's qualification work can claim to be "excellent" score.

Consultant _____ Natalia CHAPLYNSKA

TABLE OF CONTENTS

INTRODUCTION

Nowadays the digital transformation penetrates more and more into human life, into all spheres of industry and services, brings irreversible changes in the management of companies, making them more flexible and competitive in the market. Digitization opens up many new opportunities for the effective development of organizations and is an effective mechanism for positive changes in business. Given the relevance of transformational processes in the socio-economic and political life of modern countries, this topic requires a more detailed study.

Digitization is a relatively new field of research in both Ukraine and foreign science, but the number of developments in this field is constantly increasing. Most of them relate to the essence of the concept of “digitalization”, its main stages, analysis of foreign experience of digital transformation, advantages of this process for companies and obstacles to its implementation. However, there is a need to clarify the meaning and importance of digitalization for the further functioning and development of business in an unstable and dynamic environment. For this purpose, it is necessary to analyze the value of digitization, digitalization and their impact on the management system of the enterprise in the conditions of the economic crisis caused by the pandemic and military aggression. The development of information technologies and means of communication, first of all, electronic networks, gave a powerful impetus to the formation of a new direction of conducting modern business - digitalization of economic relations. In an era of such rapid changes, business cannot work according to old models, it must change, otherwise there is a big risk of being left behind by competitors. Therefore, sooner or later, companies will have to accept the new rules of the game and experience the digitalization process for themselves. Ukraine does not remain aloof from globalization processes.

Previously, this topic has been researched by various economists S. Brennen, D. Kreis, H. Zhosan, A. Tymofeeva, A. Nazarova, M. Gupta, as well as many others, since the subject of digitization, digitalization and digital transformation is very extensive. This area of research is very important when it comes to business

development, emanagement system and has impacted it in many ways. This scientific work aims to add to the discussion by offering ways of business development and enhancement based on the digitization framework.

This master thesis work, first of all, will look into the processes of digitalization in enterprise management basing on the theoretical materials and analyzed knowledge to understand how digitalization can impact the management system of a specific business globally. Secondly, it will study the digitalization in the context of the COVID-19 pandemic and military aggression effects on a specific case of LLC National Trading Group through completing an internship and analyzing its environment, financial and economic factors, digitalization processes and observing its competitiveness. Finally, this work will apply all of those research materials and consider ways of business development and enhancement in the framework of digitalization of the enterprise management system by conducting an analysis and formulating the relevant recommendations.

The **relevance** of this work is defined by global challenges that force organizations to critical adaptation of businesses to digital systems. The COVID-19 pandemic has necessitated the abrupt transition to remote work, redefined consumer behaviors, and disrupted supply chains, forcing organizations to rethink their strategies. Simultaneously, military conflicts have introduced geopolitical uncertainties, affecting businesses operating in affected regions. The work sheds light on how enterprises navigate challenges caused by pandemic or military conflict situations, providing valuable insights into efficient digital transformation.

The **aim of this master's qualification work** is to study the digitalization processes within the business entity and provide a comprehensive analysis of how digitalization has been leveraged by enterprises to adapt to such unforeseen challenges as the COVID-19 pandemic and military aggression. The research intends to study and establish ways of optimizing operations, and positioning organizations for sustained success in the face of adversity.

In order to achieve this aim, the following **tasks** were set**:**

– develop an understanding of digitization, digitalization and digital transformation;

– find out how digitalization affects the enterprise management system;

– evaluate the impact of COVID-19 pandemic and military aggression crises on the digitalization processes within the business entity;

– provide understanding of digitalization of modern business processes by completing an internship at Ukrainian company (LLC National Trading Group) and analyzing its strategies and competitiveness;

– analyze how digitalization of enterprise management system can help to further improve business development and its resilience in face of such challenges as pandemic and military conflict;

– establish ways of business development and enhancement through the focus on digitalization of its management system.

The **methodological basis** for this work is comprised of peer-review journal articles, acclaimed internet publications, case studies, interviews and personal data analysis and calculations.

The **research objects** are the digitization, digitalization and digital transformation in the enterprise management system in the context of the COVID-19 pandemic and military aggression.

The **research subject** is a set of theoretical, methodological and practical approaches to establish the ways of digitization and digitalization of the management system, business development improvement and defining company competitiveness for LLC National Trading Group.

Master thesis consists of an introduction, 3 chapters, conclusion, list of references and annexes.

CHAPTER I. OUTLINE THE CONCEPT OF DIGITALIZATION AND DIGITALIZATION IN EMS IN THE CONTEXT OF THE COVID-19 PANDEMIC AND MILITARY AGGRESSION

1.1. Theoretical framework of the basic concept of the terms

The literature review shows that it is intrinsically important to differentiate the terminology “digitization”, “digitalization”, and “digital transformation” and to understand the correlation between them.

It should be noted that the terms “digitization” and “digitalization”, as well as in Ukraine, are quite often used as synonyms in foreign scientific circles. But, as S. Brennen and D. Kreis emphasize [9] digitization and digitalization are two conceptual terms that, although sometimes used as identical, but a careful analysis of which allows us to confidently conclude that there are clear differences between them.

The initial concept is "digitization," encompassing the creation of a digital version of physical objects or characteristics. For instance, a paper document can be scanned and saved as a digital file (e.g., PDF). Essentially, digitization involves transforming non-digital elements into digital representations or artifacts. These digital forms can then be utilized by computerized systems for various purposes. In manufacturing, for example, manual or mechanical measurements can be converted into electronic readings. Digitization serves as a foundational link between the physical world and software, a practice ongoing since the 1960s. It acts as a facilitator for processes that generate business value due to the necessity for accessible data.

The second concept is “digitalization” that refers to enabling or improving processes by leveraging digital technologies and digitized data. This term refers to the socio-technical change invoked by digital technologies and their intersection with digital infrastructures [56], therefore, digitalization presumes digitization. Examples of this can range from basic elements like PLC logic or PID control within

a microprocessor-driven system, to sequential logic governing batch processes or automated shutdown procedures.

Digitalization serves to enhance both productivity and efficiency while concurrently reducing operational costs. It involves the refinement and optimization of existing business processes without undergoing a fundamental transformation. This entails a shift from human-driven processes to those propelled by sophisticated software mechanisms.

Business transformation facilitated by digitalization is the essence of Digital Transformation (Figure 1.1). It is a disruptive phenomenon achieved by employing up-to-date digital technologies and adopting a forward-looking strategy. This transformation holds significant implications for businesses, giving rise to new business models, innovative products and services, and improved customer experiences [58].

Thus, digitization refers to “creating a digital representation of physical objects or attributes, while digitalization refers to enabling or improving processes by leveraging digital technologies and digitized data” [24].

Fig.1.1 Pyramid of concepts “digitization”, “digitalization” and “digital transformation”

Source: https://www.rosenbauer.com/blog/en/digitalization-rosenbauer

Several studies suggest different interpretation of the mentioned terms. The relevant explanation of the concept is provided by to Katz R., “Digitization per se, is the process of converting analogue information to a digital format. Digitization, as a social process, refers to the transformation of the techno-economic environment and socioinstitutional operations through digital communications and applications. Unlike other technological innovations, digitization builds on the evolution of network access technologies (mobile or fixed broadband networks), semiconductor technologies (computers/laptops, wireless devices/tablets), software engineering (increased functionality of operating systems) and the spillover effects resulting from their use (common platforms for application development, electronic delivery of government services, electronic commerce, social networks, and availability of online information in fora, blogs and portals)” (26).

The difference of the concepts is highlighted by Bloomberg J. [7]. He clarifies that digitization essentially involves converting analog information into binary code (zeroes and ones), enabling computers to store, process, and transmit the information. According to Gartner’s IT Glossary [17], digitization is the process of changing from analog to digital form. There are numerous cases that could serve as an example of digitization in organizations, for instance, convering data from the tape into the flash drive.

Digitization plays a crucial role for enterprices in terms of managing both analog information and processes colloquially termed "paper-based," where the term "paper-based" metaphorically represents analog processes. Nevertheless, it is imperative to recognize that digitization primarily pertains to the transformation of information, not processes. This is where digitalization comes in.

Bloomberg J. also states that “Digitalization is the use of digital technologies to change a business model and provide new revenue and valueproducing opportunities,” according to Gartner’s glossary. “It is the process of moving to a digital business” [7].

Digitalization, according to Gartner, Inc., is “the process of employing digital technologies and information to transform business operations”, and by this

definition, digitalization is primarily concerned with business operations rather than either social interactions or business models, although it is evident that these concepts are interconnected.

Brennen S. identifies "digitization" and "digitalization" as two closely associated conceptual terms frequently utilized interchangeably across various literatures. The Oxford English Dictionary (OED) traces the initial incorporation of the terms "digitization" and "digitalization" in the context of computers back to the mid-1950s. As per the OED, digitization is defined as "the action or process of digitizing," encompassing the conversion of analogue data, particularly images, video, and text, into digital form. “Digitalization, by contrast, refers to “the adoption or increase in use of digital or computer technology by an organization, industry, country, etc.” [9].

Digitization is a diverse process encompassing both symbolic and material dimensions. Symbolically, it involves the conversion of analog signals into binary code, represented as 1s and 0s. Consequently, digitization generates information that is adaptable across diverse mediums, materials, and systems. Theoretically, any material featuring two distinguishable states can serve for storing and transmitting digitized signals, ranging from silicon transistors and punch cards to atomic structures. This versatility has prompted scholars to underscore the concept of the "immaterial" in discussions related to digitization. [47].

Nowadays, more and more businesses recognize that digital is the only possible way to convey information, communicate with the market and generally exist. After all, the one who remains on the analog format of work falls out of the overall picture and risks losing clients, partners and consumers. So, there is only one way out - to move to a digital environment, using both digitization and digitalization.

If we consider that digitalization began 15 years ago - and for the IT sector this is a significant period of time, then by now almost all companies should have become digital. But in reality, most businesses are digitalized, but not digitalized.

The difference between these concepts can be considered on the example of a company that provides accounting services. In the 1990s, their work processes were

reduced to notes on paper and calculations on a calculator. It was a typical analog business. Then they have transferred its processes to Excel or 1C. Thus, it was digitized, but it has not yet become digital. In order to take a full-fledged step into digital, the company must create a platform that will synchronize and process financial data, generate reports, automatically send them to the tax office, etc. This will eliminate much manual labor, but it will also create new opportunities.

Digitized business is the reproduction of analog processes in digital. Digital business is the creation of new, improved processes with the help of technologies, restructuring of the entire structure of the company.

A good example of digitalization (not digitization) is Ukrainian “Diya”, that allows to get certain services online, such as checking the car in the database, collecting information, etc. [47].

Thus, the digitalization process signifies the integration of digital innovations and technologies to automate and optimize business operations, along with enhancing communication channels between the companies and its customers. The necessity for digital data transmission arises from the desire to streamline processes and, from the enterprise's viewpoint, to enhance competitiveness in the market as well as to make the Ukrainian market more attractive for investments. In the age of digital technologies, enterprises that can provide values meeting consumer needs effectively are well-placed to gain favorable positions in the market. Additionally, digitalization enhances motivation among human resources by saving time and simplifying business processes. Nowadays the situation with the implementation of digital transformation is the following [71]:

• more than 60% of enterprises actively use digitization in their work;

• more than 20% serve and attract customers with the help of digitalization;

• about 15% of enterprises take the first steps to become familiar with digitalization;

• only 3–5% intend to implement digital technologies in their activities (Figure 1.2.).

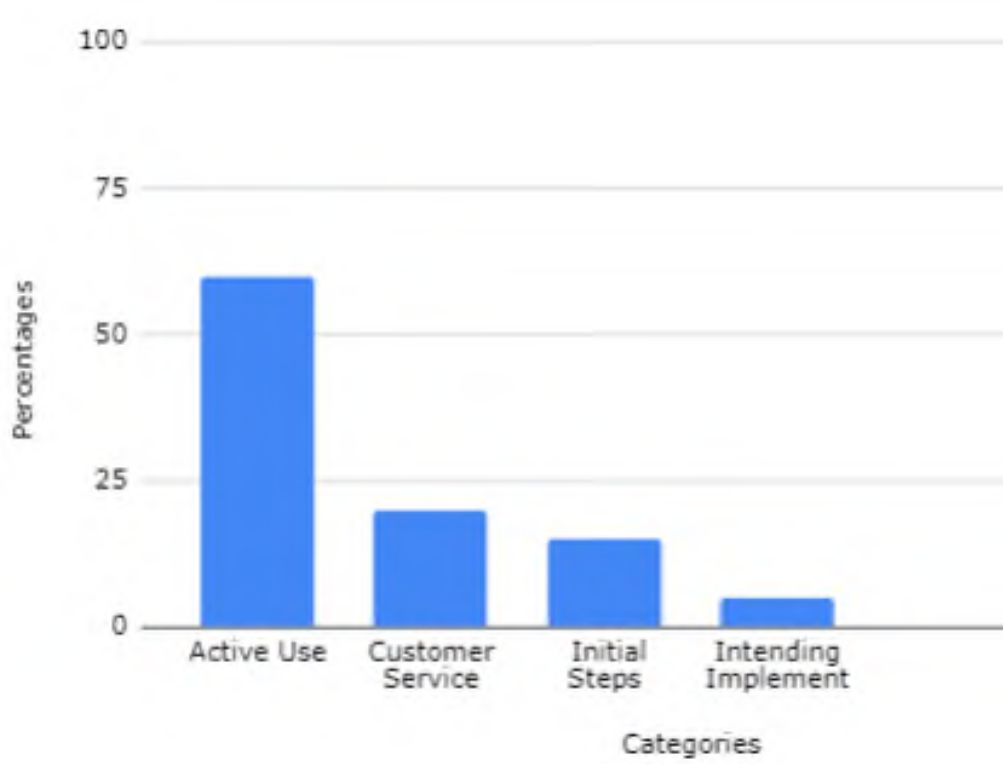

Fig. 1.2. Implementation of digital technologies within enterprises

Source: complied by the author

One of the important tools of digital transformation of business processes of enterprises is the development of accounting in the direction of the use of IT technologies. The transformation of accounting into digital accounting involves the creation, presentation and transmission of economic information in electronic format. Instead of using papers, all business transactions are conducted in an electronic environment. The main areas of development of digital accounting include:

1) introduction of electronic document flow in the business processes of enterprises;

2) use of cloud services (IaaS, PaaS, SaaS) in the information processes of enterprises;

3) use of blockchain technologies and artificial intelligence tools in accounting processes;

4) Big Data and Internet of Things technologies [54].

The studies of domestic scientists indicate a long-term trend of using cloud technologies in the activities of domestic enterprises (client-banks, e-mail, accounting reporting programs, accounting programs with which it is possible to work via the Internet) [54]. Statistical data show that the main demand for cloud technologies is in small and medium-sized businesses of Ukraine (85%), while in EU countries this figure is 53% [46]. The main purpose of cloud technologies for domestic enterprises is to exchange documents with counterparties, host corporate mail, and create data storage [46].

Digitization brings numerous advantages. Therefore, the elimination of errors, repetitions, and static from digitized information facilitates seamless storage and transfer, enabling the "easy manipulation and display of these data" [73]. Digitized information also affords “data compression” [52], that allows for “controlled storagein large volume” [73]. Thus, the ease of manipulation inherent in digital data grants users greater control over information. This enhanced control empowers users to shape their own experiences with it. To put it differently, digitization allows for a broad degree of interactivity between the user and information. This idea is particularly emphasized in the expansive concept put forth by legal scholar Lessig, who envisions digital technologies as a catalyst for a democratic form of "remix culture" [44].

mplicit in the controllability of digitized information is its capacity for seamless, cost-effective, and precise transmission between points. With digital bits having only two possible states, 1 or 0, receiving nodes are prone to make fewer errors during the transfer and decoding of data compared to what occurs in analogue systems. Scholars argue that this could lead to "lossless" transmission, fostering "less faults and replication of mistakes and more opportunities for exact processing and calculation" [53].

At the same time, this emphasizes that the transfer of digital information does not involve the actual movement of physical materials. Instead, it entails the transfer of information regarding the configuration of transistors—essentially constituting a process of copying. Some view this as diminishing the boundary between the

original and the duplicate, a notion that holds importance, particularly in the legal assessment of intellectual property [7; 5].

Thus, there is a significant difference among “digitization”, “digitalization”, and “digital transformation”. Clear distinctions between these terms are important, as they shape the evolution of digital practices in various sectors. Numerous studies and interpretations stress the importance of these digital concepts. Scholars articulate these terms differently, but the common thread remains clear—digitization encompasses the conversion of analog data into digital form, while digitalization revolves around leveraging digital technologies for business model enhancement and optimization. With the increasing adoption of digital technologies, companies gain access to new opportunities and competitive advantages. This includes enhanced communication, better resource accessibility, and minimized transaction costs. Moreover, the significance of digitalization has been underscored by the COVID-19 pandemic, compelling companies to incorporate digital technologies as a strategy to sustain competitiveness and resilience in times of crisis [34]. Moreover, taking all these points into consideration, it is important to underline the necessity of enterprises adopting these digital practices to stay competitive and relevant in a progressively digital world. Such adoption is seen as a key aspect of providing value to consumers, amplifying market share, and increasing investment attractiveness. Furthermore, the ability to control and transfer digital information easily, accurately, and at a lower cost compared to analogue systems points to the critical evolution of information processes.

1.2. Digitalization of the enterprise management system and its necessity in the context of military aggression

Studies of enterprice management system (EMS) are well documented, and it is widely recognized that various approaches exist to interpret the essence of the concept. Within the different perspectives offered by scholars regarding the definition of this concept, two main ones can be distinguished:

1) as a system consisting of two specific subsystems: a subject and an object of management;

2) as a set of enterprise's links (services), which ensure its functioning [78].

The second perspective is the following variation of the enterprise management system definition: it encompasses the entirety of enterprise services, all subsystems, their interconnections, and the processes that guarantee the functioning of the enterprise [50].

It was reported in literature that the enterprise management system comprises a network of interconnected subsystems that can be evaluated using specific indicators, allowing the assessment of their influence on the overall efficiency of the entire system. This enables a comprehensive evaluation of the enterprise management system and facilitates its flexible and efficient construction [51].

A recent study by Sviatnenko V. [64] concluded that it's important to consider that the configuration of the enterprise management system and the significance of each of its subsystems will vary depending on:

1) changes in the external and internal environment;
2) strategic goals;
3) level of use of modern technologies, including in management activities;
4) results of financial and economic activities;
5) various risks, which always accompany any economic activity and other factors [64].

Some authors have also suggested that “the enterprise management system is a set of subsystems that reflect certain aspects of management: goals, functions, principles, methods, management bodies, personnel, equipment and technology, and the purpose of which is the development and implementation of management influence on production in accordance with the objective laws of general development. So, the enterprisemanagement system refers to a system whose influence is aimed at the management object at the same time as its transformation into the desired state according to certain quality and qualitative parameters, and consists of elements that are united by the common purpose of functioning” [63].

From a managerial point of view, the activity of enterprises is a system consisting of economic, social, technical and organizational interrelated elements, which, in turn, act as component subsystems, namely, the one that is managed (managed) and the subsystem that controls (controlling), of this object and subject of management. The effectiveness of the control subsystem’s activity varies depending on the goals of the complex system (controlled subsystems and controlled). Therefore, its structure should be changed in such a way that management work contributes to a high level of efficiency, quality and sufficient purposefulness of the functioning of the managed object (and therefore in the entire system as a whole) as much as possible [8].

In other research Thrope E.K. proposes that enterprise management systems are comprehensive application software packages designed to meet diverse software requirements of large organizations [66]. These systems enable IT teams to oversee and manage extensive, intricate, and occasionally geographically-dispersed IT infrastructure and applications.

