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APPLICATION OF INFORMATION TECHNOLOGY IN ENTERPRISE MANAGEMENT

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Abstract. The **purpose** of this paper is to explore how information technology affects traditional enterprise management in the information technology era and how information technology can be more effectively applied to enterprise management. **Methodology**: This paper uses literature research, logical summaries and VOSviewer to analyse the importance of information technology to business management and the opportunities and challenges it presents. As a **result**, different companies need to adapt their development strategies to the information age to gain an edge in the competitive marketplace. In today's digital age, companies cannot ignore the importance of using information technology to stay competitive and successful.

JEL Classification: M10, M15, M19
Keywords: enterprise management, information management, informatization, application

INTRODUCTION

Informatisation is the historical process of nurturing and developing new types of productivity represented by intelligent computer tools for the benefit of society. The 21st century is the era of information and knowledge-based economy. Different enterprises need to adjust their development strategies to adapt to the development of the information age and gain an edge in market competition. Whereas traditional business management relies on manual labour and paper documents to organise and manage business activities, information-based business management uses computer technology and digital tools to achieve automation and efficiency. This allows business activities to be managed more effectively and increases productivity and competitiveness. This also shows that the use of information technology in business is particularly important. In the information age, the competitive market landscape has changed and new information technology has had a huge impact on traditional business management. Generally speaking, enterprise informatisation is manifested as equipment informatisation, tool informatisation, product informatisation and office informatisation. All these have brought new challenges to traditional enterprise management. However, enterprise informatisation also faces the risk of enterprise information security. In any case, informatisation is of great significance for the survival and development of enterprises in this century.

LITERATURE REVIEW

Peter Drucker who is one of the pioneers of management theory in the 20th century, he introduced the concept of the "information revolution" in the 1960s, which identified information as one of the resources of a company and stressed that the management and application of information was crucial to its success.

George Gilder introduced the concept of the 'information economy', which saw information and knowledge as the main drivers of economic development and led the way in the development of information technology and the economy, and Michael Porter introduced the concept of "value chains", arguing that companies could improve and optimise their internal value chains through information technology, thereby increasing their competitiveness in the 1980s.

Thomas Davenport is widely credited with popularizing the concept of knowledge management in the 1990s. Knowledge management refers to a set of practices and strategies aimed at identifying, capturing, storing, sharing, and using knowledge and information within an organization to enhance its performance and competitiveness.

Earl, M. J. in 1989 proposed an IT management strategy to examine the concept, organisation and implementation of IT in organisations.

Asaul, A., Voynarenko, M., Dzhulii, L., Yemchuk, L., Skorobohata, L., & Mykoliuk, O. in 2019 presented the functional potential of up-to-date information systems in enterprise management, processing of enterprise economic information and formation of management processes.

All of these literatures indicate the functional potential of information provision and confirmation of the key role of up-to-date information systems in achieving business and innovation success of companies and increasing profitability, which indicates information technology plays an irreplaceable role in promoting economic development. It can change the traditional management mode of enterprises and effectively control and manage their processes.

SETTING OBJECTIVES

The purpose of this paper is how information technology affects traditional enterprise management in the information age, and how information technology can be more effectively used in enterprise management.

METHODOLOGY

This paper uses literature research, logic summary, VOSviewer methods to analyze the importance of information technology to enterprise management, as well as the opportunities and challenges it brings.

With the help of the VOSviewer software product, information from the Scopus database was used to create a visual map of the concept of "information enterprise management" and related ideas, based on information from the Scopus database: 234 documents.

