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**МАКАТОРА Alona**

National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»

<https://orcid.org/0000-0001-9373-5169>

Email: [alona.makatora@gmail.com](mailto:alona.makatora@gmail.com)

**МАКАТОРА Dmytro**

National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»

<https://orcid.org/0000-0002-1909-900X>

e-mail: [makatora\\_d@ukr.net](mailto:makatora_d@ukr.net)

**ZENKIN Mykola**

National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»

<https://orcid.org/0000-0002-8840-0572>

e-mail: [nikolay\\_zenkin@ukr.net](mailto:nikolay_zenkin@ukr.net)

**KUBANOV Ruslan**

Separate structural subdivision «Institute of Innovative Education of the Kyiv National University of Civil Engineering and Architecture»

<https://orcid.org/0000-0002-0121-4858>

e-mail: [kubanov12@gmail.com](mailto:kubanov12@gmail.com)

## INFORMATION AND COMMUNICATION TECHNOLOGIES AS A TOOL FOR INCREASING THE EFFICIENCY OF PRINTING COMPANIES' ECONOMIC ACTIVITY

*In order to increase the efficiency of economic activity of printing companies, the authors of the study have identified the following features and promising directions: reorientation of management tasks for the development of printing companies in order to ensure their competitiveness; determination of strategic directions of development of printing companies; optimisation of the appropriate level of information, resource and organisational support of printing companies for the successful implementation of development strategies; diversification of activities of printing enterprises; corporatisation of printing enterprises; ensuring investment development of printing industry enterprises. The implementation of strategies aimed at optimising processes, reducing costs, using advanced technologies and increasing the efficiency of interaction with consumers is the reorientation of management tasks for the development of printing companies in order to ensure their competitiveness. The strategic directions for the development of printing companies include: European integration, improvement of product quality in accordance with international standards, use of information technology to optimise production processes, innovation, expansion of production links, environmental friendliness and solving the problem of qualified personnel. The successful implementation of development strategies depends on optimising the appropriate level of information, resources and organisational support for the activities of printing companies. Information support is concerned with determining strategic directions through the analysis of internal and external information. The focus of resource support is on the efficient management of resources for the achievement of production efficiency. Organisational support involves creating an effective structure and motivating staff. Diversifying printing businesses in the current environment requires adopting the latest technologies and using information and communication technologies. This makes it possible to expand the range of products, increase the efficiency of production, optimise management and improve customer relations. The corporatisation of printing companies is important for business development, enabling companies to consolidate, implement large projects and expand markets. The integration of ICT contributes to the optimisation of production processes, the improvement of management efficiency and the creation of competitive advantages for printing companies. Using ICT in the printing industry plays a key role in increasing the attractiveness of companies to invest. The integration of ICT enables the optimisation of internal processes. It reduces costs, develops innovation and attracts new investors.*

*Keywords: information and communication technologies, printing industry, management, economic development, diversification, corporatisation, investment attractiveness, product range, production.*

**МАКАТЬОРА Альона, МАКАТЬОРА Дмитро, ЗЕНКІН Микола**

Національний технічний університет України «Київський політехнічний інститут імені Ігоря Сікорського»

**КУБАНОВ Руслан**

Відокремлений структурний підрозділ

«Інститут інноваційної освіти Київського національного університету будівництва і архітектури»

## ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНІ ТЕХНОЛОГІЇ ЯК ІНСТРУМЕНТ ПІДВИЩЕННЯ ЕФЕКТИВНОСТІ ЕКОНОМІЧНОЇ ДІЯЛЬНОСТІ ПІДПРИЄМСТВА ПОЛІГРАФІЧНОЇ ІНДУСТРІЇ

*З метою підвищення ефективності економічної діяльності підприємства поліграфічної індустрії авторами дослідження визначено наступні особливості та перспективні напрямки: переорієнтація завдань управління розвитком поліграфічних підприємств для забезпечення їх конкурентоздатності; визначення стратегічними напрямками розвитку поліграфічних підприємств; оптимізація належних рівнів інформаційного, ресурсного та організаційного забезпечення діяльності підприємств поліграфічної індустрії для успішної реалізації стратегій розвитку; диверсифікація діяльності поліграфічних підприємств; корпоратизація поліграфічних підприємств; забезпечення інвестиційного розвитку підприємств поліграфічної індустрії. Окремо, визначено наступні характеристики. Переорієнтація завдань управління для розвитку поліграфічних підприємств з метою забезпечення конкурентоздатності полягає у впровадженні стратегій, спрямованих на оптимізацію процесів, зменшення витрат, використання передових технологій та збільшення ефективності взаємодії зі*