The majority of EMS solutions encompass fundamental business functions such as financial processing, HR management, customer relationship management (CRM), budgeting, sales activity, and logistics and supply chain management. While most EMS tools are typically packaged as a comprehensive solution, they can also be tailored to suit an organization's specific needs. Primarily designed for large enterprises, as the name implies, enterprise management systems are often

impractical for small or medium-sized organizations due to implementation costs and the relatively less complex IT infrastructure typically found in smaller businesses.

The primary advantage of EMS lies in minimizing the workforce required to support intricate IT infrastructure and business operations, given that everything is consolidated into a single package, making it considerably easier to oversee throughout the organization. Additionally, when an EMS is cloud-based, it provides substantial scalability without the associated IT complexities. This proves advantageous for global enterprises as it can seamlessly scale to any size, simplifying the management of international trade relationships with suppliers, contractors, partners, and customers [66].

Businesses that aim to survive in the coming decade, or even the next year, must undergo transformation to adapt to this new 'digital reality' [19]. Therefore, in contemporary circumstances, digital technologies undergo transformation and adaptation across diverse domains of enterprise business processes. This encompasses the utilization of cutting-edge software, artificial intelligence, mobile and cloud technologies, blockchain, and other innovations collectively cause significant transformational processes in enterprise management. An important tool of digitalization involves advancing accounting to establish a comprehensive information system with control elements within the enterprise management system.Information interaction in electronic format is necessary both at the level of enterprises and the economy of states as a whole. Hence, in the era of the digital economy, a prevalent trend is incorporating IT technologies into the operational workflows of businesses. This integration aims to bolster their competitiveness and enhance overall market efficiency. [42].

The introduction of digitization and digitalization at the enterprise became one of the elements of supporting economic stability in Ukraine during a full-scale war. Now aggressor country is trying to attack not only with missiles but also with cyberattacks, trying to prevent access to digital services and interfere with government agencies, energy, logistics, and healthcarea all the spheres, including

the economy of enterprises. To strengthen protection, some institutions have moved central databases abroad (notably Prozorro) and tested for vulnerabilities in information systems (notably the Ministry of Digital).

Cyberattacks on the information systems of institutions, businesses, and organizations, along with blackouts and damage to Internet backbones resulting from enemy action, have impeded the progress of digitalization and the restoration of economic growth during times of war [62].

Now aggressor country is trying to attack not only with missiles but also employing cyberattacks in an attempt to obstruct access to digital services and disrupt government agencies, energy, logistics, healthcare, and all sectors, including the economic operations of enterprises. In order to enhance security measures, certain institutions have relocated central databases overseas (notably Prozorro), conducted vulnerability assessments on information systems, as evidenced by the Ministry of Digital.

The progress of digitization aimed at establishing a digital state and revitalizing economic growth during the war has faced impediments. These challenges include cyberattacks targeting the information systems of institutions, businesses, and organizations; disruptions and damage to Internet backbones orchestrated by the enemy; and a decline in the number of IT specialists due to migration and military service. Furthermore, the essence of digitization has evolved amid the conflict, pivoting from an emphasis on service delivery to the cultivation of defense capabilities.

Ukrainians have no doubts that the war will end and the reconstruction of the country and its economy will begin. The use of the latest digital technologies will make enterprises more dynamic and competitive. The use of digital document management will provide a number of advantages:

1) the most important thing is saved — the time and intellectual resources of specialists;

2) all work related to documentation, from their collection to inspections, is simplified many times over;

3) compliance and tracking of documents also becomes easier;

4) the convenience of digital platforms minimizes the risk of errors due to the human factor;

5) rejection of paper has a positive effect on the environment.

A good example of the digitalization of internal processes was provided by Maksym Zinin [32], Deputy Chairman of the Board of IBOX BANK. Maksym Zinin said that thanks to the introduction of a number of digital services, IBOX BANK managed to achieve a positive financial result and effectively cope with the challenges of war, such as blackouts. The financial institution transferred all services to the Cloud, introduced powerful protection for the site and client-bank against cyberattacks, launched the Electronic Document Management System (EDM), improved the operation of branches in conditions of power outages, and also facilitated financial monitoring processes thanks to special software.

Main Digital actions of IBOX BANK are:

1) migration of all bank and HR services to the cloud;

2) protection against DDOS attacks of the website and the bank client;

3) bank branch during the war:

• use of satellite Internet at bank branches

• use of inkjet printers instead of laser printers (energy saving)

• use of charging stations and generators

• use of mobile communications as an alternative to backup terrestrial channels in western Ukraine;

4) introduction of SED for intra-bank processes;

5) in-house development for the IboxBank application;

6) transfer of reporting to PowerBi to improve financial monitoring;

7) introduction of the card module;

8) Prevention and detection of violations of financial monitoring facts in the bank”s activities using the deployment and integration of analytical software.

Also in 2022, IBOX BANK launched an electronic document management system. This implementation made it possible to optimize the processes of document

circulation in order to accept the rapid review and approval of documents, helped to comply with regulations and provided a single place for storing documents. Therefore, the implementation of e-document circulation is the most timely and relevant solution and a vivid example of digitization [32].

In the conditions of rapid digitalization, the tools of marketing activities have reached a qualitatively new level, creating new relationships with customers through online advertising, the ability to place orders on the Internet, customer service in real time, products and services that meet the needs of customers as much as possible. Digitalization opens up new opportunities, and most importantly, it helps to optimize and improve the company"s activities, which is especially relevant for Ukrainian business during the war.

In the conditions of war, communication and movement are limited, and therefore the use of ordinary marketing tools is insufficient. It can be said that digitalization is now the basis for successful communication with customers, reduction of overall costs and optimization of business processes. From December 2022, most Ukrainian enterprises work with certain restrictions, in an online format, with a significant reduction in territorial coverage. Companies have limited resources, so there is a need for their rational use. In this regard, it becomes valuable to study and find ways to implement digital transformation at enterprises, methods of optimizing business processes in modern conditions, as well as researching the various consequences of digitalization for the economy of Ukraine.

To date, the war in Ukraine has caused a lot of problems for Ukrainian business. Among the key ones, it is worth highlighting limited resources, a small number of orders, problems with logistics, a lack of personnel, finances and raw materials. Difficult modern conditions should not be a reason to abandon the implementation of digitalization, but on the contrary should stimulate this process due to future prospects. Digital transformation in general can implement rationalization in three global areas: document flow, data analysis and organizational activities. First, with the help of social networks, SSM promotion, launch and optimization of an advertising campaign on various platforms, it is possible to solve the problem of

business localization, expand the market presence. Secondly, the implementation of digitalization allows for effective planning and management of the company"s limited resources. Automation of most processes allows to reduce the number of business processes, personnel and costs. Thirdly, a crucial advantage lies in enhanced communication with customers. Utilizing programs enables a more detailed delineation of the target audience, discovery of novel methods for collaboration, and the accumulation and analysis of statistical data through digital tools. This facilitates obtaining precise insights into the requirements and preferences of consumers. Finally, it should be added that the implementation of digital accounting makes it possible to effectively organize inbound and outbound logistics and make management decisions in real time [59].

Also, N. Alyushina rised the topic "Digitalization and War: How Civil Service Can Avoid "Digital" Collapse" in her author"s blog of the Head of the NADS in the international publication PA TIMES - the magazine of the American Society for Public Administration (ASPA) National [3]. In the article Alyushina N. states that a vulnerability of digitalization is its reliance on technical conditions. This becomes apparent in situations of infrastructure destruction and power outage, posing a risk of disconnecting from digital services and severing the essential connections between the state and its people.

It is emphasized that in the context of military aggression, the war is regressing the economy, leading both countries and enterprises to revert to more traditional, paper-based routines. However, such a shift can be justified as it allows for the avoidance of critical risks. At the same time, it was acknowledged that these developments possess considerable strengths alongside their associated risks, and the economy continues to prioritize digitalization. Even in blackout conditions, it is possible to use working digital tools.

Thus, the impact of digitalization in the Ukrainian business landscape during the challenging times of military aggression and the ongoing war is a significant one. While the conflict has posed severe challenges in the form of cyberattacks, power outages, enterprises have shown remarkable resilience in the face of these

adversities. The businesses have turned to digitization, altering their operations and strategies, encompassing essential areas like document management, client interactions, resource optimization, and process automation. Many enterprises have demonstrated a successful adaptation to digitalization by deploying various digital services, reinforcing cybersecurity measures, and implementing electronic document management systems. This adaptation has not only enabled businesses to continue operations despite the challenging environment but also significantly improved overall productivity and resource utilization. As the conflict continues to shape the economy, the adoption of digital tools, social media marketing, and enhanced data analytics showcases the commitment of Ukrainian enterprises to adapt to the rapidly changing environment. Moreover, digital initiatives, even amid blackouts and challenging conditions, continue to provide valuable avenues for businesses to manage and grow, emphasizing the importance of digitalization in sustaining and advancing the Ukrainian economy.

Also, the discourse around enterprise management systems in the prospection of digitization provides various interpretations, emphasizing the multifaceted nature of this subject. The structure and weight of different management systems are seen as dynamic, influenced by various factors such as the external environment, strategic goals, technological advancements, financial outcomes, etc. This adaptability is crucial in attaining optimal efficiency in the functioning of these systems. Furthermore, the introduction of digital technologies like artificial intelligence, cloud-base solutions has prompted significant transformations in enterprise management. The need for information interaction in electronic formats both within enterprises and at the macroeconomic level is vital in achieving competitiveness. Therefore, integrating digital technologies into business processes is essential for sustained success in the market.

1.3. Impact of COVID-19 pandemic on the digital environment

The COVID-19 pandemic is a crisis that has become a catalyst for global economic, social, personal and corporate change. Their number, the speed with which they occur, allow to realize that companies are facing changes that can happen once in a generation. Difficult economic prospects and long-term uncertainty require managers to make not only tough and unpopular decisions, but also to use adaptive intelligence and creative thinking [79].

The pandemic has changed society and accelerated the digital transformation of our world. Digital technologies have allowed business and society to continue functioning even during quarantine. In modern market conditions, the digitalization process is one of the factors that determine the economic development of enterprises and society as a whole. Those who are stuck in the analog format of doing business risk losing customers, partners and consumers. Therefore, the only way out is to be digital. Since 2000, nearly 52% of Fortune 500 companies have exited the game. Some of them went bankrupt, some were bought, and most of them lost because they could not keep up with the digital revolution.

According to the Innosight [31], this period had been reduced to 25 years. In 2011 - up to 18 years by 1980. If the current rate of business failure continues, Innosight predicts that 75% of S&P 500 companies will disappear by 2027. Innosight made this prediction in 2017, and this year"s pandemic can significantly accelerate the process of "culling" those who do not have time to digitalize.

More and more executives agree that the digital revolution will change the way their organizations work. According to the April 2019 McKinsey Digital Quotient survey, 93% of executives believe that digitalization is critical to achieving strategic goals [14].

One of the real opportunities to rearrange important business processes at the enterprise and adapt to social and epidemic restrictions of business activity is digitalization. At first glance, it may seem that only IT companies know how to work

remotely using numerous web tools. But it suddenly turned out that the digital format is not only about the IT sphere. Today it is about any field of activity.

Due to the pandemic, the digitalization process, which is directly based on digitization, has certain problems related to:

1) low level of qualified personnel, the need to retrain the staff;

2) lack of a well-defined strategy for the ongoing development of enterprises;

3) insufficient financial capability of enterprises for rapid digitization of information and documents and implementation of digitization in business activities;

4) presence of numerous risks, including potential customer loss, intense competition, and financial uncertainties [29].

Despite the challenges listed above, many enterprises in Ukraine were able to withstand them. Such national retailers as “ATB”, “Silpo”, “Fora”, “Varus”, “Prostor”, “MasterZoo” launched their online sites in response to quarantine restrictions and increased social security requirements.

Thus, ATB, the leader of the Ukrainian food retail market, launched its online store in two months. “As for the development of e-commerce, we followed a wait-and-see attitude. But everything changed radically after the introduction of the quarantine,” said the general director of the enterprise, Borys Markov, in an interview with Delo.ua. The retailer launched the “click & collect” service, when you can order goods online and pick up the order at the nearest store, paying for it on the spot.

“Silpo” also launched “click & collect” and “scan & go” service (called “Vilnokasa”), which allows you to scan the barcode of goods with your phone, put them in the basket, and show the QR code at the self-service checkout and pay all shopping.

Along with existing challenges, rapid digitization promotes active digitization of business processes, which provides many opportunities for the enterprise:

1) time savings and enhanced productivity result from automating the company's production and internal processes;

2) optimization and improvement of communications - both internal and external;

3) streamlining and enhancing both internall and externall communication;

4) enhanced competitiveness through the improvement of client experience and overall optimization of workflow processes [68].

The spread of the global COVID-19 pandemic contributed to the faster spread of digitization in the enterprise. At first, it was believed that only IT companies would be able to work in the market remotely from the office, using web tools. As it turned out, this was a mistake, and the world economy understood that the term “digitalization” applies to any sphere of business. An enterprise that failed to implement digital technologies in production became an outsider in the market. That is why during the COVID-19 pandemic, a new saying was implemented: “Die or become digital”. However, the introduction of digital technologies presented the company with the following challenges :

1) low level of competence of employees in digital literacy, as a result - the need to retrain staff;

2) lack of a clear strategy for further development of the company;

3) insufficient funds for financing and implementation of digitization at the enterprise;

4) the presence of a large number of risks: high competition, possible loss of potential customers, financial risks, etc.

The latest digital innovations significantly reduce a company’s overall costs by improving their products or services in a particular industry. At the same time, the productivity of the company also increases, because the implementation of digitalization makes it possible to move to a higher level of management with minimal effort. The transformation of business models through data-driven approaches is imperative for any company seeking to enhance performance and gain a competitive advantage. This involves adopting a proactive stance to not only survive but also overcome the challenges presented by a volatile business environment [67].

A new study conducted by the consulting company McKinsey [48] suggests that the COVID-19 crisis can dramatically accelerate digital transformation and significantly change the business landscape. Even before the global pandemic, 92% of companies believed that their business model needed to be changed through digitalization. And the crisis only accelerated these transformations. Digital transformation means, first of all, the transition from experimentation to active scaling. These steps should take place in two directions: within the company and through the development of new areas of business, which proves the relevance of the research [79].

Scientists distinguish two main directions of digitalization:

- productivity improvement;
- establishment of enterprises dealing with information that has been converted into digital format [53].

Since the latest technologies can substantially minimize overall costs, businesses can enhance their products and services within a specific industry. Moreover, the company's productivity experiences an upswing, as this transformation enables a transition to a new level of management, demanding less effort, among other factors. Exploring the second dimension, establishing such enterprises necessitates cloud environments, providing access to information from any part of the world and on any device. Presently, the popularity of these cloud environments is escalating daily, driven by their maximum convenience and the imperative to mitigate the spread of COVID-19 through quarantine restrictions.

Amidst the challenges caused by the COVID-19 pandemic and war state, businesses have faced disruptions, necessitating rapid adaptations for survival and continuity. Thus, digitalization enables remote work setups, virtual collaborations, and digital communication channels. Companies with strong digital frameworks have shown resilience, maintaining operational continuity despite imposed restrictions and economic volatility.

At the same time, the enterprise management systems (EMS) have witnessed a profound impact due to the pandemic and military aggression. The need for real-

time data, agile decision-making, and remote management capabilities has escalated, aligning with what digitalization can offer. These systems, previously reliant on traditional frameworks, have undergone intensive digital transformation to accommodate remote access, cybersecurity fortifications, and digital workflows.

Nowadays, digitalization becomes an inevitable part of modern world, influencing various aspects, including businesses. Along with the digitalization and digital transformation, they reshape the way the companies operate as well as affect the enterprise management system (EMS) functions. The COVID-19 pandemic and the state of military aggression emphasized on the critical necessity in these digital components for the business to stay alive and be competitive on the market.

A comprehensive study of digitalization, particularly in the realm of enterprise management systems, has played an important role as it has fostered a cultural, economic, and technological evolution, redefining conventional business paradigms by creating seamless interactions within the economy and society. Moreover, it emerged as a fundamental element enabling businesses to adapt, survive, and thrive amidst the challenging circumstances posed by the COVID-19 pandemic and military aggression.

Such crisis appeared to be a significant catalyst for accelerating the digital transformation of enterprises across various industries. The impact of the pandemic forced organizations to navigate the challenges and opportunities presented by rapid digitalization. “Companies have experienced profound changes and in a very short time implemented solutions based on digital technologies” [1] and have to adapt their operations swiftly, incorporating digital strategies to stay competitive on the market. While such challenges as the low level of digital literacy, inadequate resources for digitalization, unclear strategies, and various risks have been identified, many businesses, particularly in Ukraine, have pivoted to embrace digital technologies, which areconsidered as a key to identifying, evaluating and exploiting opportunities, enhancing a venture's competitive edge, optimizing efficiency, and fostering innovation, especially during uncertain times [57]. Despite these difficulties, the introduction of digital tools in enterprises brought new opportunities,

including enhanced productivity, communication optimization, and improved competitiveness. As the pandemic continues to shape our world, the study and understanding of digitalization's impact on business activities remains of utmost importance.

To conclude, the first section of this thesis discussed the theoretical framework of the basic concept of the terms, explained digitalization of the enterprise management system and its necessity in the context of military aggression and COVID-19 pandemic. By digging into this topic, it was found that the terminology should be clearly stated and differentiated. Thus, digitalization is the process of converting analog data into digital formats, has become indispensable, offering agility, accessibility, and resilience in an increasingly interconnected world. Digitalization, on the other hand, leverages these digitized assets, employing digital technologies to refine and streamline existing processes, thus enhancing productivity and enabling cost reductions. Digital transformation, the ultimate evolution, encompasses a fundamental shift in business paradigms, leveraging digitalization to reimagine operations, business models, and value propositions.

COVID-19 pandemic has forced a global shift towards digitalization, fundamentally affecting the enterprise management system. This crisis, as well as military aggression, underscores the crucial role of digital strategies in ensuring business survival and continuity. Companies facing economic uncertainties are compelled to make tough decisions, necessitating adaptive intelligence and creative thinking.

Digital technologies have emerged as a lifeline during pandemic, allowing businesses to function remotely. Digitalization is no longer exclusive to the IT sector, it has become a necessity across all industries. The saying "Die or become digital" highlights the urgency for businesses to implement digital technologies, avoiding obsolescence in the market. Despite challenges like low digital literacy and financial constraints, businesses that embraced digitalization obtained numerous vauable benefits such as increased overall cost efficiency, improved products and services, and heightened productivity.

CHAPTER II. STUDY OF LLC NATIONAL TRADING GROUP AND ITS COMPETITIVENESS ON THE MARKET

2.1. Analysis of the company's environment, organizational structure, financial and economic indicators

According to the program of the Ukrainian-American Concordia University, the internship was held at the LLC National Trading Group, a private form of ownership enterprise. The main areas of activity are retail trade and restaurant business. The founder and beneficial owner of the LLC is one individual. LLC carries out its activities on the basis of the charter of the company. In its work, the LLC is guided by the following basic legal acts:

- Law of Ukraine "On enterprises in Ukraine"
- Economic and Civil Codes of Ukraine
- Law of Ukraine "On Consumer Rights Protection"
- Law of Ukraine "On the Basic Principles of State Supervision (Control) in Economic Activity"...
- Law of Ukraine "On Payment Services"
- Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Procedure for Conducting Trade Activities and Rules of Trade Service in the Consumer Goods Market", etc.

The main sources of information used during the internship: regulatory and legal acts that regulate activities in the field of restaurant business, including the enterprise operation in the conditions of the COVID-19 pandemic and during martial law, founding documents of the enterprise, primary accounting documentation, reporting documents, results of an anonymous survey of restaurant visitors, etc.