As we can see from the visualization, clusters of concepts, interconnected, are grouped by factor:

1. Red cluster - the main element is the concept of information enterprise management, which includes enterprise information management, information management, big data, decision making, competition, artificial intelligence and cloud computing factors;
2. Green cluster – factors of knowledge management, database systems, management information systems, semantics and decision support systems;
3. Blue cluster – services and industry factors;
4. Yellow cluster – business process and information science factors;

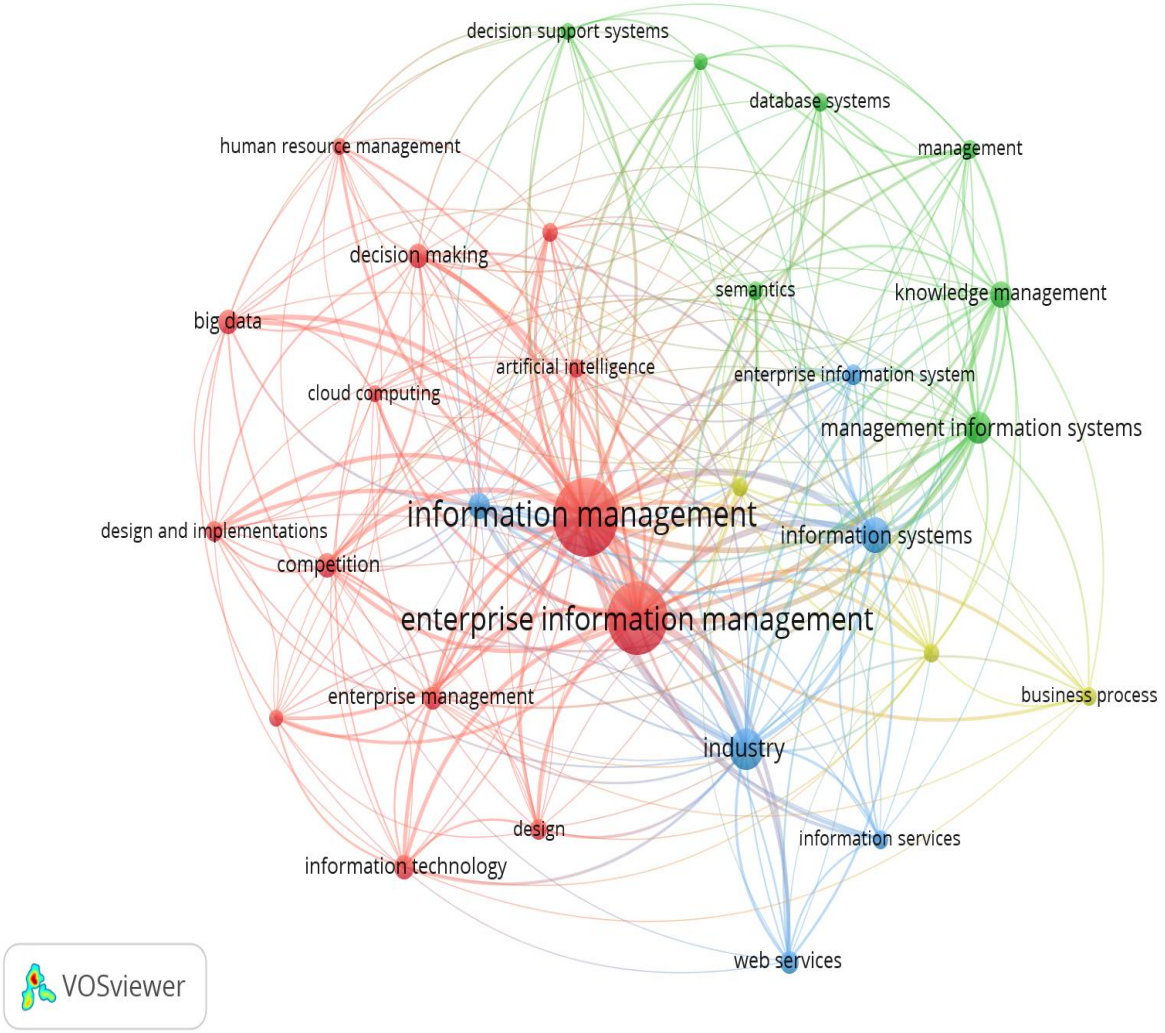

Figure 1. The visualization of the concept of "information enterprise management" network

Source: Constructed by authors use VOSviewer software (Input data:234 documents, Scopus Database).

The keywords “enterprise management” “information management” “application” and “informatization” were specified and expanded for a more detailed analysis. Based on the results of data processing, the following visualization was built. (fig 2.)