споживачами. Визначення стратегічних напрямків розвитку поліграфічних підприємств включає в себе євроінтеграцію, підвищення якості продукції відповідно до міжнародних стандартів, використання інформаційних технологій для оптимізації виробничих процесів, інновації, розширення виробничих зв'язків, екологічність та розв'язання проблеми кваліфікованих кадрів. Оптимізація належних рівнів інформаційного, ресурсного та організаційного забезпечення діяльності підприємств поліграфічної індустрії дозволяє забезпечити успішну реалізацію стратегій розвитку. Інформаційне забезпечення передбачає аналіз внутрішньої і зовнішньої інформації для визначення стратегічних напрямків. Ресурсне забезпечення орієнтується на ефективне управління ресурсами для досягнення ефективності у виробництві. Організаційне забезпечення включає в себе створення ефективної структури та системи мотивації персоналу. Диверсифікація діяльності поліграфічних підприємств у сучасних умовах потребує впровадження новітніх технологій та застосування інформаційно-комунікаційних технологій. Це дозволяє розширити асортимент продукції, підвищити ефективність виробництва, оптимізувати управління та покращити взаємодію з клієнтами. Корпоративізація поліграфічних підприємств є важливими для розвитку бізнесу, дозволяє укрупнити бізнес, реалізувати великі проекти, розширити ринки збуту. Інтеграція ІКТ допомагає оптимізувати виробничі процеси, підвищити ефективність управління та забезпечити конкурентні переваги підприємствам у сфері поліграфії. Використання інформаційно-комунікаційних технологій у поліграфічній індустрії грає ключову роль у підвищенні інвестиційної привабливості підприємств. Інтеграція ІКТ дозволяє оптимізувати внутрішні процеси, знижувати витрати, розвивати інновації та залучати нових інвесторів.

*Ключові слова:* інформаційно-комунікаційні технології, поліграфічна індустрія, управління, економічний розвиток, диверсифікація, корпоративізація, інвестиційна привабливість, асортимент продукції, виробництво.

## GENERAL STATEMENT OF THE PROBLEM AND HOW IT RELATES TO IMPORTANT SCIENTIFIC OR PRACTICAL ISSUES

The printing industry is no exception to the rapid development of information and communication technologies (ICT). Modern technologies are penetrating every aspect of running a business, from managing production to marketing strategies. Printing companies can increase productivity, reduce costs and gain a competitive edge through the use of ICT.

One of the main benefits of using ICT for printing is to speed up production and improve quality. The introduction of digital technologies into the production process allows many previously manual operations to be automated, reducing the risk of errors and wastage. This allows companies to increase their output and reduce the costs of both staff and raw materials. The ability to improve business management through specialised software products is another important benefit of using ICT. Companies can improve the efficiency of all business processes, ensure accurate resource management and respond to market changes in a timely manner by implementing production, warehouse, financial and human resource management systems. In addition, the use of ICT can help printing companies to improve their marketing strategies and to attract new customers. Companies can draw attention to their products and services, create interesting content and interact with their audiences by using the Internet and social media as a means of communicating with consumers. In particular, printing companies can improve internal communication and collaboration between departments through the use of ICT. Employee productivity can be increased and the quality of work improved by introducing specialised software for collaborative project work and information exchange.

In this way, ICT has an important role to play in improving the economic performance of companies in the printing industry. Adopting them enables companies to increase productivity, reduce costs, improve management and develop marketing strategies. Given the rapid pace of technological development, using ICT is becoming a necessity to ensure companies remain competitive in the modern business environment.

## ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Various aspects of this problem have been the subject of study and presentation in the works of Ukrainian and foreign scientists, such as S. P. Dunda [1]; Y. Matishchak [2]; R. Bugrimenko, P. Smirnova [3]; S. O. Bilous-Sergeeva [4]; L. E. Dovgan [5]; O. V. Honcharuk, A. A. Babenko [6]; S. O. Gutkevych, L. P. Shenderivska [7]; O. S. Bratko, I. R. Salamon [8]; O. V. Kryvoruchko, T. M. Morozova, A. M. Desyatko [9]; L. Yu. Sigida L.O. [10]; L.A. Musina [11]; U. Motornyuk, V. Baidalka, V. Kartashev [12]; D. Komyshev, A. Belyatinsky [13]; V. Bagmet [14]; L. Pronko, T. Sobitnyuk [15]; N.Sh. Ponomarenko, O. Finagina [16]; S. Palaguta [17]; L. Malyarets, G. Matvienko, G. Belyaeva [18]; O. Martsinkovska, O. Legkyi [19]; G. Semenov, Yu. Kremenchutska [20]; I. Lytovchenko [21]; A. Gordeev [22]; O. Berezhna [23]; S. Denysenko [24]; V. Tisunova [25]; N. Nikonova [26]; V. Prokhorova [27].