Due to the marital law started on February 24th, 2022 in Ukraine a part of the restaurant business was closed and competition is significantly reduced. The establishments that remained in operation quickly caught up with the audience of

competitors. Therefore, some restaurants and cafes were not in a loss at and even on the contrary, received a higher income than before the war.

Restaurants are known to operate in a constantly competitive environmanet and are easily sensitive to crises [20]. The restaurant market in Kyiv has shrunk by half, at least a third of establishments have been closed since the beginning of the war.

In May, 2022 the co-founder of the National Restaurant Association, Olga Nasonova, reported the following: “Of the 500,000 active consumers of restaurant services, half remain at best. Therefore, half of the market simply does not have its own audience, it is not physically present. Restaurant Kyiv today is a city of harsh contrasts. A dead desert with closed doors of cafes and restaurants is enlivened by oases of clogged up waste establishments. At least a third of Kyiv restaurants are closed. It is not known when they will open”. According to her observations, only about 20% of open catering establishments show good loading [49].

Since the beginning of the war until September 2022 about 7,000 restaurants and cafes have closed in Ukraine, and more than 2,000 new establishments have opened. She also stated that “There is no accurate statistics, as it is simply not recorded at the moment, among these 7,000 there are establishments that have closed and those for which there is no data (in the occupied territories, in the shelling zones). The market is down about 25% from February 2022. In some regions, the drop in the market amounted to more than 50% (Kharkiv, Mykolaiv, Zaporizhzhya, Luhansk regions), in Kyiv, Odesa, Dnipropetrovsk regions - a drop of up to 30%”. Also, Positive dynamics are observed in the western regions. In Lviv and the region, the number of restaurants and cafes increased by approximately 30%, in Zakarpattia, Chernivtsi, and Ivano-Frankivsk regions, an increase of approximately 20% is observed” [81; 55].

In June 2023 Olga Nasonova reported that “Between January and May 2023, 172 cafes and restaurants were opened in Kyiv, and approximately 350 establishments since the beginning of the war” [81].

According to the statistics provided by specialized gastronomic publication “PostEat”, despite all external obstacles, more than 150 locations have opened in the

Ukrainian capital for almost a year of full-scale war. In total, in 2022, the PostEat editors counted 156 new restaurants. Among them only 15 institutions appeared on the left bank of the city, the remaining 141 institutions chose the right bank of Kyiv [6].

It is important to underline that in the context of the military aggression and in the conditions of the economic crisis, missile danger and blackouts, the safety becomes the first place priority. Taking into consideration all the main points and analyzing the market, the restaurant “Gastro Ukryttia” was established in May 2023 on the left bank of Kyiv. It is located on Raisy Okipnoi street, 4a, near the Livoberezhna metro station, in the basement of the commercial building, working hours: 10am – 10:30pm Mon – Sun. The remarkable restaurant’s distinguishing feature lies not only in its high quality cuisine but in its unwavering commitment to serve in times of crisis. .The establishment”s unique location in a basement has transformed it into a refuge, a place of both culinary delight and safety when it matters most.

Dmytro Sapronov, the chef of the restaurant is famous by his talents and experience working in Michelin stars restaurants in France brings his exceptional skills to every dish, thus the restaurant becomes more and more popular as the affordability meets culinary excellence. “Gastro Ukryttia” offers a diverse menu embracing Ukrainian and international culinary traditions, staring with cold and hot snacks to main courses, salads, side dishes, and desserts. The weekly updated lunch menu ensures variety and freshness. There is a wide bar menu as well, offering a delightful range of beverages, from beer and wine to spirits, coffee, tea, and soft drinks. The establishment also deals with additional services, such as delivery of lunches for companies to offices, general food delivery, food to take away and banquets.

Thus, “Gastro Ukryttia” comprises the following competitive advantages that set it apart from other restaurants in Kyiv:

- unique location as shelter: it is located in a basement, which serves as a bomb shelter during air raid alerts. It provides a sense of safety and security to diners

during uncertain times, making it a sought-after choice for those who value preparedness and comfort;

- culinary excellence: the restaurant's head chef, Dmytro Sapronov, brings a wealth of experience, including time spent at establishments with Michelin stars. His culinary expertise ensures that the dishes served are of the highest quality and prepared with skill and innovation;
- affordable price policy: "Gastro Ukryttia" combines exceptional cuisine with an affordable price policy. This approach allows a wide range of customers to enjoy gourmet-quality food for moderate prices, making it an accessible and attractive dining option;
- diverse menu: the restaurant offers a diverse menu that includes cold and hot snacks, main courses, salads, side dishes, desserts, and a regularly updated lunch menu. This assortment ensures that diners have a variety of choices for every visitor;
- cuisine variety: The restaurant serves dishes from both Ukrainian and international cuisines, providing a wide range of options to cater to different tastes;
- resilience and preparedness: the restaurant's willingness to remain open during air raid alerts demonstrates its commitment to serving customers under any circumstances [80].

Taking into consideration the competitive advantage, "Gastro Ukryttia" becomes an attractive and unique dining destination in Kyiv. Its commitment to quality, affordability, safety, and diverse culinary experiences positions it as a standout restaurant on the local market.

The main task of the planning and economic department at the Company National Trade Group is the formation of a unified economic policy of the enterprise, its economic planning and analysis of the economic state, and the formation of the price. At the restaurant "Gastro Ukryttia" where I took my internship, there is one assigned accountant-economist (outsourced, who deals with issues of planning and economic development. The main functions in this direction include:

1) development of product and services prices;

2) planning of cost and prices for the future period;

3) calculation of food purchase volumes;

4) continuous accounting;

5) ensuring adherence to the established uniform standards;

6) compilation and submission of tax, statistical and other forms of reporting.

Based on the assigned tasks, the accountant-economist performs the following functions in the direction of planning and economic activities:

1) formation and determination of the economic strategy of the enterprise's development in order to adapt its economic activity and management system to changing market conditions, external and internal economic conditions;

2) detection of unprofitable products, development of measures to remove them from production;

3) organization and coordination of research to determine the conditions for increasing the competitiveness of products and the development of appropriate measures based on the results obtained;

4) preparation of projects of prospective and current plans of economic activity and development of the enterprise;

5) development of measures to increase labor productivity, reduce production and sales costs, increase production profitability, increase profits and eliminate losses;

6) determining the amount of costs for improving the qualifications of employees based on forecasts of the need for personnel training for the enterprise.

Due to the fact that the National Trade Group LLC enterprise is comparatively small and relatively narrow-specialized, taking into account the restaurant business, it uses the simpliest methods of economic analysis:

1) traditional methods and ways of summarizing and processing economic information (tabular, graphic, balance sheet, detailed comparison, etc.);

2) statistical method (regression, difference method, etc.);

3) logical (heuristic) methods (surveys, expert assessments, forecasting, etc.).

Analysis of methodological planning and analytical work is a process of evaluation and review of available methodological materials and resources used in

planning and analysis of the activities of an organization or enterprise. At National Trade Group LLC it includes the following:

1) collection of methodological materials (methodical manuals, instructions, etc.), for example, recommended size of markups on the products of restaurant enterprises, etc.

2) assessment of the quality of the materials, taking into account the relevance, clarity, completeness and comprehensibility of the instructions;

3) analysis of the conformity of methodical materials with the purpose of the enterprise's activity;

4) assessment of the effectiveness of methodological materials, namely, whether the quality and results of the analysis improve due to their use;

5) development of changes in accordance with methodical materials;

6) ensuring staff access to methodical materials and training staff to use them.

The National Trading Group LLC uses the system of the main economic activity indicators to analyze the efficiency of its activity:

- turnover;
- gross income;
- production costs;
- profit and profitability, etc.

The formulation of economic activity indicators for the enterprise relies on the fundamental principles of supply and demand..

Pricing in the restaurant involves the following components (Figure 2.1). As can be seen from the diagram, the restaurant's cost of goods sold includes:

- food cost;
- wages of production personnel;
- social payments of staff wages;
- update of table inventory;
- maintenance of equipment and machinery (other costs);
- purchase of kitchen consumables;
- equipment depreciation.

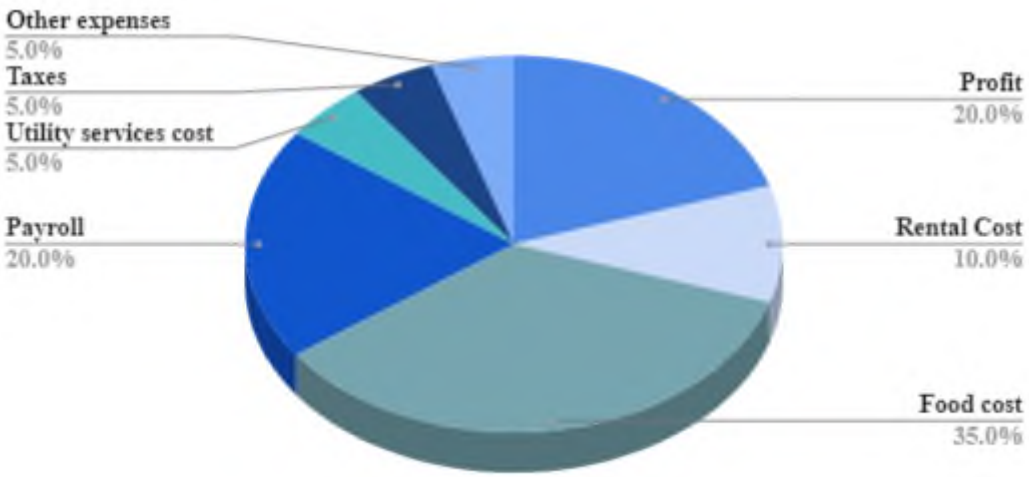

Fig. 2.1. Components of pricing in the restaurant

Source: complied by the author

In addition, administrative costs are included in the cost price:

- room rental;
- payment of communal services (heating, water supply);
- bank charges;
- current repair.

The cost price also includes the cost of selling products:

- advertising and marketing activities;
- delivery costs;
- packaging costs.

The recommended sizes of markups on the products of restaurant enterprises, which are used at the enterprise, are:

- own production: 200%;
- purchased goods: 100%;
- soft drinks, mineral water: 100%.

One of the main and fundamental indicators of the enterprise"s work is turnover. At the restaurant "Gastro Ukryttia" it is calculated for each type of product deparately using methodical recommendations regarding the size of mark-ups. An example of calculating a restaurant's turnover for specific products (Table 2.1):

Table 2.1

Restaurant's turnover for specific products

Product Name	Unit of measurement	Quantity used per day	Purchase price, UAH	Cost at the purchase price, UAH	Markup		Turnover in sales prices (column 5 + column 7), UAH
					% to the purchase price	Total amount (columns 5 x 6 / 100), UAH	
1	2	3	4	5	6	7	8
Potato	kg	12	170,00	2040,00	200	4080, 00	6120,00
Pork	kg	9	11,00	99,00	200	198,00	297,00

Source: complied by the author

These calculation processes at the enterprise are digitized, as they are performed via EXCEL.

The calculation of turnover is carried out both for products of own production and for purchased goods.

Since the company has been operating for less than a year, there is no annual profit report.

The restaurant, like all new enterprises, has large costs associated with the purchase of furniture and decor elements, so I did not take these costs into account when analyzing the economic activity.

To determine the gross income at the enterprise, such indicators as the value of the average check per day and the average number of visitors per day are taken and multiplied by the number of days in the month (Table 2.2).

Table 2.2

Restaurant's Net Sales

Month	Number of days in the month	Average check amount	Average number of visitors per day	Income per day, UAH	Net sales per month, UAH
May	31	364.00	22	8008.00	248248.00
June	30	418.00	34	14212.00	426360.00
July	31	436.00	46	20056.00	621736.00
August	31	482.00	54	26028.00	806868.00

Source: complied by the author

Net income is defined as the difference between gross income and cost of production.

Net income (per month) is determined by the difference between gross income (per month) and taxes (VAT, excise duty, etc.) (Table 2.3).

Table 2.3

Restaurant's Net Income

Month	May	June	July	August
Net income, UAH	193633.44	332560.80	484954.08	649357.04

Source: complied by the author

Gross profit is calculated as the difference between the net income from the sale of products and their cost price (Table 2.4).

Table 2.4

Restaurant's Gross Profit

Month	May	June	July	August
Gross profit, UAH	4163.82	11905.68	18040.30	23971.54

Source: complied by the author

The net profit of the restaurant is calculated as the difference between gross profit and income tax (18%) (Table 2.5).

Table 2.5

Restaurant's Net Profit

Month	May	June	July	August
Net income, UAH	3414.33	9762.66	14793.05	19656.66

Source: complied by the author

Profitability can be determined by dividing the gross profit by the net sales amount and multiply it by 100% (Table 2.6).

Table 2.6

Restaurant's Profitability

Month	Net Profit, UAH	Net Sales, UAH	Profitability, %
May	3414.33	248248.00	1.38
June	9762.66	426360.00	2.29
July	14793.05	621736.00	2.38
August	19656.66	806868.00	2.40

Source: complied by the author

Thus, the financial data of restaurant "Gastro Ukryttia" taken from May to August 2023 presents a positive tendency of performance. Over this four-month period, there is a noticeable and consistent growth in net profit and net sales, along with an improvement in profitability.

In May, the restaurant recorded a net profit of 3,414.33 UAH with net sales of 248,248.00 UAH, resulting in a profitability of 1.38%. However, as we progress

through the summer months, the restaurant's financial performance sees significant upturns.

June performes the substantial growth, with a net profit of 9,762.66 UAH and net sales of 426,360.00 UAH, resulting in a profitability of 2.29%. This is a clear indicator of the restaurant's ability to capitalize on increased customer traffic during the summer season.

The positive trend continues into July, where the net profit climbs to 14,793.05 UAH and net sales reach 621,736.00 UAH. The profitability further improves to 2.38%, reinforcing the restaurant's financial strength.

August culminates in an impressive net profit of 19,656.66 UAH, coupled with net sales of 806,868.00 UAH, yielding a profitability of 2.40%. This demonstrates the restaurant's resilience and capacity to maintain strong financial performance.

Taking into consideration the data analysed, "Gastro Ukryttia" has shown consistent growth in both net profit and net sales, marking a successful summer season. During first months of restaurant operating, the increasing profitability underscores effective management and business strategies, making the future outlook for the restaurant quite promising. It is essential for the restaurant to maintain these positive trends, capitalize on its competitive advantages, and continue to provide high-quality services to ensure ongoing success.

Gastro Ukryttia is a comparatively new and growing restaurant and HR management plays pivotal role in building a skilled and motivated workforce, ensuring compliance with regulations, maintain safety and hygiene standards, and enhance the overall customer experience [30]. HR services are important for the restaurant owners as they can maintain safe work environments for their employees, create satisfying experiences for their customers, and continue to expand the business.

Due to the specifics of the industry, the HR dealing with the restaurant has unique challenges:

- staffing challenges: there is no enough labor to meet the demand;

- unpredictable scheduling: it is not a regular, predictable 9-5 business, restaurant HR needs to adapt to constantly changing employee part-time and full-time availability and schedules;
- interpersonal concerns: as far as restaurants have high-pressure environment, managers often find themselves addressing interpersonal issues among employees.

While it may not be typical for restaurants to have HR department, restaurants still have needs that benefit from HR support. A well-managed HR function can contribute significantly to the success and sustainability of a restaurant business. "Gastro Ukryttia" hired a professional outsourced HR specialist in the restaurant industry who helps to manage everything, starting from restaurant staffing, scheduling, compensation, bonuses, payroll, and compliance.

To have a professional and qualified staff in a restaurant is essential for effective management and ensuring the smooth operation of the establishment. As far as "Gastro Ukryttia" is a new developing restaurant, the team is in the process of expansion (Table 2.7).

Within the whole period of the restaurant functioning there were three cases of dismissal for the following reasons: voluntary resignation [1] and non-fulfillment of duties [2].

Taking into consideration the data above, the HR flows in "Gastro Ukrytia" shows that the restaurant's HR is actively managing personnel issues while maintaining a majority of successfully working employees. The dismissals for non-fulfillment of duties highlight the importance of effective performance management and the need for clear policies and expectations. The restaurant is focused on ensuring a well-functioning and productive team.

Thus, studying the National Trading Group LLC's operations, particularly in the sphere of the restaurant business during times of war state, the activity of "Gastro Ukryttia" shows a positive dynamic. During a period of intense market contraction and business closures, the restaurant has shown the resilience due to its unique location, providing a sense of security during uncertain times, and high-quality cuisine. The restaurant's commitment to offer affordability and a diverse, ever-

evolving menu has played a significant role in attracting and retaining customers. Financial analyses indicate an upward tendency, marked by consistent growth in net profit and sales, endorsing the effective management and strategic business approach. The HR management, though facing unique challenges in the restaurant industry, has successfully maintained a competent and motivated workforce, ensuring a smooth operation despite the times of global labor shortages in the country and unpredictable schedules caused by pandemic period as well as current war.

Table 2.7

Restaurant's staff structure

Category	Role	Main function
Management & Leadership	General manager (1)	Responsible for overall restaurant operations, including financial management.
	Administrator (1)	Supports the general manager, handles staff supervision and customer service.
Service Staff	Waiters (3)	Greet customers, take orders, serve food and drinks, and provide excellent customer service.
Culinary Team	Head Chef (1)	Head of the kitchen, responsible for menu creation, food quality, and kitchen staff supervision.
	Sous Chef (1)	Assists the head chef in kitchen operations and often takes charge in their absence.
	Line Cooks (2)	Prepare and cook food to order, follow recipes, and ensure food safety and quality.
Managing Support	HR Manager (1 outsourced)	Responsible for managing staffing, recruitment, training, employee relations, compliance, bonuses.
	PR & SMM Specialist (1 outsourced)	Creating and executing social media strategies, content creation, and engaging with the audience to enhance the online presence and reputation of the restaurant.
	Accountant (1 outsourced)	Managing financial transactions, budgeting, payroll processing, tax compliance, and financial reporting to ensure the restaurant's financial stability and adherence to accounting standards.
Maintenance & Cleaning	Cleaners (2)	Responsible for maintaining cleanliness in the dining area, restrooms, and kitchen.

Source: complied by the author

2.2. Marketing, logistics management and digitalization of the processes in the modern restaurant industry prospects

Marketing is is the act of showcasing the restaurant concept and offering its services to the general public to win the business. It is a largeand inevitable part of what builds up the restaurant brand.

The primary advantage of restaurant marketing is its capacity to boost revenue by attracting more customers, both in-person and online. Additionally, restaurant marketing offers a range of other benefits:

- it enhances customer loyalty and increases client's lifetime value;.
- it attracts professional staff members;
- it disseminates the restaurant's mission, vision, and objectives;
- it increases brand awareness;
- it increases the opportunities get new business partnerships and collaborations, etc.

The restaurant industry is fiercely competitive, and thriving in this landscape requires more than just offering good services. To distinguish themselves and thrive, restaurant owners must adopt proactive marketing strategies that extend beyond conventional methods. (11). The budget for marketing expenses is in average 6400 UAH per month.

"Gastro Ukryttia" uses active marketing strategies to enhance customer retention and loyalty. The restaurant hires an outsoursed PR & SMM consultant that focuses on the following:

1. Recognition of the establishment to attract customers. It builds anticipation and awareness among potential customers, which can lead to increased visitors traffic. The advertising campaign had started two weeks before the restaurant was opened via different channels: social media, online advertising tools, such as Google Ads or Facebook Ads, online reviews on the specific websites that promote restaurants etc. [43].

2. Marketing promotions. The restaurant offers various promotions such as discounts for dining with friends or repeat visits, happy hours, birthday and anniversary special, weekday specials etc. These promotions effectively incentivize customers to return.