Fewer documents that were analyzed and processed by analogy with Fig 1, allowed to reduce the number of clustered definitions and concepts. However, as a result of the analysis, factors were added to the list that were not taken into account in the visualization results in Fig 2.

These include the following:

1. The resource allocation factor that is associated with information management;
2. The erp system factor is useful for enterprise resource planning;
3. Decision making and data mining factors that are components of the big data factor

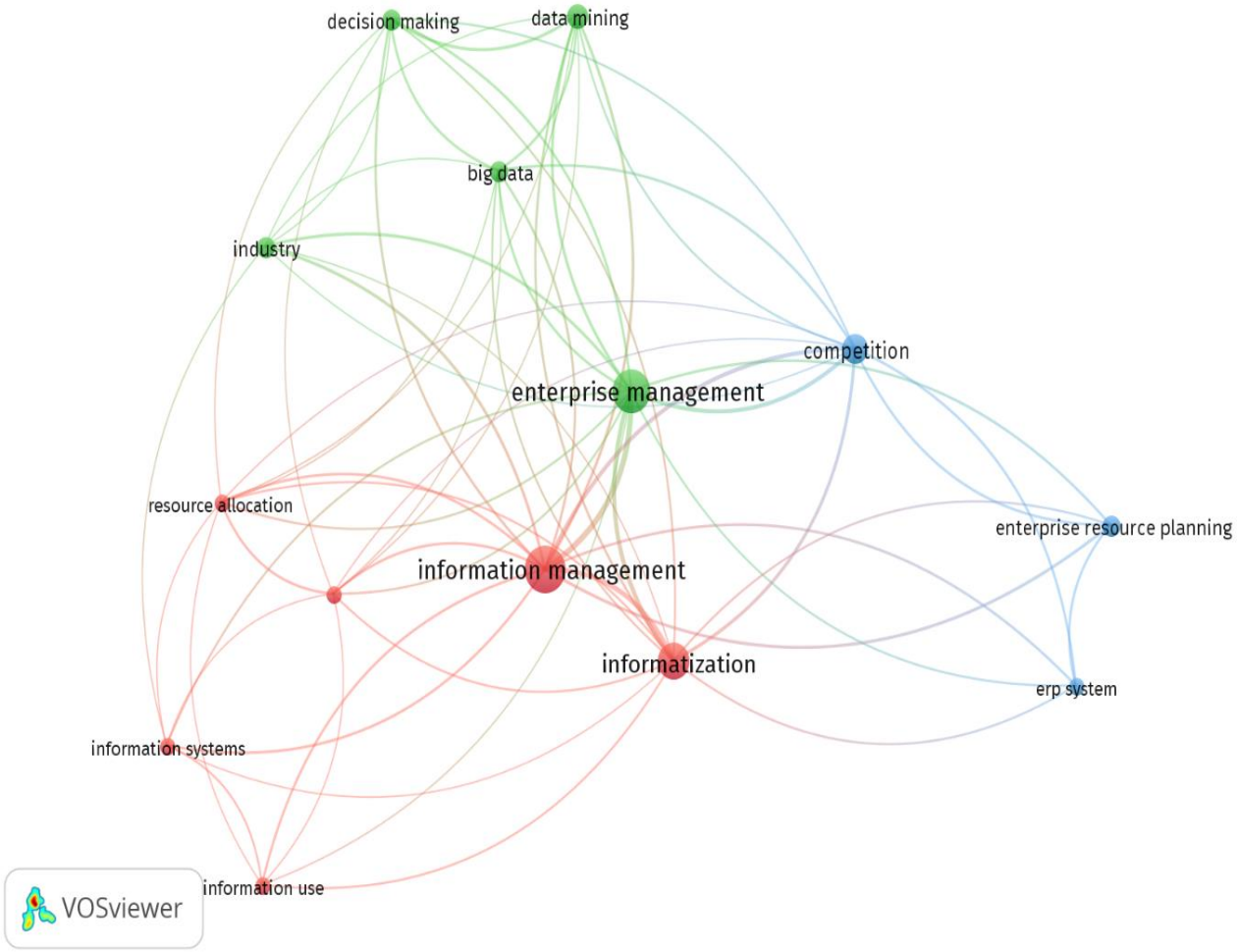

Figure 2. The visualization of the specified key words network

Source: Constructed by authors use VOSviewer software (Input data:22 documents, Scopus Database).