## FORMULATING THE ARTICLE'S OBJECTIVES

**The purpose of the study** is to prove the usefulness of using information and communication technologies as a tool for improving the efficiency of printing company's business.

## THE MAIN MATERIAL STATEMENT

In various industries, including the printing industry, ICT is becoming an integral part of business in the modern world. It is important to provide a company with the tools to operate effectively in today's environment, where the business environment is constantly changing. Developing a business is associated with various approaches to understanding its nature, including analysing the state of the economic system, the impact of various factors on development and the interrelationships between them.

Several key characteristics of the category “enterprise development” can be identified based on the analysis of approaches to understanding development in the scientific field:

1. Development is an irreversible, directed, natural and unique process of changing in a spatial and temporal open system.

2. It is expressed in a qualitative change in the composition, structure and functioning of the system, manifested in a crisis form and aimed at achieving the enterprise’s goals.

3. Development involves the transformation of an open system in space and time, characterised by a constant change in the aims of existing and forming a new open system.

4. Conscious, purposeful transformation of the object of development is the process of development.

5. The development movement is a continuous process in time, which proceeds in a spiral. That is, it involves a constant ascent to a new level, taking into account previous achievements.

In view of these characteristics, development can be seen as a complex and dynamic process that involves gradual changes and transformations in the enterprise system in order to achieve new results, increase efficiency and improve functioning [1, p. 71; 2].

The management of enterprises is a continuous process of strategic decision-making with the aim of finding new directions for development and ensuring economic growth. ICT is a tool that can help enterprises to find solutions to these important tasks. It is possible to optimise internal processes and increase the competitiveness of enterprises by introducing digital technologies in production processes, management and marketing [3].

The improvement of the efficiency of the development of enterprises in the printing industry is an urgent task in the current environment. This is due to a number of factors that affect the way companies operate. These factors require the search for new solutions and strategies. Some of the aspects that need to be taken into account when planning business development are the accelerated changes in the internal and external environment, increased competition, intensified modernisation processes and the growing importance of investment in development. In particular, the market structure is constantly changing and companies must be prepared to respond quickly to these changes. Key factors in the successful development of a company are the ability to adapt to new conditions, to innovate and to modernise production. What’s more, the printing industry is becoming increasingly competitive. This forces companies to constantly improve and increase efficiency. Investing in modern technologies and equipment that automate production processes, improve product quality and reduce costs is one of the ways to increase development efficiency. The increasing role of investment in a company’s progress points to the need for continuous development and modernisation of production facilities [4, p. 122].

As their main objective is to make a profit, the activities of companies in the printing industry have considerable commercial potential. Favourable conditions for the further development of companies are created by specialising in customised work for all sectors of the economy, including the printing of periodicals and non-periodicals, advertising products, packaging, labels, etc. Publishing products such as books, newspapers and magazines are an integral part of cultural heritage. They play an important role in shaping people’s world view, culture, patriotism and knowledge. This contributes to the intellectual potential of the nation and helps it to develop [5].

In modern conditions, the printing market is an important element of the information market. It contributes to complicating the relations in the information space, expanding the forms of distribution and sale of products, as well as increasing the size of the market and strengthening differentiation. Such changes in the culture of information consumption require developing effective development strategies for publishing and printing companies to operate successfully in the market [6, p. 864].

In order to increase the efficiency of the economic activity of printing companies, the authors of the article identify the following features and promising directions

1. Reorienting the tasks of managing the development of printing companies to ensure their competitiveness.

2. Defining the strategic directions for developing printing companies.

3. Optimising the appropriate level of information, resources and organisational support for the activities of printing companies to ensure the successful implementation of development strategies.

4. Diversifying printing activities;

5. Corporatizing printing companies.

6. Ensuring the investment development of printing enterprises.

Let us talk on the reorientation of the tasks of the management of the development of printing companies in order to ensure their competitiveness.