3. SMM & PR strategy. Developing a PR strategy is vital. “Gastro Ukryttia” maintain active and engaging social media profiles on Instagram, which is considered the best choice when it comes to influencer marketing campaigns [4] and Facebook, sharing high-quality photos, videos, and stories about your restaurant. Also, the enterprise pays attention to its media relations, building relationships with local journalists, food bloggers, etc.

4. Event management. Well-executed events are a powerful tool for restaurant success in this-competitive industry. The restaurant arranges the press lunches, thematic meetings, stand-up shows on Sundays, creating memorable experiences for the customers. There are also charity evemnings organized in partnership with the charity foundation “Sertse Evropy”.

5. SEO promotion (Google Maps). Utilizing SEO for platforms like Google Maps ensures that potential customers can easily find the restaurant when searching for local dining options and can check the reviews. This visibility is essential for attracting clients.

Among other services, “Gastro Ukryttia” provides a food delivery option from a restaurant. This service is one of the most important and relevant trend of recent years, which will only intensify in 2020-2022 due to COVID-19 restrictions.

The latest study by ResearchAndMarkets shows the volume of the global market for online orders from catering establishments amounted to $84.6 billion in 2018. As per analysts' predictions, robust growth is expected to persist in the future, averaging around 9.8% until 2026. In Ukraine, the delivery sector is also witnessing significant expansion, with the market having grown by 35% over the last 5 years.

So far the reastaurant have not integrated with any of the delivery services, but it actively accepts the orders offline (by visitng the restaurant) or online (via phone,

social media chats, etc.) and arrange a taxi delivery (one of the stuff members presents the order in person, to make sure it is successfully received).

Effective restaurant supply chain management is a must-have process for any successful restaurant. It is important to know how to source, acquire and buy raw ingredients. In addition to food supply chain management challenges, there might be some unforeseen issues. For instance, during the peak of the COVID-19 pandemic, obtaining equipment such as ovens became more challenging, and certain shipments took several months to arrive. The significant decline in sales, attributed to temporary shutdowns and seating capacity restrictions, highlighted the imperative of digitalization as a vital strategy for ensuring business survival. In this context, the adoption of digital tools presents opportunities to enhance the competitiveness and revenue streams of restaurants [21]. Thus, “Gastro Ukryttia” maintained a_strong relations with the suppliers of products and other necessary items. Among them there are such companies as MAUDAU, METRO, GoodWine. Each of partners has a user-friendly mobile app that makes the process of creating an order for the delivery very convenient and time-saving.

Nowadays, IT management in a restaurant encompasses vital tasks and responsibilities to ensure the effective operation of information systems. It is important to understand the system and the processes of information handling within the restaurant and get acquainted with the standards for developing technical specifications and understanding the intricacies of the programming system. Considering the impact of the COVID-19 pandemic, it is probable that the upcoming restaurant landscape will deviate from the pre-epidemic scenario. Strong digitalization efforts by restaurants play a significant role, including investments in digital resources such as point-of-sale (PoS) devices, online ordering systems, and e-commerce platforms, as well as the development of new processes for pick-up, delivery, and low-contact interactions with customers [40].

There are different Point-of-Sale (PoS) systems, reservation and booking platforms, inventory management software, and other technological solutions that can enhance operational efficiency and customer service within the restaurant

business. The restaurant “Gastro Ukryttia” implemented the cross-platform Point-of-Sale app “Poster”. This technological solution allows to take orders from the tablet, laptop, PC or Mac, monitor sales, and manage the entire restaurant operations. “Poster” has a wide range of the benefits that make it probably the best and most convenient system:

- user – friendly interface, so there is no need to provide time-consuming trainings for the team;
- supports “offline mode”, so if the internet connection is unstable, it is still possible to register the orders and print the checks, the system synchronizes the data once the network is restored;
- it is all-in-one app solutions that allows not only to work with the orders, but work with the customer base, make table reservations, add transactions and streamline all the operations at one place;
- perfect synchronization, once the order is taken, it is enough to enter it in the PoS app and they are sent to kitchen right away;
- variety of payment options, the guests may pay by smartphone, credit card, or with cash and even split the bills.
- menu management built-in, so it is easy to use convenient dashboards to create menus that allow to track ingredients, quantities, and food cost calculated for each dish;
- easy-customized, giving an option to organize menu items by categories, sort them by popularity, and assign pictures to every dish;
- built-in loyalty programs, promotions, and special offers;
- analytical tools and different dashboards for convenient tracking, etc.

It is important to underline that “offline mode” option is especially relevant for the possible blackouts. Despite the restaurant is equipped with the power stations to keep operating without the centralized electricity, it still requires some time to switch to alternative sources and such option becomes very useful.

As far as the modern consumer relies heavily on mobile devices, it is crucial for restaurants to adjust their menus to align with this digital trend [28]. Additionally,

the perceived risks associated with the COVID-19 pandemic compelled restaurants to undergo swift digital transformations [10]. Globally, many restaurants embraced alternative digital menus, employing methods like placing QR codes on tables. This allowed guests to access menus using smartphones instead of traditional printed menus [39]. “Gastro Ukryttia” uses all the specter of the services provided by “Poster” as it is very efficient to have everything within one and the same system. One of the most used additional program extension in the restaurant is QR menu. “Poster” allows to create a contactless QR menu, that synchronize new products, dishes and automatically updates any changes.

By conducting a survey, I found out that more and more people prefer QR Menu rather than paper version as the first one is the way to sustainability (Table 2.8).

Table 2.8

Survey Data

Number of Visitors	Age	Type of menu	Number of Visitors	Age	Type of menu	Number of Visitors	Age	Type of menu	Number of Visitors	Age	Type of menu
1	18	QR	1	65	QR	1	51	QR	1	63	Printed
3	19	QR	1	41	Printed	1	66	Printed	1	57	QR
3	25	QR	2	24	QR	1	71	Printed	2	53	QR
3	28	QR	2	39	QR	2	30	QR	1	54	Printed
2	38	QR	1	32	QR	2	31	QR	1	58	Printed
1	42	Printed	1	37	QR	2	34	QR	1	36	QR
1	46	QR	4	27	QR	1	21	QR	1	40	QR
1	22	QR	2	29	QR	3	23	QR			

Source: complied by the author

To analyze which menu type is more preferable, the following criterias were taken into consideration:

- number of visitors;
- age of visitors;
- the type of menu they prefer (Figure 2.2).

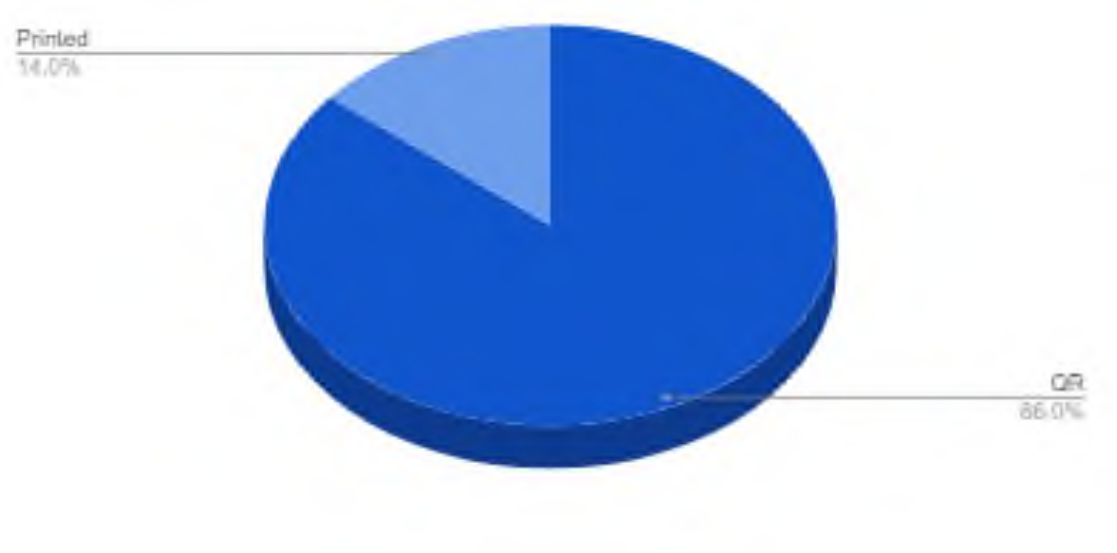

Fig.2.2 Preferable Type Menu

Source: complied by the author

Thus, the ages of visitors that took participation in survey range from 18 to 71. The most common age groups among visitors appear to be in their late teens to early 30s, but there are also visitors in their 30s and older. The QR menu appears to be more popular among visitors, as it is chosen in the majority of cases. The printed menu is selected less frequently, typically by elder people due to the poor skills in the smarphone usage, however they agree that QR menus are a great option for contactless payments, referring to COVID-19 pandemic, and that it is more sustainable then printed menu. At the moment, “Gastro Ukryttia” offers QR menus for each of the tables and continues to provide a printed menu on customers” request.

In general, an intelligent system for a restaurant, often referred to as a Restaurant Management System (RMS) or Restaurant PoS System, is a comprehensive software solution designed to enhance various aspects of restaurant operations and customer service. Such systems are inevitable in the modern restaurant industry where the digitalization is growing every day. The choice of the “Gastro Ukryttia” is “Poster”, slick restaurant PoS app & robust web-based admin software that allows to streamline all the operations and save on hardware.

All in all, the comprehensive exploration of restaurant operations demonstrates the critical role that marketing, logistics, IT management, and strategic

planning play in the success of “Gastro Ukryttia”. The restaurant’s active marketing strategies have significantly increased customer retention, focusing on recognition, promotions, events, and developing of the brand via social media. Following modern trends, “Gastro Ukryttia” has recognized the importance of food delivery services, particularly in the context of the growing market trends, even without integrating with established delivery services, ensuring offline and online orders are efficiently managed and delivered. The restaurant’s efficient supply chain management involves strong relationships with partners to secure necessary supplies. The significance of IT management has been emphasized, particularly in adopting the “Poster” system, streamlining operations, and providing a contactless QR menu that appeals to a majority of the restaurant’s diverse customer base, enhancing convenience and sustainability. This comprehensive approach and digital transformations not only illustrates the restaurant’s adaptability and success in a competitive market but also underscores the importance of these strategies in ensuring the restaurant’s resilience and customer satisfaction, even amid unpredictable circumstances such as blackouts or the ongoing pandemic, etc.

2.3. Assesment of strategic management and innovative activity in the company

The development of strategic management is crucial for the restaurant business in order to optimize operational workflows and profitability. The restaurant business is an interesting process, however it may face very specific challenges in this dynamic industry. The successful functioning of restaurant business entities hinges on efficient management. This involves attracting new customers, fostering loyalty, enhancing service security, expanding business partnerships, and implementing contactless service experiences and digital technologies for product (service) delivery [72]. Thus, the strategic management is a fundamental aspect of running a successful restaurant business. It helps to stay competitive, understand the market

and customers, operate efficiently, manage risks, and plan for both short-term and long-term growth.

SWOT analysis is an essential tool for a restaurant to identify its internal strengths and weaknesses and to evaluate external opportunities and threats. This tool allows “Gastro Ukryttia” to understand main directions to work on and to formulate informed strategies, optimize operations, and remain competitive on the market (Figure 2.3).

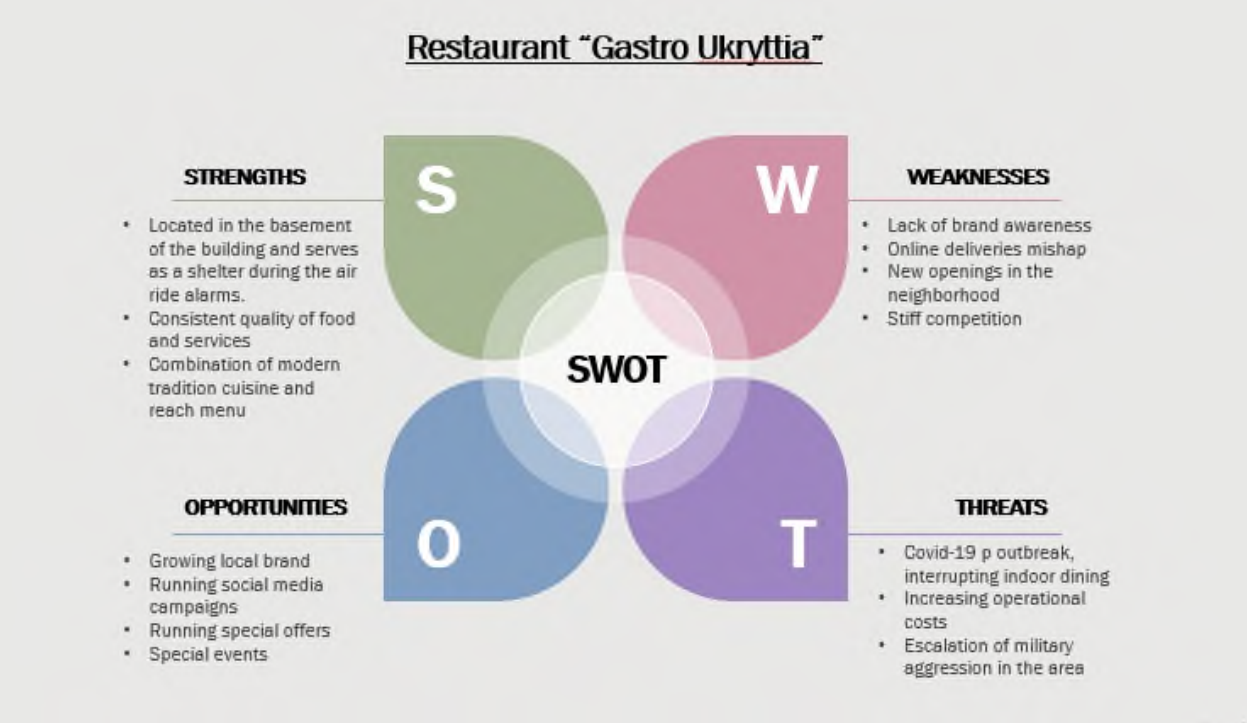

Fig. 2.3. Restaurant’s “Gastro Ukryttia” SWOT analysis

Source: complied by the author

“Gastro Ukryttia” is committed to the core values of culinary excellence, safety, inclusivity, and innovation. The restaurant’s credo is to provide a safe and welcoming place for the visitors and to provide with a high-quality exceptional dishes of Ukrainian and international cuisine.

In order to be up-to-date restaurant, “Gastro Ukryttia” uses such such key technologies as Point-of-Sale (PoS) systems and online marketing through social media (Facebook, Instagram) to connect with the customers.

Among the main principles of the restaurant's strategic development are the following ones:

- culinary excellence, the team continuously improves the culinary excellence by offering innovative and diverse menus, along with classic favorites;
- safety and security, the restaurant ensures safety during air raid alerts, positioning itself as a reliable refuge and shelter in the context of military aggression;
- innovation, implementing it into the operations, keeping the management system up-to-date;
- guests engagement, continuously organising hosting events, charity activities, and collaborations with neighboring businesses;
- sustainability, the restaurant sticks to sustainable practices, such as sourcing locally and minimizing food waste, promoting QR menu.

The mission of "Gastro Ukryttia is to provide an exceptional dining experience, emphasizing safety and comfort for every visiot during the uncertain times Ukraine faces today [25].

The restaurant business is different from all other kinds of other industries within the service sector. Innovative activity management plays an important role in the success and sustainability of "Gastro Ukryttia" as the industry is very dynamic and the competition is tough.

The innovation policy of "Gastro Ukryttia" is overseen by a dedicated innovation management team. This team is responsible for formulating, implementing, and overseeing innovative strategies and projects within the restaurant.

Innovations play a crucial role in market survival, enhancing processes, products, and evolving business concepts. "Gastro Ukryttia" consistently develops new products to replace outdated ones as client preferences shift. The restaurant distinguishes itself not only through menu variations, including diverse ingredients and preparation methods, but also by incorporating modern technologies in food preparation. Nowadays, the robots have become moreand more popular with the restaurant industry as robots can greet restaurant customers and facilitate orders in their preferred language, irrespective of nationality. These robots are not only

utilized for taking table orders but also play a role in product preparation. Autonomous robotic arms can independently prepare ordered drinks or desserts following practical recipes, eliminating the need for human involvement. Particularly during the pandemic, these robots have the capability to handle the entire process from preparation to serving at tables, minimizing the necessity for human-to-human interaction [77].

Currently, the management of “Gastro Ukryttia” consider an idea to implement the specifc robots, that can be used in the food preparation process such as: robotic hands that fries burgers (Miso Robotics), automates that prepare salads (Spyce). Such technologies allows to have one and the same quality standards for the dish, especially if the decision is taken to start a chain (future prospects). This form of robotics is regarded as one of the most efficient approaches to address future workforce challenges. It is crucial to highlight that the aim is not to replace individuals but rather to optimize the tasks performed by employees.

In Ukraine, technological advancements are not progressing at the same pace as in Europe or the USA. Self-service kiosks and robots have yet to become widespread phenomena. However, many establishments already work with cloud accounting systems, including “Gastro Ukryttia”, waiters use a smartphone or tablet instead of a notebook with a pencil, and there are screens with orders in the kitchens. Thus, everything is possible if dream big and build effective innovation strategies.

The integration of digitalization, any and each of its components (Figure 2.4) within the restaurant industry is very significant amidst the challenges posed by military aggression and the pervasive impact of the Covid-19 pandemic. During periods of military conflict, the seamless transition to digital platforms proves instrumental in maintaining uninterrupted service delivery, effectively countering disruptions stemming from both physical threats and logistical impediments. Digitalization can support sales through price and quantity channels. Automation and increased productivity may enable firms to offer competitive prices, while remote work and contactless online payments can mitigate the impact of shocks on connections to workers and consumers [12]. The incorporation of online ordering

systems, electronic payment gateways, and advanced restaurant management solutions empowers establishments with the flexibility needed to sustain operations in adverse conditions, thereby ensuring their economic resilience.

Moreover, amid the unprecedented disruptions caused by the Covid-19 pandemic, digitalization becomes a crucial imperative for prioritizing public health safety. Contactless ordering and payment systems, alongside the deployment of electronic menus, function as highly effective mechanisms to minimize physical contact and mitigate the potential spread of infectious diseases. The amalgamation of digital platforms not only amplifies customer convenience but also aligns with broader public health goals, cultivating a secure and hygienic dining environment. In light of these considerations, the strategic implementation of digital technologies emerges as an essential contingency measure for restaurants, serving as a pivotal response to the multifaceted challenges posed by either military aggression or public health emergencies.

Despite the fact “Gastro Ukryttia” is a new-born restaurant, it already places a strong emphasis on innovation management to maintain its strong position in the dynamic industry. The restaurant is oriented on digitalization of the management system and continuously introduces new technologies, menu items, and safety measures, fosters a culture of employee-generated innovation, etc. The main vectors considered as the ones that can increase the level of digitalization of the restaurant are online ordering systems, inventory management system, online ordering system, customer relationship management (CRM), kitchen display systems (KDS) and Point-of-Sale (PoS) systems (Figure 2.4).