RESULTS

In the age of information technology, different companies need to adapt their development strategies to the information age to gain an edge in the competitive marketplace. In today's digital age, companies cannot ignore the importance of using information technology to stay competitive and successful. Figure 1 shows the management structure of informatization enterprise.

By the table 1, We can see more clearly the enterprise management structure of information technology. In general, the management structure of an information technology company aims to ensure that the company's technological infrastructure and systems are managed effectively and efficiently and are aligned with the overall objectives of the organisation.

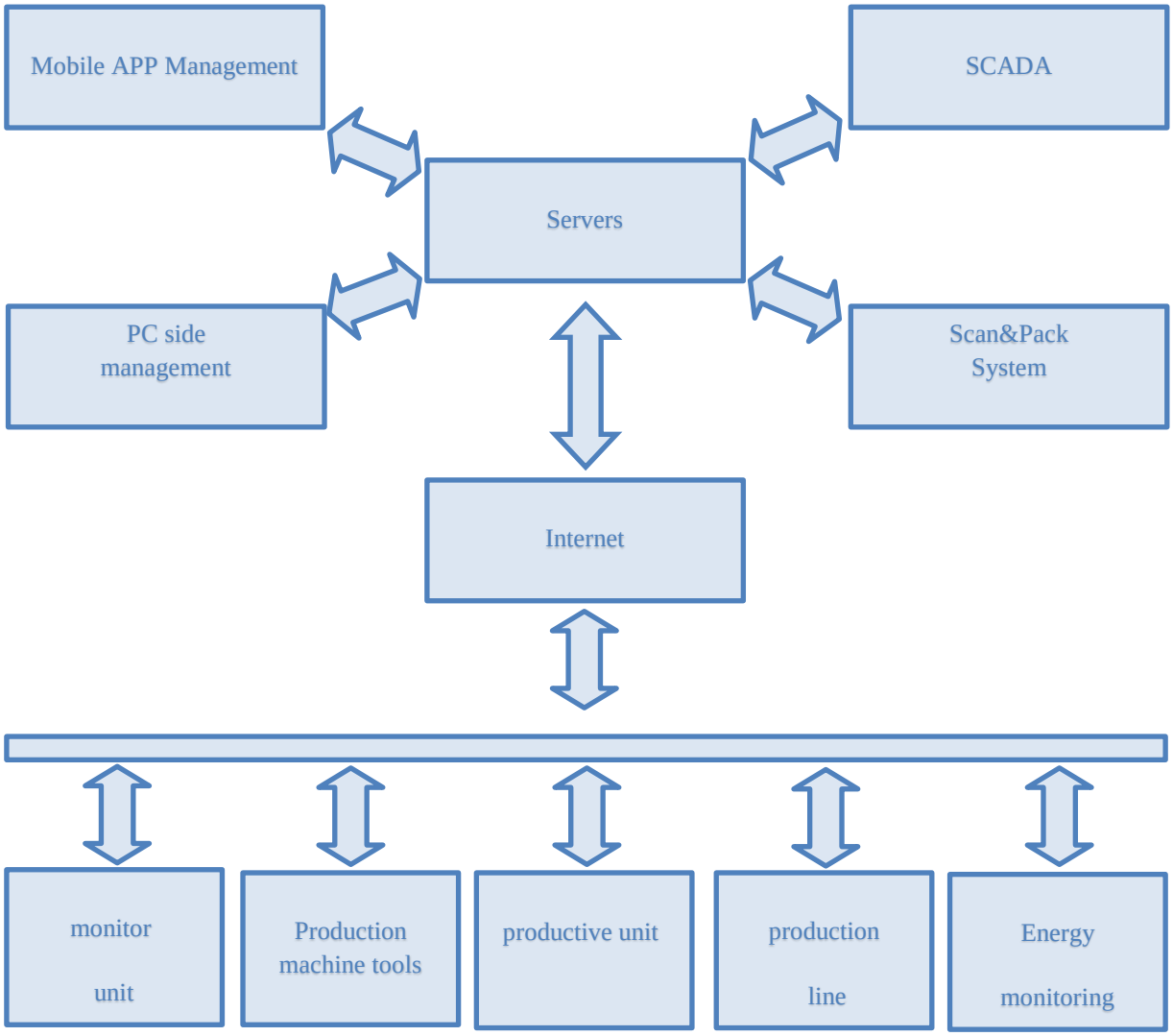

Table 1. Management structure of informatization enterprise
Source: formed by the author

In the information age, the objects of enterprise informatization are specifically manifested in the following areas:

1. Equipment informatization. Whether it is the traditional manufacturing industry or the emerging Internet industry, enterprises will need a variety of equipment to operate, such as production equipment, office equipment, research and development equipment, old equipment will slow down the work efficiency, as the saying goes, "to do a good job, must first sharp its tools" is this truth, equipment is the foundation, Whether the equipment is updated on time greatly determines the market adaptability and survival status of enterprises, which is particularly obvious in manufacturing, Internet design and technology-based companies. Equipment informatization is the most direct condition for modern enterprises to ensure and improve work and production efficiency.

2. Technology informatization, the technology refers to both work skills and work methods. The application of technical information can greatly reduce the rate of human error and avoid rework, thus improving work efficiency and freeing manpower as much as possible. Modern enterprise division more meticulous professional departments, collaboration between various departments to occupy more and more big, the proportion of the push related technology popularization in the work, in the rapid and correct professional work done at the same time, can

have more time to allocate on the communication coordination, the popularity of technology information both reducing the workload of staff, and optimize the structure of the employee's work content, Is one of the important signs of enterprise modernization.

3. Tool informatization, tools refer to management tools, communication tools and other software tools. The above-mentioned communication and cooperation between internal and external enterprises, how to quickly and effectively carry out internal and external communication, reduce the cost of communication is an important issue that almost all enterprises have to face. Therefore, how to timely and transparent disclosure of the latest information to relevant people, to ensure that every link in the process is timely follow-up has become a priority. Then the importance of choosing the right work tool is self-evident.