In today’s conditions, it is possible to identify a number of problems that lead to a worsening of the development of printing industry enterprises at the macro and micro levels of management: low competitiveness of printed products in comparison with substitutes, mainly due to inadequately competitive prices; lack of highly qualified staff, which is particularly relevant in the context of innovative development of the industry; low level of infrastructure support; lack of resources for timely updating of the material and technical base: low level of infrastructure support; lack of resources for timely updating of the material and technical base: low quality of certain types of products, which is related to the material and technical condition, management organisation and motivation

of workers; imbalance of the industry in terms of the size of enterprises and the level of mechanisation and automation; unsystematic state support for the industry and imperfect public procurement of publishing printed products; low effective demand of customers and consumers and low level of consumer culture. These conditions are interrelated: low demand is the result of low competitiveness and consumer solvency, which in turn are the cause of limited sources of financing for business development. In order to overcome these difficulties, it is necessary to have a comprehensive approach to the solution of the problems of the printing industry, taking into account their interconnection and impact on the level of development of printing industry enterprises [7, p. 80].

This is why printing companies need to rethink the tasks of their development management in order to ensure their competitiveness. According to studies and current practice, the most important tasks for a printing company today are as follows

- increasing the competitiveness of print products in relation to electronic information; the main focus is on the price of products and the search for ways to reduce costs;
- optimising company size to market needs, introducing advanced technologies and modernising equipment to improve production efficiency;
- applying advanced methods of product promotion, developing foreign markets, using information and communication technologies to attract new customers;
- improving the culture of product consumption to minimise waste and environmental pollution. In particular, using environmentally friendly materials in production.

Integration into all aspects of the business, from production to marketing, is becoming increasingly important in the modern development of printing companies. An important aspect is the development of a development strategy that takes into account current market needs and technological trends. In solving the tasks of managing the development of printing companies, we believe that ICT can play a key role. Below are some specific ways in which ICT can be of assistance in this process:

1. Marketing and distribution of products: Using digital marketing strategies, including online advertising, social media, email, etc., will help market products and attract new customers. Digital marketing enables small and medium sized enterprises to compete with large companies, to attract more customers and to sell and market effectively. A vast network of digital touchpoints through which customers interact with the brand can be accessed through the use of digital technology. It is important to have a good understanding of each channel in order to use digital marketing effectively [8].

2. Production optimisation: The use of the Internet of Things (IoT) for monitoring and control of production processes, remote control of equipment and data analysis to improve production efficiency and reduce costs. The efficiency of economic activity in the printing industry can be greatly enhanced by ICT such as the Internet of Things. The Internet of Things allows devices and sensors to be connected to a single network. This makes it easier for them to interact with each other and with people. This opens up new opportunities for optimising processes and increasing business productivity by enabling devices, virtual objects and users to be identified on the Internet [9, p.83].

3. Product consumption: developing mobile applications for convenient ordering of products, creating online platforms for consumer feedback as well as interactive instructions on how to use products to improve consumption culture. The use of ICT, in particular messengers, can be a means of improving the efficiency of interaction with the target audience in the printing industry. The use of messengers has already shown success in working with customers, known as messenger marketing. Using chatbots to automate communication and improve customer service is another trend. With the help of virtual assistants, manufacturers can simulate live communication with customers, which has a positive impact on customer perception and communication efficiency [10, p. 155-158].

4. Environmentally friendly production: the use of information technologies for the implementation of systems for the monitoring of the environmental impact of production, the selection of environmentally friendly materials and the optimisation of processes to minimise waste. The efficiency of the economic activity of companies can be improved through the use of information and communication technologies in the printing industry. The conditions of the circular economy allow the use of environmental technologies and innovations for the conservation of resources and the recycling of waste, which contributes to the creation of added value. Eco-industrial parks are ideal places to realise this potential. They bring together production and service companies on a common site [11, p. 7].

Thus, introducing information and communication technologies into printing companies' activities not only increases their competitiveness, but also optimises production processes, improves interaction with customers and consumers, and ensures environmentally friendly production.

With regard to the identification of strategic directions for the development of printing companies. Especially in an unstable market, effective management of business development is a key factor for its successful operation. Strategic development directions, which are formed on the basis of the development concept, determine the company's prospects. This concept includes the definition of the company's goal, the setting of targets for the achievement of this goal, and the justification of the ways and means of the company's effective development.

In an unstable market environment, the main challenges for printing companies are to stabilise production, maintain market share, improve product quality and reduce staff turnover. The successful development of a company in an unstable environment depends on a clear definition of strategic priorities.

The main provisions for development are highlighted in relation to the development of printing companies. Among them are:

- the processes of European integration and the increased use of the existing production capacities;
- the organisation of the production and the certification in accordance with the international quality standards;
- the introduction of modern information technologies for the optimisation of the production process;
- the increase in the level of innovation through the modernisation of production;
- the expansion of production relationships to improve performance;
- the increase in the importance of ecology and the use of environmentally friendly materials;
- address skills gaps caused by rapid technological change.