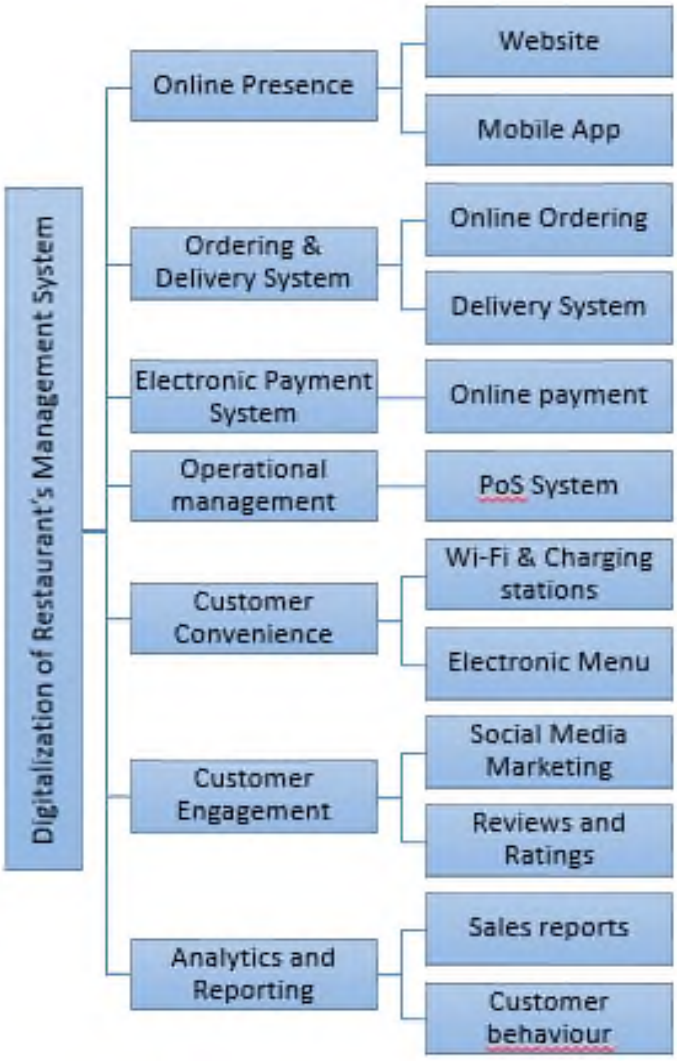

Fig. 2.4 Components of digitalization of restaurant's MS

Source: complied by the author

Thus, inventory management systems play a crucial role by enabling real-time tracking, cost efficiency, and integration with suppliers for automated reordering. Customer relationship management (CRM) systems enhance personalization, loyalty programs, and feedback collection to drive customer engagement. Kitchen display systems (KDS) streamline kitchen operations, ensuring efficiency, order prioritization, and real-time updates on order status. Point-of-Sale (POS) systems serve as central hubs, managing transactions, integrating with inventory, and providing centralized data for analytics, contributing to an overall cohesive digital ecosystem within the restaurant (Figure 2.5).

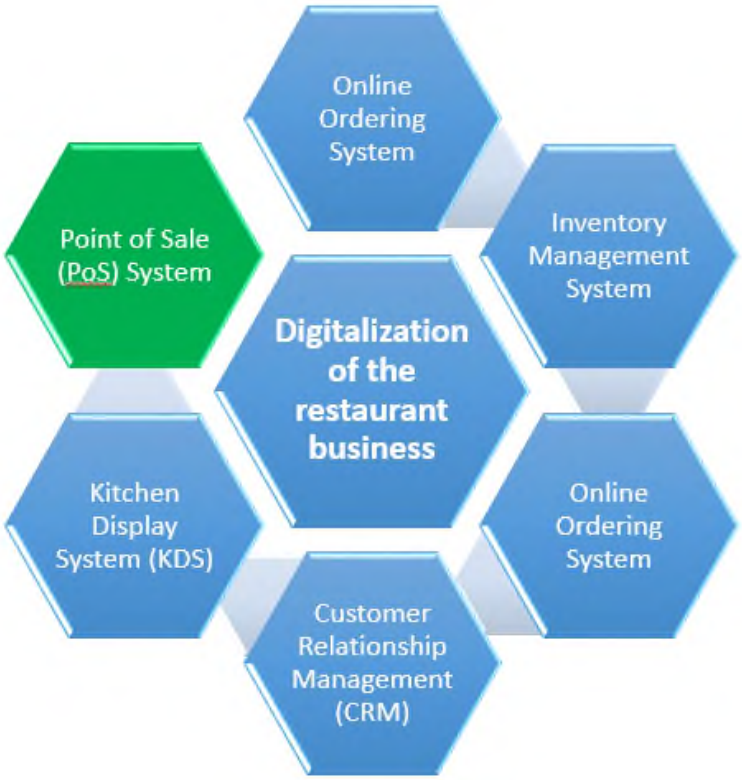

Fig. 2.5. Vectors of digitlization of the restaurant

Source: complied by the author

Nevertheless, the choice of Point-of-Sale (POS) system is the most efficient way to digitalize the restaurant's management system due to its diverse range of options that offer comprehensive solutions. The POS system encompasses various functionalities, each playing a crucial role in enhancing overall restaurant operations. Distinguished from other alternatives, a robust Point-of-Sale (POS) system seamlessly incorporates transaction handling, inventory integration, customer database management, and analytics within a unified platform. This inclusive approach streamlines operations by delivering real-time updates on stock levels, automating financial transactions, and establishing a centralized hub for smooth communication across various restaurant components. The adaptability of the POS system extends to diverse restaurant models, spanning traditional dine-in establishments to contemporary online and delivery services. Its broad positive impact encompasses heightened efficiency, enriched customer experiences facilitated by personalized services, and well-informed decision-making grounded

in robust analytics. Ultimately, the POS system's comprehensive functionalities and seamless interrelation position it as the optimal choice for integrating digital transformation within the restaurant industry due to:

1. Transaction Handling:
   a) Role: The primary function of a POS system is to manage transactions, including order entry, processing payments, and generating receipts.
   b) Interrelation: Seamless integration with other systems ensures accurate financial data and facilitates streamlined accounting processes.
   c) Positive Impact: Enhances efficiency at the front-end, reducing manual errors in order processing and transaction recording.
2. Inventory Integration:
   a) Role: POS systems integrate with inventory management, providing real-time updates on stock levels based on items sold.
   b) Interrelation: This integration aids in preventing stockouts, optimizing ingredient usage, and facilitating data-driven decisions for restocking.
   c) Positive Impact: Enables precise control over inventory, minimizing waste, and ensuring menu items are always available.
3. Customer Database:
   a) Role: POS systems collect and store customer data, forming a comprehensive customer database.
   b) Interrelation: Integration with CRM systems allows for personalized marketing, loyalty programs, and efficient order history tracking.
   c) Positive Impact: Enhances customer engagement through targeted promotions and improved service based on individual preferences.
4. Analytics and Reporting:
   a) Role: POS systems compile transaction data, providing insights through analytics and reporting tools.
   b) Interrelation: Data from POS analytics informs strategic decisions, marketing campaigns, and menu optimizations.

c) Positive Impact: Empowers restaurant management with actionable insights to improve overall performance and profitability.

5. Centralized Hub:

a) Role: POS acts as a centralized hub, connecting various components of the restaurant's digital ecosystem.

b) Interrelation: Integration with kitchen display systems (KDS), online ordering, and other tools ensures cohesive and synchronized operations.

c) Positive Impact: Streamlines communication between different operational areas, fostering overall efficiency and minimizing redundancies.

The restaurant industry is a dynamic and challenging space, demanding astute strategic management for sustainability and success. “Gastro Ukryttia” leverages strategic management as a cornerstone for operational optimization, allowing for competitive positioning, understanding the market, and fostering both short-term and long-term growth. The SWOT analysis employed by the restaurant acts as a pivotal guide, identifying internal strengths and weaknesses, while gauging external opportunities and threats. This analytical framework aids in informed strategy formulation, operational fine-tuning, and market competitiveness. “Gastro Ukryttia” differentiates itself by integrating key technologies like Point-of-Sale systems and active social media engagement, aligned with the restaurant’s commitment to culinary excellence, safety, inclusivity, and innovation. Central to its strategic approach are principles emphasizing culinary innovation, safety, engagement, sustainability, and fostering exceptional dining experiences. The mission to provide a safe haven during uncertain times is paramount, especially considering the geopolitical context in Ukraine. Innovation, a vital factor for survival and success in this dynamic industry, is championed through dedicated management and ongoing development of new products, considering even the implementation of culinary robots for efficient food preparation. “Gastro Ukryttia” stands as an emblem of digitalization, continuously introducing new technologies and fostering a culture of

innovation to maintain its competitive edge despite being a relatively new establishment in the industry.

Summarising the second chapter we would like to mentione that first of all it was focused on analyzing company competitiveness, profitability, management system and level of its digitalization. The internship was held at the LLC National Trading Group, a private form of ownership enterprise, based in Ukraine, the main area of activity - restaurant business. The aim of the internship was completely fulfilled and allowed to use the theoretical material learnt at the university on practice.

The report includes the analysis of the company's environment, organizational structure, financial and economic indicators, marketing, logistics management and digitalization of the processes in the modern restaurant industry prospects. Additionally, assessment of strategic management and innovative activity in the company were examined. Based on such analysis, LLC National Trading Group is a well-established business. Taking into consideration the competitive advantage, "Gastro Ukryttia" is an attractive and unique dining destination in Kyiv. Its commitment to quality, affordability, safety, and diverse culinary experiences positions it as a standout restaurant on the local market.

In Ukraine, digitalization has emerged as a critical aspect for restaurant businesses, especially considering the challenging contexts of the COVID-19 pandemic and military aggression. These circumstances prompted significant disruptions in the restaurant industry, compelling businesses to adapt swiftly to digital solutions for survival and sustainability. During the COVID-19 pandemic, restaurants faced restrictions, reduced dine-in capacities, and shifting consumer behaviors. Digitalization became instrumental in ensuring business continuity. Restaurants swiftly embraced online ordering systems, contactless delivery options, and mobile payment methods to facilitate safer transactions and cater to changing customer preferences. These digital solutions allowed restaurants to maintain operations, expand customer reach, and ensure service accessibility amidst lockdowns and social distancing measures.

Thus, the remarkable and distinguishing feature of “Gastro Ukryttia” lies not only in its high-quality cuisine but in its unwavering commitment to serve in times of crisis. The establishment’s unique location in a basement has transformed it into a refuge, a place of both culinary delight and safety when it matters most. Even though “Gastro Ukryttia” is a recently established restaurant, it prioritizes innovation management to to maintain its strong position in the dynamic, ever-evolving industry. The restaurant actively pursues the digitalization of its management system, consistently integrating fresh technologies, menu offerings, and safety protocols. Moreover, it cultivates an environment that encourages employee-driven innovation initiatives. The overall conclusion and recommendation for the company LLC National Trading Group is to continue with its business activities in the way they do, paying attention to social media activities and marketing as well as keep integrating key technologies like Point-of-Sale systems, to keep abreast of dynamic trends in restaurant industry. The internship itself was a great and insightful experience, that allowed to obtain valuable skills and knowledge.

CHAPTER III. FOSTERING PROFITABILITY AND COMPETITIVENESS THROUGH STRATEGIC DIGITALIZATION IN RESTAURANT MANAGEMENT SYSTEM

3.1. Identifying possible ways to enhance the level of digitalization within the restaurant's management system

In the context of today's market, enhancing the level of digitalization within a modern restaurant's management system is crucial. It is intrinsically important to stay competitive and ensure the longevity of the business and the main reasons are as following:

- Efficiency and productivity improvement: the digitalization of the processes in the restaurant streamlines various operational aspects, automates routine tasks, and reduces manual errors. It enables efficient inventory management, optimizes supply chain logistics, and facilitates smoother operations, leading to increased productivity and reduced operational costs.
- Enhanced customer experience: modern digital tools such as online ordering systems, reservation platforms, and personalized marketing strategies increase the level of customer's comfort, convenience and engagement. Variety of efficient services and seamless transactions through digital channels are highly valued among the visitors as it offers a positive experience.
- Adaptability to changing consumer behavior: as consumer preferences evolve dynamically, digitalization enables restaurants to adapt swiftly. Accessible online platforms, mobile apps, and innovative technologies cater to changing customer expectations, allowing restaurants to stay relevant in a competitive market.
- Data-driven decision-making: digital systems store and analyze data, providing valuable insights as per customer preferences, buying patterns, and operational efficiency. This data-driven approach is very helpful in making informed decisions, refining strategies, and predicting market trends.

- Resilience in unpredictable circumstances: events like the COVID-19 pandemic and military conflicts emphasize the need for adaptable business models. A digitally equipped restaurant can adapt quickly, offering online ordering, contactless payment options, and optimized delivery services, ensuring business continuity in challenging times.
- Competitive advantage and market differentiation: restaurants that embrace advanced digital solutions often stand out among competitors. Implementing innovative technologies, offering unique digital experiences, and leveraging data analytics create a distinct market position, attracting and retaining customers.
- Operational transparency and control: digitalization provides real-time access to operational data and performance metrics. Restaurant owners and managers can remotely monitor operations, track inventory levels, and manage staff more effectively, fostering better control and transparency.
- Sustainability and environmental impact: digitalization can contribute to sustainability efforts by minimizing paper usage, optimizing energy consumption through smart systems, and reducing food wastage through better inventory management.
- Employee empowerment and engagement: properly implemented digital tools simplify tasks for staff, allowing them to focus on delivering quality service. Training and involving employees in digital initiatives can increase their engagement, job satisfaction, and overall efficiency.

Thus, taking into consideration the reasons mentioned above, it becomes clear that enhancing digitalization within a modern restaurant's management system is essential for operational efficiency, superior customer experiences, and adaptability to market changes, data-driven decision-making, and maintaining a competitiveness in the dynamic and challenging environment of the restaurant industry. In order to elevate the level of digitalization within "Gastro Ukryttia" restaurant's management system involves a complex process aimed at integrating digital technologies strategically across various operational dimensions to optimize

efficiency, maximize productivity, and elevate customer satisfaction, especially in the context of the COVID-19 pandemic and military aggression. In order to achieve the preferable level of digitalization in restaurant business, the following systematic process steps are required:

1. Current infrastructure assessment: conduct a comprehensive a thorough examination of the restaurant's current digital landscape, including a review of technological tools such as Point-of-Sale (PoS) systems, inventory management software, customer relationship management (CRM) platforms, and analytics systems. Identify any inefficiencies and technological gaps that may necessitate upgrades or implementation.

2. Strategic planning for integration: develop a strategic plan defining the integration of digital solutions within critical operational aspects. Prioritize integration points within inventory control, order processing, customer engagement, data analytics, and internal workflows, considering their impact on operational efficiency and customer experience.

3. Implementation and deployment: execute the selected digital initiatives systematically, ensuring a structured deployment plan, employee training, and comprehensive testing phases. Effective information-sharing within the business is crucial due to a lack of technical knowledge and the challenge of simultaneously equipping employees with administrative, marketing, and technical skills [36]. Then, evaluate the compatibility and interoperability of new systems with existing infrastructure to mitigate integration challenges.

4. Continuous monitoring and refinement: establish mechanisms for ongoing monitoring and evaluation of integrated digital systems. Track performance metrics against predefined benchmarks, incorporating feedback from both internal stakeholders and customers. Utilize this feedback to refine and optimize processes iteratively.

5. Cybersecurity measures: implement robust cybersecurity protocols to safeguard sensitive data and prevent potential cyber threats. Employ encryption

techniques, access controls, and regular backups to fortify the security posture of digital systems.

6. Scalability and adaptability: consider the scalability and adaptability of integrated digital solutions. Ensure that systems can accommodate future expansion and technological advancements within the restaurant industry. Develop strategies for periodic updates and technological evolution to maintain competitiveness.

By implementing these recommendations, a restaurant can enhance its digital presence, improve operational efficiency, and deliver a superior dining experience, at the same time remaining competitive in the modern restaurant industry. The following tools are found as most relevant to the Ukrainian market and can be considered by restaurants for various digitalization needs. Obviously, It is essential to learn each tool's features, pricing, and suitability before implementation based on each restaurant's unique requirements (Table A.1).

The restaurant sector has undergone significant changes in recent years, primarily influenced by the integration of digital tools. As technology continues to develop, an increasing number of restaurants are adopting digital solutions to optimize operations, enhance customer experiences, and maintain competitiveness in an ever-evolving marketplace.

According to Market.US, "In 2023, the Global Restaurant Digitalization Market was valued at USD 7.9 Billion and is expected to reach USD 29.6 billion in 2032 (Figure 3.1). This market is estimated to register the highest CAGR of 16.3 % between 2023 and 2032" [18]. Embracing digitalization in EMS within the restaurant setting enhances operational efficiency and elevates the overall customer experience. This involves implementing contactless payment methods, establishing online ordering and delivery services, integrating automated inventory management software into restaurant systems, and employing digital marketing strategies. These initiatives collectively propel the restaurant towards digital transformation, contributing to an enhanced and streamlined customer experience [18].

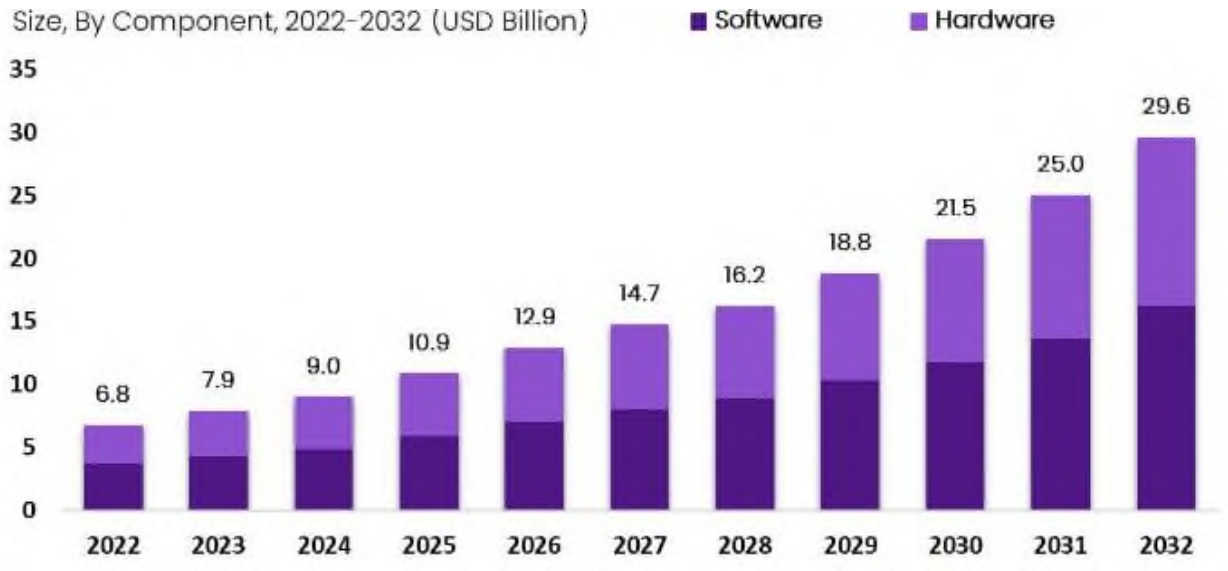

Fig. 3.1. Global Restaurant Digitalization Market (size, by component, 2022-2032 (USD Billion)

Source: https://market.us/report/restaurant-digitalization-market/

Implementing digitalization within restaurants enhances operational efficiency and elevates the overall customer experience. This transition involves adopting contactless payment methods, introducing online ordering and delivery systems, integrating automated inventory management software, and employing digital marketing strategies. These digital applications within restaurant operations pave the way for enhanced customer satisfaction and propel the growth of both individual restaurants and the broader restaurant digitalization market. Nowadays, restaurants have numerous opportunities to reimagine customer experiences, devise data-driven business strategies, and introduce innovative services and products.

The conducted overview of the restaurant market by Poster analyzed the trend of how technology has transformed the restaurant market and examined the services already available in Ukraine [65].