4. Product informatization. Whether our products are physical or not, each product contains more and more information. We can place this information in another virtual product space by adding qr codes, bar codes or external chains on the packaging of our products. Product information released the space to show some product packaging, this means completely removed the limitation of information display space, unlimited placed on all the products, whether it is a batch information or products, such as individual after-sales information all information, enterprise's informatization level directly is embodied in the informatization level of the product.

5. Service informatization. Enterprises in addition to providing product at the same time, it will provide the corresponding service, based on the service informatization is the inevitable product information, service information have become more convenient service, information correlation between omitted many validation process, product or service incarnations of the be clear at a glance, so service informatization degree is also one of the important performance of enterprise informatization.

Information technology management in enterprises also faces opportunities and challenges.

Opportunities:

Tracking and control of the whole process of materials, procurement, warehousing, receiving, on-line, loss and even the cause of loss, real-time data, clearly visible, can greatly reduce the cost of material loss.

Managers have eliminated all the tedious work of placing orders and statistics in the past, and shifted their focus to solving all kinds of problems in the process of production and manufacturing from the source, greatly improving the management level and efficiency.

Product quality standards will be clearer, quality control will be simpler and the whole process traceable. The customer can set the number of times the product has a problem on the production line. If the number of times the product has a problem exceeds the specified number, it will be considered as a nonconformity.

Sales relies more on the analysis of all kinds of information data by the system, so as to find users more accurately and deal with them more efficiently. Sales will become a more professional and intimate service.

Tasks, delivery cycles, standards and other issues are clear and controllable, and the benefits are completely related to their ability level and activeness, which will greatly stimulate employees' initiative and willingness to take the initiative to improve their core abilities, and the labor-management relationship and working atmosphere will be more relaxed and harmonious.