It underscores that with the beginning of the quarantine due to COVID-19 pandemic, cafes and restaurants were nearly empty as the population was forced to stay at home. A similar situation occurred in the spring of 2022 with the beginning of the war in Ukraine. New trends in the restaurant business have helped establishments stay afloat and avoid closure. At the same time, those restaurants that

are unable to adapt to the wave of digitalization have closed down. Even among the establishments that remain open but are not embracing digitalization, a decline in sales is being experienced. Thus, the following trends are defined as the ones that influences the restaurant business the most this year:

1. Food delivery: food delivery from a restaurant is the most important and relevant trend of recent years, which will only increase in 2023 in order to prepare business to any possible quarantine restrictions. This option is must-have, as it is very difficult to compete without it and, accordingly, to break even quickly. According to the latest study by ResearchAndMarkets, the volume of the global market for online orders from public catering establishments amounted to $84.6 billion in 2018. As per recent study by ResearchAndMarkets, the global market volume for online orders from public catering establishments reached $84.6 billion in 2018. Analysts predict that robust growth will persist in the future, averaging around 9.8% until 2026. In Ukraine, the delivery segment is also experiencing significant growth, with the market expanding by 35% over the past 5 years. [27].

2. Using multichannel: it reflects the recent trend in retail, where prominent brick-and-mortar stores transition to online sales and vice versa, similar to the approach adopted by Amazon. In the context of catering establishments, multichannel involves integrating both online and offline sales.

3. Multichannel in catering establishments is also a combination of online and offline sales. Most of offline establishments that follow new trends, use their resources in order to increase sales by offering their clients not only to visit the restaurant, but to make an order and to have the food delivered home or to pick it up by themselves.

4. Digitalization and automation of processes: this trend is developing all over the world as more and more restaurants are integrating the technologies to optimize the speed of the services and save on labor costs. According to the National Restaurant Association, about 41% of fast food restaurants in the US use tablets, desktop ordering systems, self-service kiosks and automated restaurant applications [37].

3.2. Practical challenges in implementing digitalization for the restaurant business

In general, the processes of digitalization of the restaurant business are not complicated to implement, useful and effective. However, in practice they also have a number of specific problems.

The main practical problems of implementation of e-Menu and providing other digital information via QR code are, in particular, the following:

1) targeting mainly the young and middle-aged population (as a rule, the elderly consumer is not a part of the target audience for the QR code implementation);

2) the consumer should have a smartphone (with the optimally charged battery);

3) the presence of a WI-FI network is mandatory in the restaurant and/or the mobile Internet connected to the consumer's smartphone;

4) reducing the time of consumer communicating with the restaurant's staff, in particular, the waiter, what can affect negatively at the customer's feeling of a high-level service.

Among the practical problems of introducing e-Menu and providing consumers with other digital information within the restaurant using various electronic devices (tablets with e-menu, digital information display stands, etc.), there are, the following:

1) reduced level of personal communication between the visitor and the waiter (when ordering food, waiters become to a greater extent peddlers of food, not the advisors as it used to be);

2) creation of "office environment" that make visitors to feel themselves as in the office due to the need to work with an electronic device;

3) insufficient consideration of the interests of elderly consumers, as an electronic device can only make it more difficult for them to choose a meal;

4) the need to invest additional financial resources for the purchase of electronic devices and their integration into the institution's activities;

5) the need to allocate financial resources for repairment of a damaged electronic device (its cost is higher than pinting a new copy of a damaged paper menu);

6) the need to constantly monitor the proper functioning of electronic devices and maintan the optimal level of charge;

7) the possibility of theft of electronic devices from the restaurant;

8) loss of the atmosphere of “classic” hospitality as a result of dicreased level of communication between the visitor and the staff.

Another problem of introducing services of remote fulfillment of consumer orders with its own address delivery service of ready-made food is the cost of creating own delivery service. The choice should be done between restaurant’s own delivery service or the usage of third-party delivery services” companies.

A separate problem is the creating of a high-quality and informative website of a restaurant as is requires a significant cost. In most cases, despite the importance of having a website as one of the main potential channels of communication with the consumer, the cost of creating such a website for a restaurant does not justify itself. Today, many restaurants in Ukraine do not have their own website. Among those with a website, most are either chain restaurants (with a single site for the entire chain) or establishments with a single-page website. As of today, the approach of the restaurant’s presence on social network platforms (such as Facebook, Instagram, etc.) with a high-quality and informative page, is more popular and widely used.

The main problem of the implementation of special CRM programs for the restaurant (automation of the institution) is its considerable cost. However, unlike creating the website, such programs are not about potential, but about real effect from the first time they are used. Within the limits of the relevant software, in addition to the effective and fast transfer of digital information about orders between waiters and the kitchen, the restaurant can keep records of staff working hours, manage tables and banquet halls, manage the queue, manage reservations, manage the kitchen, use meal planners, keep warehouse records, manage delivery, conduct effective analytics and reporting, etc. [74].

In today's digital age, restaurants that have embraced digitalization can effectively recognize their regular patrons along with their dining preferences and visitation patterns. While this transformation enhances restaurant efficiency, there are clients who express dissatisfaction, preferring personal interaction with servers over digital devices [75]. This dynamic presents challenges for both restaurateurs and customers alike. Individuals accustomed to discussing their culinary preferences with wait staff now face a significant shift towards digital tools, complicating the introduction of digital transformation in the restaurant sector. Consequently, some patrons prefer using digital tools while still seeking human assistance. For restaurant owners, adapting to digital transformation can be demanding, necessitating rapid acquisition of new skills to align with the evolving digital landscape. This shift towards a digital culture within the restaurant industry poses ongoing concerns [16]. It is crucial for restaurateurs to acknowledge and address the challenges linked to digitalization (Table A.2). Understanding these obstacles will serve as valuable insight for achieving a successful digital transformation, unlocking the anticipated benefits.

Over the past few years, several industries have undergone significant transformations due to digital advancements. Examples include media (news portals, streaming services), retail (online shopping, digital groceries), tourism (online travel agencies, sharing platforms), and banking (online banking, smart payments). Similar shifts can be observed in the hospitality sector, which is part of the broader tourism industry, encompassing the restaurant sector. [2]. In recent years, this sector has witnessed the emergence of digital innovations, heightened competition, and, most notably, it has confronted the pivotal impact of the COVID-19 pandemic. Lockdowns and other preventive measures have led to significant sales losses for restaurants globally [38].

Nevertheless, the future landscape for restaurants is poised to diverge significantly from the pre-pandemic era. A primary driver of this transformation is the extensive push towards digitalization. Restaurants have not only invested in digital tools like Point-of-Sale (PoS) systems, online ordering platforms, and e-

commerce setups but have also revamped their processes to facilitate streamlined pick-up and delivery. With the widespread adoption of video conferencing, e-commerce, and various digital utilities during the pandemic, customers are more inclined than ever to embrace digital solutions when dining out. As a result, competition has intensified, giving rise to a range of innovative offerings such as remote ordering and personalized experiences aimed at elevating customer satisfaction. The potential for this shift was recognized even before the pandemic, evident in the increasing investments in start-ups within the global restaurant industry [2].

Understanding the functioning of restaurants involves considering two fundamental concepts. On one hand, restaurants operate as businesses focused on the preparation and serving of physical meals. Thus, the supply chain concept is crucial, establishing a framework to optimize processes associated with the movement of tangible goods. These processes aim for seamless, efficient, and reliable operations across multiple involved parties. Supply chains connect raw material suppliers upstream to manufacturers and, eventually, downstream to distributors and consumers. This involves various logistics service providers to facilitate transportation, storage, and handling of physical goods.

On the other hand, restaurants function as service-based enterprises, diverging significantly from linear physical supply chains. They encompass a substantial intangible aspect and are challenging to store, relying heavily on close interactions between service providers and consumers. This characteristic is particularly evident in the hospitality sector and specifically in restaurants, where meals are typically prepared after direct interactions within the ordering process.

Before 2022, several reports and studies indicated a significant surge in restaurant digitalization during the pandemic:

- Online ordering and delivery: the National Restaurant Association reported that during the COVID-19 pandemic, 68% of consumers utilized delivery services from restaurants, and 53% used curbside pickup. These figures reflect a substantial increase in digital interaction between customers and restaurants [33].

- Investment in technology: according to a survey by Toast, a restaurant management platform, 73% of restaurant owners planned to invest more in restaurant technology in 2021 compared to 2020 [70]. Technologies like contactless payment systems, digital menus, and online ordering became more common as restaurants adapted to changing consumer preferences and safety concerns.
- Digital payment systems: the adoption of digital payment methods in restaurants also saw a significant increase. Contactless payments, mobile wallets, and QR code-based transactions gained popularity due to their convenience and reduced physical contact.
- Shift towards E-commerce Platforms: many restaurants and eateries established or enhanced their online presence through e-commerce platforms. This allowed for online reservations, ordering, and payment processing, providing customers with a seamless digital experience.
- Integration of AI and personalization: some restaurants began integrating AI-driven technologies to offer personalized experiences, including menu recommendations based on previous orders or customer preferences.

Additionally to the general barriers, the next table highlights the specific challenges that restaurants in Ukraine might face while implementing digitalization during a period of martial law, considering the unique circumstances and constraints associated with the state of war (Table 3.1).

Despite the prolonged war, 47,200 new companies started operations between March 2022 and August 2023, and fewer than 14,000 closed, according to Opendatabot, a company registration monitoring service in the country. About 346,000 new individual entrepreneurs registered during the same period, while 291,000 stopped working. According to a survey of Ukraine”s European Business Association, more than half of Ukrainian companies expect a positive development of their business in 2024, with most managers planning salary raises. Oksana Myronko, head of communications at the association, said, “After 1.5 years of the war, the business has adapted, found opportunities not only to continue their work but also to develop” [45].

Table 3.1

Challenges in Implementing Digitalization for the Restaurant Business in Ukraine during Martial Law

Challenges in Implementing Digitalization for the Restaurant Business in Ukraine during Martial Law	**Brief description**
Disrupted Operations and Supply Chain	Martial law can cause disruptions in transportation, supply chains, and logistics, affecting the availability of necessary hardware, software, ingredients, and supplies required for digitalization.
Security Concerns and Cyber Threats	With the state of war, the risk of cyber threats, hacking, or attacks on digital systems might increase. Protecting sensitive customer data and ensuring secure transactions becomes even more critical.
Uncertainty and Instability	Political instability and uncertainty during martial law could impact investor confidence, leading to reluctance in making long-term investments in digital technologies for restaurants.
Regulatory Changes and Compliance	The imposition of new regulations or changes in existing laws during martial law could require swift adaptations and compliance measures, adding complexity to digital implementation.
Communication and Infrastructure Challenges	Restricted movements, communication disruptions, or infrastructure challenges due to martial law may hinder the implementation of digital solutions, especially in areas with poor connectivity.
Economic Constraints and Financial Strain	Economic downturns often accompany martial law, leading to reduced consumer spending and financial constraints for restaurants. Investing in digitalization might be deprioritized due to financial concerns.
Staff Safety and Retention	Ensuring staff safety and retention during a period of political unrest is essential. However, maintaining a workforce willing to adapt to digital changes might be challenging amidst the uncertainty of martial law.
Public Perception and Customer Behavior	Customer hesitancy or reluctance to engage in digital transactions due to heightened tensions or fear during martial law could impact the adoption rate of digital services offered by restaurants.
Government Policies and Support	The government’s focus on managing the state of emergency might limit resources or attention given to supporting businesses, including initiatives or incentives for digital transformation.
Adaptability and Crisis Management	The ability of restaurant owners and management to adapt swiftly to the changing circumstances, implement crisis management strategies, and pivot towards digitalization amidst challenges is critical.

Source: complied by the author

3.3. Enhancing digitalization in restaurant management system efficiency through PoS system

Current economic trends demand innovative shifts in management methodologies and operational paradigms within the restaurant sector. The modern "digitalized" consumer has fundamentally new needs - satisfaction of their own wishes through the latest trends in digital technologies [13]. Notably, the restaurant industry's focus on customer orientation has led companies to offer more than just food services. Restaurants are exerting significant efforts to adopt new digital technologies, aiming to enhance efficiency and elevate customer service. In this context, digitalization influences various management activities and operational processes even before customers experience the dishes [15]. The utilization of restaurant service technologies to enhance the speed or convenience of the dining experience leads to increased customer satisfaction and patronage [41]. Restaurant adaptability to technology became more critical in 2020 to date than before [76].

There is a need to integrate various visual and emotional elements into the dining experience, compelling the development of supplementary services. Successfully managing client emotions and impressions has become imperative in this evolving landscape. In these circumstances, gaining competitive advantage requires the effectiveness of innovations in product range strategies, marketing, information technologies, resource allocation, and overall business management techniques. "The globalization of crisis phenomena in the national and world economy, in particular complicated by the COVID19 pandemic, fierce competition in the market necessitate innovative orientation of further development of restaurant business, in particular, in the context of digitalization of the whole spectrum of business processes" [60].

Over time, technology has significantly transformed the restaurant sector, particularly focusing on Point-of-Sale (PoS) systems. The introduction of digital tablets and user-friendly touch screen technology has opened avenues for a complete overhaul of menu presentation. "Every order is associated with an individual seat at

the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time. The algorithm suggests dishes to the patrons based on previous orders. It makes it easier for the customer to build his/her order and also view the most popular dishes" [22].

Thus, the main aim is to increase the efficiency of the food ordering and reduce human errors and provide high quality services to the customers of the restaurants. The PoS system saves time and minimizes errors when compared to traditional methods. Its efficiency not only appeals to customers but also enhances the restaurant's order processing and billing accuracy.

The modern Point-of-Sale systems embrace a diverse functionality, enhancing numerous aspects of restaurant's management system and streamlining operations, for instance:

- Order management to process incoming orders.
- Sales tracking to monitor sales performance in real-time and to check daily, weekly, or monthly revenue.
- Inventory management to keep track of stock levels, manage inventory, and receive alerts for low-stock items to ensure seamless operations.
- Menu customization to update and modify menus easily, add new items, adjust prices, and highlight specials or promotions.
- Table management to organize and assign tables, track their status (occupied, reserved, available), and optimize seating arrangements.
- Payment processing to accept various payment methods securely, including cash, cards, and digital wallets, with integrated payment processing.
- Reporting and analytics to generate detailed reports and analytics on sales, inventory, and customer data to make informed business decisions.
- Customer relationship management (CRM) to store customer information, track preferences, and manage loyalty programs for enhanced customer service.

- Integration that allows seamlessly be connected with other systems or platforms, such as accounting software, online ordering, or delivery services, for enhanced functionality.
- User-friendly interface for the staff to navigate efficiently, minimizing training time.

One such PoS systems is “Poster”, a Ukrainian company that is working since 2013, assisting businesses all over the world automate their day-to-day tasks. The company”s goal is to become the #1 restaurant management software in the world. This cloud-based system gives an online access to inventory, finances and analytics from anywhere in the world.

As far as the restaurant “Gastro Ukryttia” is already working with “Poster” PoS, it is important to understand whether there is a need to go further with this technology or to switch to any others in order to enhance the digitalization of the management system, therefore, it is important to compare Point-of-Sale (PoS) systems (Table 3.2).

Table 3.2

Cost comparison of PoS

	Poster	**Syrve**	**Skyservice**
Initial Setup Costs, UAH	2000	2600	2500
Monthly Fees, UAH	1944	1566	1260
Instalation fee, UAH	31300	24990	23590
*Surcharge, UAH	13900		

Source: complied by the author

Also, it is important to evaluate the Total Benefits before proceed with the purchase and implementation. Making a decision on which Point-of-Sale (PoS) system to choose is challenging due to the complexity and multitude of criteria influencing total benefits. Factors such as increased operational efficiency, improved customer experience, and potential revenue growth contribute to total benefits. These criteria are often qualitative and may be challenging to quantify accurately.

Additionally, the impact of features, scalability, and system integrations on overall performance is not always straightforward to measure. The dynamic nature of business environments adds further complexity, as the benefits derived from a PoS system can evolve over time. In essence, the holistic assessment of total benefits requires a nuanced understanding of both quantitative and qualitative aspects, making the decision-making process intricate and demanding careful consideration of various factors.

Thus, it is reasonable to take into consideration the potential time savings from streamlined operations, reduced order processing times, improved efficiency (basing on implementation of the option for the visitors to choose and pay for the dish via smartphone on their own) as well as potential cost reductions, such as minimized errors in order processing (considering the hourly wages of staff involved in order processing):

- Average time for the visitor to make an order: 4 min
- Average number of visitors per day: 39
- Time saved: (39*4)*7 = 18 hrs 12min / week = 1092 min / week
- Average salary of the waiter = 16000 UAH
- Average number of waiter’s working hours: 120hrs
- Thus the payment of 1 hour of waiter’s work: 134 UAH = 2.24 UAH per minute
- The average cost of operational mistakes done by waiters: 279 UAH / week
- The saved amount: 1092 min x 2.24 UAH = 2438.80 UAH / week
- Total Benefits: 2717.80 UAH

Considering the data of initial setup costs, monthly fees, and installation fees, it is important to weigh the relative importance of each factor based on the specific needs and budget the business. The key consideration of “Gastro Ukryttia” is minimizing initial setup costs and due to the fact, the restaurant already had the initial purchase and installation of the equipment, there is a surcharge offered incase

of upgrading the package. Therefore, Poster is the most cost-effective option applicable for this restaurant specifically.

Thus, it is recommended for the "Gastro Ukryttia" to proceed working with "Poster" PoS. Moreover, this PoS is considered to be one of the best on Ukrainanian market due to its numerous advantages (Table 3.3):

Table 3.3

Advantages of "Poster" PoS

Advantages of "Poster"	**Brief Description**
Adaptability to Local Needs	"Poster" PoS systems can be customized to accommodate the specific requirements of Ukrainian restaurants, such as language settings, currency, tax regulations, and menu items. This adaptability ensures seamless integration with the local business environment.
Menu Flexibility	Ukrainian restaurants often have diverse and varied menus, including traditional dishes and seasonal specialties. "Poster" PoS allows for easy menu updates, modifications, and customization, facilitating swift changes in offerings or pricing.
Inventory Management	"Poster" PoS systems offer inventory tracking functionalities that aid in managing stock levels, ingredient procurement, and minimizing waste, thereby optimizing operational efficiency.
Financial Reporting and Compliance	The restaurants need to adhere to local tax regulations and financial reporting standards. This PoS generates detailed reports, simplifying financial record-keeping and ensuring compliance with Ukrainian fiscal requirements.
Table Management	The restaurants commonly experience fluctuating customer traffic. "Poster" PoS provides table management features that help in efficiently organizing seating arrangements, tracking table availability, and enhancing the overall dining experience.
Customer Relationship Management (CRM)	For restaurants aiming to enhance customer service and loyalty, "Poster" PoS offers CRM capabilities. It allows restaurants to collect customer data, manage loyalty programs, and analyze customer preferences for personalized service
Offline Functionality	This feature ensures uninterrupted operations, allowing the restaurant to continue serving customers even during network downtimes. It is especially important due to the marital law and possible blackouts.
Technical Support and Local Assistance	"Poster" PoS systems typically offer technical support and assistance in the local language. This aspect is beneficial for Ukrainian restaurants, providing access to help and troubleshooting in their native language.

Source: complied by the author

Taking into consideration this information, “Poster” PoS is known for its adaptability, catering to the specific needs of different types of businesses, including those in the hospitality sector like restaurants and cafes. It aims to simplify management processes, optimize workflows, and improve the overall customer experience for businesses using its services. All the advantages mentioned, these features collectively contribute to making “Poster” PoS a preferred choice for restaurant digitalization (Figure 3.2).

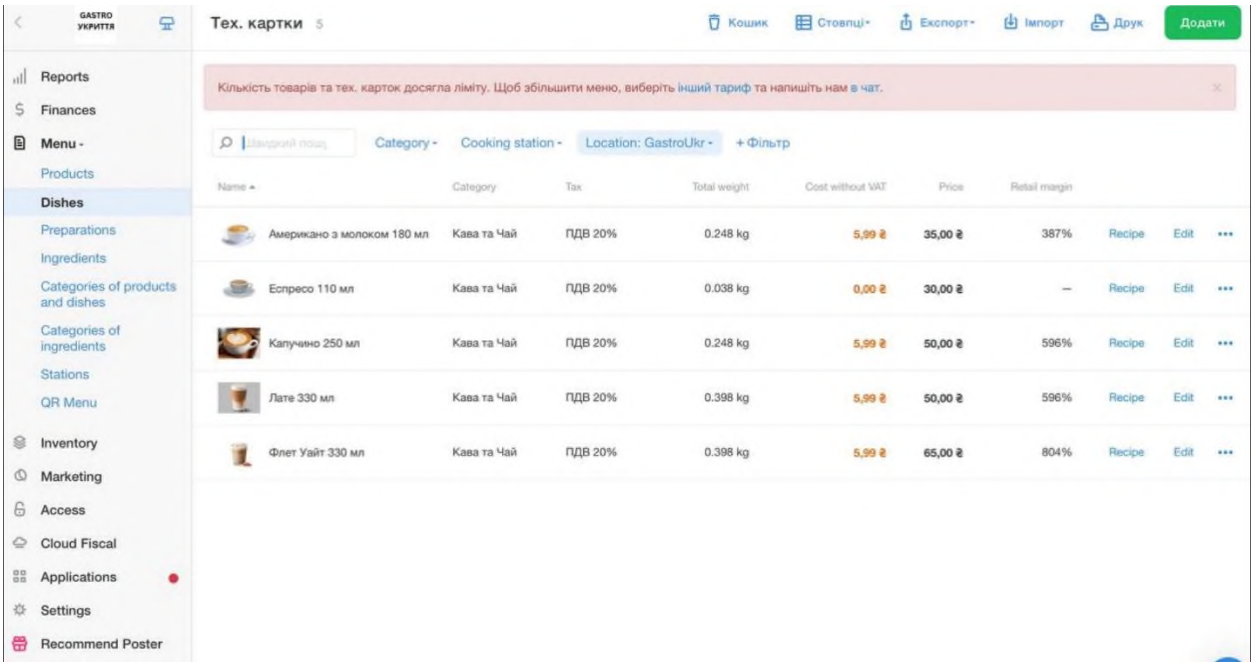

Fig. 3.2 PoS functionality interface example

Source: Screenshot from PoS of “Gastro Ukryttia” restaurant

The restaurant “Gastro Ukryttia” is already using “Poster” PoS, but a “Business” Package, that includes not all the features necessary for the restaurant further digitalization (e.g. no tables’ e-booking). In order to take a decision whether to upgrade the package to the “PRO” one in order to increase the level of digitalization within the restaurant, it is important to determine the effectiveness of this Point-of-Sale (PoS) along with the costs (Table 3.4).

Table 3.4

Data and values related to PoS “Poster” required for further calculation

PoS System Costs	
– Subscription or license fees	1944 UAH
– Setup or installation fees	0 UAH
– Additional support/maintenance fees	0 UAH
Hardware Costs	
– Cost of necessary devices	13900 UAH
– Networking expenses	4 300 UAH
Training and Implementation	
– Staff training costs	1000 UAH
– Implementation labor	2000 UAH
Operational Efficiency and Savings	
– Estimated time savings	18 hrs 12 min / week
– Savings due to efficiency	2717.80 UAH/week

Source: complied by the author

Basing on these values the following calculations the Total Initial Costs can be calculated, it provides a comprehensive view of the upfront financial investment required for a particular project, investment, or implementation (Table 3.5).

Table 3.5

Total Initial Costs

Costs Type	Calculation	Results
PoS System Costs	1944 UAH/month x 12 months	23328 UAH
Hardware Costs	13900 UAH + 4300 UAH	18200 UAH
Training and Implementation	1000 UAH + 2000 UAH	3000 UAH
TOTAL	23328 UAH + 18200 UAH + 3000 UAH	44528 UAH

Source: complied by the author

Also, it is important to calculate the annual operational costs that helps to enable accurate budgeting (Table 3.6).

Table 3.6

Annual Operational Costs

Costs Type	Calculation	Results
PoS System	1944 UAH/month x 12 months	23328 UAH
Customer Support and SLAs	---	4500 UAH
TOTAL:	23328 UAH + 4500 UAH	27828 UAH

Source: complied by the author

The potential annual savings should be taken into consideration as well as it provides a clear assessment of cost-cutting opportunities, operational efficiency improvements, and overall financial impact (Table 3.7). This information is essential for informed decision-making, budget planning, and optimizing resources.

Table 3.7

Potential Annual Savings

Labor cost savings due to efficiency	2717.80 UAH/week x 52 weeks	141325.60 UAH

Source: complied by the author

The calculation of Return on Investment (ROI) is necessary as well to quantify the efficiency and profitability of an investment, providing a clear measure of the returns generated relative to the initial costs (Table 3.8).

Table 3.8

Return on Investment (ROI)

Formula	Calculation	Result
(Potential Annual Savings / Total Initial Costs) x 100	141325.60/44528 UAH	≈ 317.38%

Source: complied by the author

Thus, the Return on Investment (ROI) is approximately 317.38%. This indicates that for every 1 UAH invested, there is a return of about 3.17 UAH in potential annual savings. Also, it is necessary to calculate the ROI Timeframe (Table 3.9):

Table 3.9

ROI Timeframe

Formula	Calculation	Result
Total Initial Costs / Potential Annual Savings	44528 UAH / 141325.60 UAH	3.15 years or 3 years, 4 months and 6 days

Source: complied by the author

The ROI timeframe for the given scenario is approximately 3.15 years or 3 years, 4 months and 6 days. This indicates that it would take this particular timeframe to recover the initial investment through the potential annual savings. This metric illustrates the speed at which an investment generates returns.

To determine the efficiency of implementing “Poster” PoS “PRO” package in relation to the restaurant’s financial performance, the potential impact of the PoS system on the restaurant’s profitability should be analyzed and Net Profit margin calculated (Table 3.10):

- Net Profit: 19,656.66 UAH
- Net Sales: 806,868 UAH

Table 3.10

Net profit margin

Type	Formula	Calculation	Result
Current Net Profit Margin	= (Net Profit / Net Sales) x 100	= (19,656.66 UAH / 806,868 UAH) x 100	≈ 2.44%

Source: complied by the author

At this stage, we can see whether the recommendation, idea to upgrade PoS will bring the progress for the restaurant. The net profit margin of approximately 2.44% is considered good the specific goal to implement ugraded PoS.Thus, it is necessary to calculate Net Profit considering the impact of PoS system (Table 3.11).

Table 3.11

Net Profit considering PoS system's impact

Formula	Calculation	Result
Current Net Profit + Labor cost savings due to efficiency - Annual Operational Costs of PoS System	19,656.66 UAH + 141325.60 UAH - 27,828 UAH	133154.26 UAH

Source: complied by the author

Additionally, it is important to overview the Net Profit Margin considering upgraded PoS System inmplementation (Table 3.11).

Table 3.11.

Net Profit Margin with PoS system's impact

Formula	Calculation	Result
(Net Profit with PoS System / Net Sales) x 100	(133154.26 UAH/ 806,868 UAH) x 100	≈ 16.50%

Source: complied by the author

A net profit margin of approximately 16.50% is generally considered quite favorable, especially for a restaurant, and it suggests a strong financial performance. However, it is important to consider the context, including the fact that the restaurant is comparatively new and lacks financial statements for at least two years. For a new restaurant, achieving a net profit margin of 16.50% is a positive sign, as many businesses in the hospitality industry often experience initial challenges and may take time to establish a profitable operation. The percentage indicates that the

restaurant is effectively managing its costs and generating a substantial profit relative to its revenue.

To conclude, the introduction of the PoS system with the calculated operational efficiencies significantly improves the restaurant's net profitability. Basing on the results, the implementation of upgraded PoS system appears to have a positive impact on the restaurant's financial performance, making it an efficient investment. However, it is essential to consider other factors such as customer satisfaction, ease of operations, and other non-financial aspects before making a final decision.

In an era marked by rapid technological advancements and dynamic shifts in consumer preferences, the restaurant industry faces escalating demands for innovation and efficiency. The convergence of economic trends, customer-centric approaches, and the unrelenting impact of global crises like the COVID-19 pandemic and geopolitical instabilities have accelerated the need for digitalization within restaurant management systems.

The evolution of PoS systems, exemplified by innovations like the "Poster" PoS, has revolutionized the restaurant landscape. These systems offer an array of functionalities, ranging from streamlined order management to comprehensive inventory tracking, catering to the diverse needs of modern restaurants. Particularly in the case of "Gastro Ukryttia," the utilization of the "Poster" PoS system has demonstrated notable advantages, including adaptability to local requirements, ease of use, menu flexibility, and comprehensive support for Ukrainian fiscal regulations. Moreover, the system's offline functionality, technical support in the local language, and CRM capabilities have further cemented its position as a preferred choice for restaurant digitalization.

CONCLUSIONS AND RECOMMENDATIONS

The aims of this master thesis were to explore the topic of digitalization and, assess its impact on enterprise management systems particularly in the context of COVID-19 pandemic and military aggression. An internship at LLC National Trading Group, restaurant “Gastro Ukryttia” provided practical insights, offering a real-world perspective on strategies and competitiveness. The overall findings suggest that digitalization is one of the main catalyst for continued growth of the companies nowadays.

The theoretical foundation laid in the first section of this work clarified the concepts of digitization, digitalization, digital transformation, and developed better understanding of their relevance in the context of military aggression and the COVID-19 pandemic. Digitalization, the process of or improving processes by leveraging digital technologies and digitized data, while digitization is interrelated with a digital representation of physical objects or attributes. Both serve as a foundation to the digital transformation, a comprehensive organizational shift driven by digital technologies.

Following the main tasks of the study, the focus was set on learning how digitalization profoundly affects the enterprise management system. During my internship in the restaurant “Gastro Ukryttia” I acknowledged that its transformative impact on various aspects of the enterprise management system, fundamentally interfers the way how businesses operate. Thus, digitalization in terms of implementing PoS (Point-of-Sale system) enhances the accessibility and availability of information within the management system. Real-time data updates and instant access to critical information empower decision-makers to respond promptly to changing circumstances, contributing to increased flexibility in the management process. The integration of such digital technologies in enterprise management system also extends the range of options, n and provides seamless communication

channels among different departments, teams, and even external stakeholders, fostering a more interconnected and efficient organizational environment.

Automation, another aspect of digitalization, plays a crucial role in optimizing routine tasks and processes within the enterprise management system. Repetitive and time-consuming tasks can be automated, freeing up valuable resources and allowing personnel to focus on more strategic and value-added activities. In general, learning how digitalization affects the restaurant's management system involves recognizing its influence on data handling, decision-making processes, communication, collaboration, and the overall efficiency of operations. This knowledge is essential for the enterprise to harness the full potential of digital technologies to enhance their management practices and stay competitive in the modern business landscape.

The COVID-19 pandemic and ongoing military aggression crises have significantly impacted digitalization processes within business entities, restaurants are not the exception. As lockdowns and social distancing measures became the norm, businesses were forced to digitalize in order to adapt to remote work and maintain operational stability. The pandemic served as a catalyst for embracing digital technologies, pushing companies to invest in tools like video conferencing, cloud computing, and collaborative platforms to ensure seamless communication and workflow. Focusing on the restaurant businesses, the implementation of PoS systems became the key to digitalize and stay competitive in the market. Therefore, I defined it as the top priority in terms of digitalization of "Gastro Ukryttia".

Simultaneously, the military aggression crises added another layer of complexity, prompting businesses to enhance their cybersecurity measures to safeguard sensitive information against potential threats. The geopolitical uncertainties fueled a sense of urgency in fortifying digital infrastructure, as the risk of cyberattacks escalated during times of geopolitical tension. This dual challenge forced restaurants to reassess and reinforce their digital strategies, emphasizing resilience and adaptability. Thus, while choosing the vector of digitalization of the restaurant, I considered all-in-one cloud-based systems as most preferable ones. The

adoption of advanced technologies such as artificial intelligence, data analytics, and automation optimized processes and enhance efficiency amidst the volatile environment. Companies recognized the need to be agile in the face of unforeseen disruptions, making digitalization a priority in terms of their business strategies. Thus, the intersection of the COVID-19 pandemic and military aggression crises intensified the pace of digitalization of the enterprise management system.

During my internship at the Ukrainian company LLC National Trading Group, "Gastro Ukryttia" I gained valuable insights into the digitalization of modern business processes. The company demonstrated a proactive approach to embracing digital technologies to enhance its operational efficiency and stay competitive in the market. One of the key strategies employed for the restaurant "Gastro Ukryttia" was the integration of advanced Point-of-Sale (PoS) for various business functions, ranging from inventory management to customer relationship management. The restaurant keeps the data on cloud computing services, enabling seamless collaboration among employees, especially during the challenging times of the COVID-19 pandemic. Having the processes automatic, the use of data analytics played a crucial role in decision-making processes, allowing the company to analyze market trends, customer preferences, etc. The competitiveness of the restaurant was further strengthened through the implementation of user-friendly online menus available from any smartphone via QR codes. The online presence of "Gastro Ukryttia" was strategically enhanced via social media and search engine optimization to reach a broader audience and drive sales.

The studying and analysis of the management system in "Gastro Ukryttia" shows that the current level of digitalization is an optimal one to handle the processes, however there is a space to grow. The more operations are digitalized, the more restaurant is resilient to such challenges as pandemics, including COVID-19 as well as military aggression. Firstly, remote management enables oversight of operations from a distance, allowing the restaurant to adapt swiftly during lockdowns or other disruptions. Secondly, online ordering provide an alternative revenue stream when physical dining is restricted. Thirdly, data analytics assists in analyzing customer

preferences, contributing to more informed decision-making. Also, the restaurant streamlines the supply chain through Point-of-Sale (PoS) ensures efficient procurement and minimizes disruptions caused by external factors. Additionally, customer relationship management (CRM) as a part of PoS enables personalized marketing features and loyalty programs. Overall, the digitalization of the enterprise management system at “Gastro Ukryttia” improves business development and fortifies the restaurant's resilience in the face of unprecedented challenges.

Current economic trends necessitate innovative shifts in management methodologies, the adoption of new digital technologies is essential for enhancing efficiency and customer service, influencing various management activities even before customers experience the dishes. The digitalization of management systems within the restaurant sector, exemplified by the case of “Gastro Ukryttia,” is crucial for business development and resilience in the face of contemporary challenges.

Technologies within restaurant industry, especially PoS systems, have significantly transformed the restaurant sector and “Gastro Ukryttia”. The usage system has already demonstrated advantages in terms of adaptability, ease of use, menu flexibility, and comprehensive support for local regulations. Nevertheless, I do recommend an upgrade to the “PRO” package, as it provides with the additional features such as option for the visitor to make an order from the smartphone directly, as well as a cost-benefit analysis is essential. The initial and operational costs, potential savings in operational the ROI timeframe is around 3 years, 4 months and 6 days, emphasizing the optimal recovery of the initial costs.

In conclusion, the focus on the digitalization of the management system, particularly through the utilization of the “Poster” PoS system, I believe, presents a strategic approach for enhancing business development and resilience for “Gastro Ukryttia”. The comprehensive analysis showcases the potential benefits and efficiency gains, making the implementation of advanced digital technologies a prudent investment for the restaurant's future growth and success.

The master thesis consists of an introduction, three chapters, conclusion and list of references and annexes. The thesis has been outlined the chapters in the following

order: defining the concept of digitalization in enterprise management system in the context of the COVID-19 pandemic and military aggression, the study of restaurant “Gastro Ukryttia”, LLC National Trading Group and its competitiveness on the market, and consideration of ways of business development and enhancement in the framework of digitalization of enterprice management system (EMS). The first section provides the necessary theoretical framework for understanding digitalization processes and analyzes business development, investigates how digital transformation trends have affected the workflow of the business and proves the extensiveness of the digitalization. The second section provides a recollection of the internship experience at LLC National Trading Group and offers the analysis of one of its establishments, the restaurant “Gastro Ukryttia’s” economic state and competitiveness on the market. The third section gathers all the previous research data in order to establish ways of business development and enhancement in the framework of digitalization in enterprise management system in the context of the COVID -19 pandemic and military aggression.

Drawing from the research findings, it is evident that the Ukrainian enterprise, specifically LLC National Trading Group, exemplified by the restaurant “Gastro Ukryttia,” has displayed dynamic adaptability in the face of challenges posed by the pandemic and military aggression. The entity has proactively embraced available digital tools, consistently elevating its level of digitalization. This proactive stance involves the continuous exploration and implementation of new programs and digitalization processes, all aimed at enhancing competitiveness and optimizing the effectiveness of the digital systems within the management framework. The organization's commitment to leveraging digital means reflects a strategic approach to not only navigate challenges but also to capitalize on the opportunities that digitalization presents for operational efficiency and overall business effectiveness.

REFERENCES

1. Almeida F., Duarte Santos J., J. Augusto Monteiro J., (2020) “The Challenges and Opportunities in the Digitalization of Companies in a Post-COVID-19 World” in IEEE Engineering Management Review, vol. 48, no. 3, pp. 97-103, 1 thirdquarter, doi: 10.1109/EMR.2020.3013206.

2. Alt, Rainer. (2021). Digital Transformation in the Restaurant Industry: Current Developments and Implications. 1. 69-74. 10.52255/smarttourism.2021.1.1.9. Retrieved from URL: https://www.researchgate.net/publication/351599584_Digital_Transformation_in_the_Restaurant_Industry_Current_Developments_and_Implications/citation/download

3. Alyushina, N. (2023). Digitalization and War: How Civil Service Can Avoid “Digital” Collapse. Retrieved by URL: https://nads.gov.ua/news/didzhytalizatsiia-upravlinskykh-protsesiv-v-chasy-viiny-v-tomu-chysli-v-systemi-publichnoi-sluzhby-pliusy-i-minusy

4. Anjos, C. J. F., Marques, S., & Dias, A. (2022). The impact of Instagram influencer marketing in the restaurant industry. International Journal of Service Science, Management, Engineering, and Technology (IJSSMET), 13(1), 1-20.

5. Benkler, Y. (2006). The wealth of networks: How social production transforms markets and freedom. New Haven, CT: Yale University Press

6. Berezovenko, O. (2023, January 6). Hastrorezyume 2022 roku: rayony, formaty ta restoranni vidkryttya Kyyeva. PostEat. Retrieved from URL: https://posteat.ua/obzory/gastrorezyume-2022-roku-rajoni-formati-ta-restoranni-vidkrittya-kiyeva/

7. Bloomberg J. (2018, April 29). Digitization, digitalization, and digital transformation: Confuse them at your peril. Retrieved from URL: https://www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalization-and-digital-transformation-confuse-them-at-your-peril/?sh=48e24f612f2c

8. Boyko, M. H. (2010) Orhanizatsiya hotel′noho hospodarstva. – K.: KNTEU, 2010. – 448 p.

9. Brennen, S., Kreiss, D. (2014, September 8). Digitalization and digitization. Retrieved from URL: https://culturedigitally.org/2014/09/digitalization-and-digitization/

10. Brewer, P., & Sebby, A. G. (2021). The effect of online restaurant menus on consumers' purchase intentions during the COVID-19 pandemic. International Journal of Hospitality Management, 94(April), 102777.

11. Ceken, S. (2023). How restaurants used digital marketing to keep their customers during the Covid-19 (Dissertation). Retrieved from https://urn.kb.se/resolve?urn=urn:nbn:se:kau:diva-94360

12. Copestake, A., Estefania-Flores, J., & Furceri, D. (2024). Digitalization and resilience. Research Policy, 53(3), 104948.