Challenges:

In the era of big data, the collection and analysis of enterprise decision-making information and the formulation and selection of decision-making schemes will be affected by complex environmental factors. In addition, it is difficult to identify the value of information related to enterprise decision-making, which makes it more difficult for decision-makers to make decision-making management to a certain extent.

Enterprise decision generally needs to go through the collection of data, investigation and research, analysis and judgment, scheme evaluation and evaluation of very complex procedures, which will go through a period of time. In addition, with the increasing popularity of big data in

enterprises, the speed of market changes will be accelerated to a certain extent, which puts forward higher requirements on the decision-making speed of enterprises and requires them to formulate a more scientific decision-making mode.

CONCLUSIONS

From a macro perspective, several trends in the information age have become irreversible historical currents that are changing the face and pattern of the world today. In parallel with the industrialisation process in developing countries, developed countries are dominated by the post-industrial diffusion cycle, creating a situation where two cycles overlap and intersect in parallel on a global scale, with profound and lengthy historical changes in all aspects of industrial structure methods, the impact of production activities on social and global economic outcomes, organisational structures and management decisions. The restructuring of international industry has become a global trend, promoting the emergence of a new economic order and a shift in the centre of world economic development. The emergence of a new international economic order with interdependence and coordinated development of division of labour and cooperation, (which of course also implies more intense competition) as the main elements of the world economy within a historical period, as well as the tendency to establish the eastward shift of the centre of economic development, should be regarded as a driving factor for the economic and social development of the information age. Due to the enormous role of information and information technology, the globalisation of politics, economics and culture has become an inescapable reality and trend. The globalisation of markets and production centres; the globalisation of communications and telecommunications networks, i.e. the globalisation of information technology; the globalisation of assets; the globalisation of business organisation and the globalisation of business competition will certainly give rise to changes in economic relations and political patterns between countries and enterprises. The informatisation of the international community is becoming a historical trend that is making countries and peoples more interdependent in all aspects of politics, economics and culture. Along with the impact of information technology, this global interdependence is influencing and changing international political processes and economic and cultural relations, and will lead history in an unexpected direction.

In short, the ongoing global information and information technology revolution is shaping the direction of social change in unprecedented ways, the results of which will lead to the realisation of an information society on a global scale. The trend towards the information age has become an irreversible historical trend that is changing the face and pattern of the world today. Companies should also follow the basic principles of management and innovate with their own characteristics. Only in this way will they be able to survive and thrive in this ever-changing information environment. Several trends in the information age have become irreversible historical currents that are changing the face and landscape of the world today. Enterprise management is also being reformed in the age of information technology, which is manifested in equipment informatization, tool informatization, product informatization and office informatization. These have brought new challenges and opportunities to traditional enterprise management. Therefore, enterprises should also follow the basic principles of management, combine their own characteristics and innovate. By this way will they be able to survive and thrive in this ever-changing information environment.

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ЗАСТОСУВАННЯ ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ В УПРАВЛІННІ ПІДПРИЄМСТВОМ

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У статті проаналізовано теоретичні засади побудови логістичної системи підприємства, наведено класифікацію основних суб'єктів господарювання в Україні, простежено ключові тенденції розвитку та окреслено роль малого бізнесу в національній економічній системі, проведено порівняльний аналіз частки середнього та малого бізнесу, визначено ключові економічні аспекти управління їх логістичною системою. Мета статті полягає в тому, щоб дослідити, як інформаційні технології впливають на традиційне управління підприємством в епоху інформаційних технологій і як інформаційні технології можна більш ефективно застосовувати для управління підприємством. Методологія: у цьому документі використовуються дослідження літератури, логічні підсумки та VOSviewer для аналізу важливості інформаційних технологій для управління бізнесом, а також можливостей і проблем, які вони представляють. У результаті різні компанії повинні адаптувати свої стратегії розвитку до епохи інформації, щоб отримати перевагу на конкурентному ринку. У сучасну епоху цифрових технологій компанії не можуть ігнорувати важливість використання інформаційних технологій, щоб залишатися конкурентоспроможними та успішними.

Ключові слова: управління підприємством, інформаційний менеджмент, інформатизація, застосування