13. Davydova O. Y., Kolesnikova V. D. (2022). Digitalization as a Driver of Growth of Competitiveness of the Hotel and Restaurant Business Enterprise. Retrieved from URL: https://www.business-inform.net/export_pdf/business-inform-2022-12_0-pages-113_120.pdf

14. Didzhytalizatsiya: yak ne vidstaty na shlyakhu maybutn′oho (2021, May 20). Retrieved from URL: https://kmbs.ua/ua/article/digital-future

15. Domingo, M., García, M., Isidoro, José, Isidoro, R. (2022). Determinants of Digital Transformation in the Restaurant Industry. Amfiteatru Economic. 24. 430-446. 10.24818/EA/2022/60/430.

16. Flink, M.G. and Beling, C., (2017). Food for thought: A study on the digitalization of restaurant interactions. Retrieved from URL: https://www.forbes.com/sites/forbestechcouncil/2021/08/12/theevolution-of-digital-transformation/?sh=58c018c16fb8

17. Gartner Glossary. Information Technology Glossary. Retrieved from URL: https://www.gartner.com/en/information-technology/glossary/it-information-technology

18. Global Restaurant Digitalization Market By Component (Software and Hardware), By Restaurant Type (Cafes, Fast Food, and Dining), By Application, By Region and Com panies – Industry Segment Outlook, Market Assessment, Competition Scenario, Trends, and Forecast 2023-2032. (2023, October). Retrieved from URL: https://market.us/report/restaurant-digitalization-market/

19. Gobble, M. (2018). Digitalization, Digitization, and Innovation. Volume 61, 20, Issue 4. Retrieved ftom URL: https://www.tandfonline.com/doi/full/10.1080/08956308.2018.1471280.

20. Gomes, C., Malheiros, C., Campos, F., & Lima Santos, L. (2022). COVID-19's Impact on the Restaurant Industry. *Sustainability,* 14(18), 11544.

21. González Morales, M., Cavero Rubio, J.A. (2023). Impact of Digitalization of Sales on the Profitability of the Restaurant Industry during COVID-19. *Economies*, 11, 283. https://doi.org/10.3390/economies11110283

22. Goyal, N., Agrawal, P., & Hardeniya, R. (2020). A Comperitive Study of Point-of-Sale and Point of Purchase of Restaurant System. International Journal of Scientific Research & Engineering Trends Volume 6, Issue 3, May-June-2020.

23. Groys, B. (2008). From Image to Image File—and Back: Art in the Age of Digitalization. Art Power, 2008, 83–91.

24. Gupta, M. (2020, March 24).What is Digitization, Digitalization, and Digital Transformation?. Retrieved from URL:https://www.arcweb.com/blog/what-digitization-digitalization-digital-transformation

25. Halata, A. (2023, June 13). Skhovatysya vid obstriliv u bari. TOP-5 zakladiv Kyyeva, yaki vvazhayut′sya skhovyshchamy. Retrieved from: https://telegraf.com.ua/ukr/kiev/2023-06-13/5795438-skhovatisya-vid-obstriliv-u-bari-top-5-zakladiv-kieva-yaki-vvazhayutsya-skhovishchami

26. How broadband, digitization and ICT regulation impact the global economy (2020). Retrieved from URL: https://www.itu.int/pub/D-PREF-EF.BDR-2020

27. How has the Ukrainian restaurant market changed in 2023? (2023, November 8). Retrieved from URL: https://visitukraine.today/blog/2869/how-has-the-ukrainian-restaurant-market-changed-in-2023

28. Huang, S. (2023). Webstaurant: A Guideline for Small Restaurant Owners to Create Accessible and Responsive Digital Menus (Doctoral dissertation, New York University Tandon School of Engineering).

29. Husyeva, O, Lehominova, S. (2018). Didzhytalizatsiya – yak instrument udoskonalennya biznes-protsesiv, yikh optymizatsiya. *Ekonomika. Menedzhment. Biznes. № 1 (23)*.

30. Ilie, G. (2023). Trade In Skill-Intensive Services-Through the Pandemic and Accelerating Digitalization. Global Economic Observer, 11(1), 73-83.

31. INNOSIGHT. Executive Briefing. (2012). Retrieved by URL: https://www.innosight.com/wp-content/uploads/2016/08/creative-destruction-whips-through-corporate-america_final2015.pdf

32. IT, innovation and digitization in the conditions of war: the case of IBOX BANK (2023). Retrived from URL: https://ua.news/ua/money/it-ynnovatsyy-y-dydzhytalyzatsyya-v-uslovyyah-vojny-kejs-ibox-bank

33. Jang, J., Lee, E., Jung, H. Analysis of Food Delivery Using Big Data: Comparative Study before and after COVID-19. Foods 2022, 11, 3029. https://doi.org/10.3390/foods11193029

34. Jangjarat, K., & Jewjinda, C. (2023). Impact of the digital economy and innovation on the businesses of small and medium enterprises. Corporate and Business Strategy Review, 4, 102-10.

35. Jmal, Y. (2023). The impact of digitalization on the efficiency of food safety management systems (Doctoral dissertation, Vilniaus universitetas).

36. Kanaan, K., Abuhjeeleh, M., Darabseh, F., Taha, O., & Aljawarneh, N. M. (2023). How digital marketing and innovative performance contribute to hotel restaurant revenue growth: The mediating role of knowledge sharing. Cogent Social Sciences, 9(1), 2209985.

37. Kelso, E. (2019, Jul 30). Self-Order Kiosks Are Finally Having A Moment In The Fast Food Space. Retrieved from URL: https://www.forbes.com/sites/aliciakelso/2019/07/30/self-order-kiosks-are-finally-having-a-moment-in-the-fast-food-space/?sh=2310bcac4275

38. Kim, J., & Lee, J.C. (2020). Effects of COVID-19 on preferences for private dining facilities in restaurants. Journal of Hospitality and Tourism Management, 45, 67–70. https://doi.org/10.1016/j.jhtm.2020.07.008

39. Kitapcic, S. M. S. O. O., & Merdin-Uygurd, E. (2023). 21. Navigating the new norm in restaurants: To continue (or not) with the qr-code menus. EXTENDED ACADEMIC PROGRAM, 69.

40. Klouvidaki, M. I., Antonopoulos, N., Styliaras, G. D., & Kanavos, A. (2023). Virtual Restaurants: Customer Experience Keeps Their Businesses Alive. Information, 14(7), 406.

41. Ko, C.-H. (2020). Exploring information technology's adoption in restaurants. Open Access Library Journal, 7, 1-17. https://doi.org/10.4236/oalib.1106470

42. Koroliuk T., Mazurenok O. (2021) Didzhytalizatsiya diyal′nosti pidpryyemstv:tendentsiyi, tsyfrovyy oblik, perspektyvy. Galician economik journal, No 3 (70), p.59-70

43. Kudryashova, V. (2023, May 17). Restoran «Gastro ukryttya» bilya «Livoberezhnoyi».https://www.the-village.com.ua/village/food/food-news/339137-restoran-gastro-ukrittya-bilya-livoberezhnoyi

44. Lessig, L. (2006). Code: version 2.0. New York, NY: Basic Books.

45. Makedon, I. (2023, December 2). Ukraine entrepreneurs bring new businesses in war-hit economy. Retrieved from URL: https://asia.nikkei.com/Politics/Ukraine-war/Ukraine-entrepreneurs-bring-new-businesses-in-war-hit-economy

46. Mandrujuchy u khmarakh (2013). Retrieved from URL: http://ito.vspu.net/ENK/2013_2014/Osn_projekt_tehnologi_magistr/Rob_stud/lukash/Preview/page-30.html.

47. Manoff, M. (2006). The Materiality of Digital Collections: Theoretical and Historical Perspectives. Portal: Libraries and the Academy, 6(3), 311.

48. McKinsey & Company. Retrieved from URL: https://www.mckinsey.com

49. Melnyk, S. (2022, May 16). *Restorannyy rynok u Kyyevi zmenshyvsya vdvichi*. Ukrayins′ka pravda. Ekonomichna Pravda. Retrieved from URL: https://www.epravda.com.ua/news/2022/05/16/687091/

50. Monastyrskyi, H. L. (2008). Teoriia orhanizatsii. Kyiv: Znannia, 319.

51. Nazarchuk, T. V., Kosiiuk, O. M. (2016). Menedzhment orhanizatsii. Kyiv: «Tsentr uchbovoi literatury», pp. 560.

52. Negronponte, N. (1995). Being Digital. New York: Alfred A. Knopf.

53. Niskhodovs′ka, O. (2020). Didzhytalizatsiya: osnova konkurentospromozhnosti pidpryyemstv. Zbirnyk naukovykh dopovidey: Podil′s′kyy derzhavnyy ahrarno-tekhnichnyy universytet. Kharkiv: Kharkivs′kyy natsional′nyy universytet mis′koho hospodarstva imeni O. M. Beketova, p.163-166.

54. Plikus, I. Y., Osadcha, O. O., Zhukova, T. A. (2019) Rozvytok profesiyi “bukhhalter” v umovakh tsyfrovoyi adzhendy: empirychni doslidzhennya shchodo maybutn′oho profesiyi. *Infrastruktura rynku.* Vypusk 29. P. 589–594.

55. Prasad, A. (2022, September 6). About 7,000 restaurants and cafes have closed in Ukraine since the beginning of the war - Association. Forbes Ukraine. Retrieved from URL: https://forbes.ua/news/v-ukraini-z-pochatku-viyni-zakrilosya-blizko-7000-restoraniv-ta-kafe-asotsiatsiya-06092022-8120

56. Riedl, R., Benlian, A., Hess, T. et al. (2017) On the Relationship Between Information Management and Digitalization. Bus Inf Syst Eng 59, 475–482. https://doi.org/10.1007/s12599-017-0498-9

57. Santos, S. C., Liguori, E. W., & Garvey, E. (2023). How digitalization reinvented entrepreneurial resilience during COVID-19. Technological Forecasting and Social Change, 189, 122398.

58. Schilirò, D. (2023). Digital platforms and digital transformation. Retrieved from URL: https://mpra.ub.uni-muenchen.de/118006/

59. Shevchenko O., Striletz" A. (2022).Tsyfrovizatsiya biznes-protsesiv pid chas viyny. Retrieved from URL: http://confmanagement.kpi.ua/proc/article/view/272085

60. Shtal, T., Staverska, T., Svitlichna, V., Kravtsova, S., Kraynyuk, L., Pokolodna, M. (2021). Digitalization as a Tool for Ensuring Innovative Development of Restaurant Business.Vol. 39 No. 5 (2021): Special Issue: Innovation in the Economy and Society of the Digital Age.

61. Shtal, T., Staverska, T., Svitlichna, Y., Kravtsova, Y., Kraynyuk, L., Pokolodna, M. (2021). Digitalization as a Tool for Ensuring Innovative Development of Restaurant Business. Vol. 39 No. 5. Special Issue: Innovation in the Economy and Society of the Digital Age

62. Spitsina A., Plukar L., Masllyhan O., Moroz T., Kasmin D., and Nazarenko I. (2022) Digitalization of the economy as a factor of sustainable state development against the background of Large-scale military aggression (ukrainian experience): *Finansovo-kredytna diyal'nist': problemy teoriyi ta praktyky, 6 (47)*, p. 304-315

63. Stoyan K. S., Byhkalo K. Y. (2013). Skladovi systemy upravlinnya pidpryyemstvom. *Ekonomika ta menedzhment – 2013: perspektyvy intehratsiyi ta innovatsiynoho rozvytku.* Retrieved from URL: http://www.confcontact.com/node/516

64. Sviatnenko V. (2020). Improvement of the enterprise management system. *Technology audit and production reserves* — № 3/4(53), pp.28–31

65. Syliveystr, V. (2023, June 28). TOP-13 trends in the restaurant business in 2023. Retrieved from URL: https://joinposter.com/ua/post/restoranni-trendy

66. Thrope, E., K. (2018). What is an Enterprise Management System?. Retrieved from URL: https://www.itpro.co.uk/business-operations/31331/what-is-an-enterprise-management-system

67. Troisi, O., Visvizi, A., & Grimaldi, M. (2023). Digitalizing business models in hospitality ecosystems: toward data-driven innovation. European Journal of Innovation Management, 26(7), 242-277.

68. Tymofeeva A., Nazarova A., (2020). Didzhytalizatsiya diyal′nosti pidpryyemstv v umovakh pandemiyi: vyklyky ta mozhlyvosti. Retrieved from URL: https://evnuir.vnu.edu.ua/bitstream/123456789/19046/1/456-458.pdf

69. Van Dijk, J. (2005). The Network Society: Social Aspects of New Media. London: Sage.

70. Van Duyne, A. (2023). 60 Restaurant Industry Statistics and Trends for 2024. Retrieved from URL: https://pos.toasttab.com/blog/on-the-line/restaurant-management-statistics

71. Varha V. (2018). Didzhytalizatsiya yak odyn z chynnykiv konkurentospromozhnosti pidpryyemstva. Rehional′na ekonomika. № 3. P. 194–201.

72. Vedmid N., Tkachuk T., Kosar O. (2023). Forsayt restorannoho biznesu. Scientia· Fructuosa (Visnyk Kyivs′koho natsional′noho torhovel′no-ekonomichnoho universytetu), 147(1), 74-87.

73. Verhulst, S. (2002). About Scarcities and Intermediaries: the Regulatory Paradigm Shift of Digital Content Reviewed. In L. A. Lievrouw & S. Livingstone (Eds.), The Handbook of New Media (pp. 432–447). London: Sage Publications.

74. Vo-Thanh, T., Zaman, M., Hasan, R., Akter, S. and Dang-Van, T. (2022), “The service digitalization in fine-dining restaurants: a cost-benefit perspective”, International Journal of Contemporary Hospitality Management, Vol. 34 No. 9, pp. 3502-3524.

75. Weerasinghe, L., Nirere, B. (2022). Challenges of digital transformation. A case study of the restaurant industry. Umea Iniversity. Retrieved from URL: https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1709073&dswid=2112

76. Xing, Z. (2023). The Impact of Service Technology Attributes on Customers' Behavioral Intentions in Casual Dining Restaurants.

77. Yildirim, H., & Yildirim, Y. Digital gastronomy and the tables of future. Van Yüzüncü Yıl Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 8(15), 1-14.

78. Yovsa, M. M. (2017). Rozrobka suchasnykh zakhodiv shchodo vdoskonalennia systemy menedzhmentu na vitchyznianykh konsaltynhovykh pidpryiemstvakh. Molodyi vchenyi, 1, 594–597. Retrieved from URL: http://nbuv.gov.ua/UJRN/molv_2017_1_144

79. Zhosan H. (2021). Development of business digitalization in the convention of the COVID-19 pandemic. *Ekonomika ta suspil''stvo*, *24/*2021. Retrieved from URL: https://chmnu.edu.ua/wp-content/uploads/45.-ZHosan-G.V..pdf

80. Zhuhan, V. (2023, May 19). "Glory to the Air Defense Forces!" How Kyiv lives under heavy shelling. Retrieved from URL: https://www.bbc.com/ukrainian/articles/cmlwp094899o

81. Zhuk, K. (2022, September 6). *V Ukrayini z pochatku viyny zakrylosya blyz'ko 7 tysyach restoraniv ta kafe*. Investory News. Retrieved from URL: https://investory.news/v-ukraini-z-pochatku-vijni-zakrilosya-blizko-7-tisyach-restoraniv-ta-kafe/

ANNEXES

Annex A

Table A.1

Examples of the tools to enhance digitalization of the restaurant

Purpose	Name	Official Website	Brief Description
Online Ordering and Reservation Systems	Poster	https://joinposter.com/ua	Popular PoS system designed for Ukrainian businesses. It includes features for menu management, table reservations, and online orders.
	K-KeeperUA	https://rkeeper.com.ua/	Provides reservation and online ordering systems for restaurants with customization options.
Digital Menu and Contactless Ordering	OnlineMedia	https://onlinemedia.company/	Offers digital menu solutions with QR code integration for Ukrainian restaurants, enabling contactless ordering.
	Stravopys	https://stravopys.com/uk	Provides digital menu and ordering functionalities development.
Customer Relationship Management (CRM) Software	SalesDrive	https://salesdrive.ua/	A CRM tool suitable for managing customer interactions and sales pipelines for restaurants.
	Salesforce	https://salesforce.com	Offers CRM solutions focused on customer relations and order management for restaurant business.
Inventory Management Software	POSSector	https://pos-sector.net/	A software company offering inventory management solutions for restaurants and retail businesses.
	Waiterio	https://www.waiterio.com	Provides restaurant management software including inventory control.
Social Media Management Tools	Hootsuite	https:// www.hootsuite.com	Multifunctional dashboard for keeping tabs on all networks, that allows to create the streams, post schedules, etc.
	Buffer	https://buffer.com/	Allows to find, schedule and share articles across different networks, to manage multiple platforms.
Contactless Payments and Loyalty Programs	Portmone	https://www.portmone.com.ua/r3/uk	A payment gateway providing contactless payment solutions suitable for restaurants.
	Interkassa	https://interkassa.com/	Offers a wide range of online payment solutions (e.g. via QR code).
Data Analytics	Owox BI	https://www.owox.com	Provides analytics and reporting tools that can be used by

and Reporting Tools			restaurants to analyze customer behavior and marketing performance.
	Horeker	https://www.horeker.com/	Offers analytics tools for restaurants to monitor online visibility and competition, etc.
Employee Training and Learning Management Systems	SmartExpert	https://smartexpert.net/	Provide training courses and learning management systems suitable for restaurants to train their staff.
	IAMPM	https://iampm.club/	Provides e-learning solutions for employee training and development, including HORECA industry.
Feedback Collection Platforms	Revci	https://revci.com/	Offers survey tools and feedback collection services suitable for restaurants.
	Gestly	https://gestli.com/	A platform for online communication with the guests, allows to collect feedbacks via QR code, etc.
Cybersecurity Tools	DATAMI	https://datami.ua/	A cybersecurity company providing web security services suitable for restaurants.
	Servi5	https://servi5.com/	Offers cybersecurity services including penetration testing and data protection (including restaurant business).

Source: complied by the author

Table A.2

The practical challenges in implementing digitalization for the restaurant business

Challenges in Implementing Digitalization for the Restaurant Business	**Brief Description**
Technological Integration	Integrating new digital systems, software, and hardware into existing restaurant operations can be complex. Compatibility issues, system integration, and technical expertise requirements might pose challenges.
Cost of Implementation	The initial investment required for digitalization, including purchasing hardware, software, training staff, and ongoing maintenance costs, can be substantial, especially for smaller restaurants with limited budgets.
Staff Training and Adaptation	Training staff to effectively use new digital tools and systems can be time-consuming and might face resistance from employees unfamiliar with technology, impacting the pace of implementation.
Data Security and Privacy Concerns	Handling customer data, payment information, and maintaining security protocols to protect against cyber threats and data breaches is crucial. Complying with data protection laws adds complexity.
Customer Adoption and Experience	Ensuring that customers are receptive to digital changes and providing a seamless and user-friendly experience through online ordering, payment systems, or digital menus is essential.
Infrastructure and Connectivity Issues	Reliability of internet connectivity, especially in certain geographical locations, can be a hurdle. This affects the functioning of online systems, causing disruptions in service.
Regulatory and Legal Compliance	Adhering to regulations related to online transactions, data handling, and food safety standards in the digital space adds complexity and necessitates continuous monitoring and compliance.
Competition and Market Saturation	With an increasing number of restaurants adopting digital strategies, standing out among competitors in the digital landscape and offering unique value propositions becomes challenging.
Maintenance and Upgradation	Ensuring regular maintenance, updating software, and staying abreast of technological advancements to remain competitive requires continuous effort and resources.
Cultural Resistance and Change Management	Resistance to change within the organizational culture and aligning the entire workforce towards embracing

	digitalization might hinder progress. Effective change management strategies become crucial.

Source: complied by the author