There is no doubt that ICT can be a powerful facilitator in the achievement of strategic priorities for printing companies. The following are just some of the ways in which ICT can contribute to the realisation of these strategic priorities:

1. The process of European integration and the use of production capacity: ICT can be used to increase the efficiency of production processes, to implement production and logistics management systems, and to increase competitiveness on the international market [12].

2. The certification of products in accordance with international quality standards: ICT can help to implement quality control systems, automate processes and track product quality at all stages of production. An important prerequisite for the successful operation of a company in the modern marketplace is a quality system that meets the standards of the ISO 9000 series and a certificate for this system. Implementing such a system helps to ensure the production of competitive products, which is an important element when dealing with foreign partners and consumers [12, p. 314]. In general, the quality of products and competitiveness of enterprises in the printing industry can be improved by combining information and communication technologies with the quality system.

3. Modern information technologies implementation: using specialised design and printing software, automating drawing and printing processes, implementing print management and quality control systems. The current development of additive technologies, which have become increasingly attractive to various industrial sectors, is reflected in the growth of investment in this sector. Some of the benefits of additive technologies include high automation of production processes, improved product quality, rapid product creation, optimisation of profile models and reduction of production waste. These aspects are key to the concept of the digital factory of the future, where digitising design, manufacturing, testing and additive manufacturing play an important role in production processes. This trend is an indication that additive technologies have significant potential to increase production efficiency and create quality products in various industries [13, p. 25].

4. Innovation and production modernisation: using virtual reality to research and implement new technologies, introducing 3D printing for prototyping and low-volume production. In the context of Industry 4.0, which involves the development of intelligent and flexible production systems, ICT is an important tool. This approach aims to create systems that are adapted to customer and market needs, taking into account social, economic and environmental aspects. Companies can optimise production processes, improve product quality, reduce costs and become more competitive in the marketplace by implementing ICT in the printing industry. Broadly speaking, ICTs are an important part of implementing the Industry 4.0 concept within the printing industry [14].

5. Strengthening production links and increasing efficiency: using electronic maintenance and support platforms, implementing customer/supplier relationship management systems. It is necessary to purchase processor time, disk space and a network with the necessary bandwidth in order to implement cloud-based information systems. Cloud-based systems simplify and unify the interaction between the supplier and the user, including the software and a database that can be accessed by multiple users. Based on user requirements and service standards, they dynamically allocate computing resources. The use of cloud technologies can facilitate the implementation process of information systems, increase the availability of data and services, and ensure effective management and control by the company in the modern printing industry.

In general, printing companies can effectively implement strategic priorities, increase competitiveness and operate successfully in an unstable market through the use of information and communication technologies.

In particular, printing companies must not only fulfil orders, but also continuously improve and innovate, due to the growing importance of digital technologies in modern printing and the increasing demands of consumers for the quality of printed products. Companies can achieve high quality standards and meet the demands of the modern market by introducing the latest technologies, using high-quality materials and continuously training their employees. It is also important to be aware of regulations in the printing industry, as they can have an impact on companies' operating conditions and their competitiveness. Efficient production, accounting and financial management, as well as developing marketing strategies, are important aspects of successful printing operations. In order to ensure the stable development of printing companies, it is important to ensure high quality and innovation

of products, development of new types of services, active involvement of customers and partners. Companies can adapt to market changes and compete successfully with other industry participants by conducting regular market research and competitive analysis [15].

The successful implementation of development strategies depends on optimising the appropriate level of information, resources and organisational support for the activities of printing companies. Managing business development is a complex and multifaceted process that requires appropriate levels of information, resources and organisational support to implement successful development strategies.

At the level of information support for development management, it is important to analyse not only the internal situation of the company, but also the external environment. This makes it possible to clearly identify the need for change and to define the goal and objectives of development management. The rational use of the company's resources to achieve efficiency in the processes of supply and use of these resources is required at the second level - resource support. At this level, a company can optimise costs and increase productivity by developing and implementing specific measures.

Organisational support is the third level. It consists of creating an effective organisational structure that meets the requirements of the development strategy. The management functions and the motivation system of the workforce to achieve the set goals are based on this structure. It is important that this motivating system stimulates employees to actively participate in the process of developing the enterprise [16, p. 5].

ICT can effectively support managing the development of a printing company at all levels - informational, resource-related and organisational. The ways in which this can be done are outlined below:

1. Informational support:

- use of analytical software tools for the collection and analysis of data on the internal and external situation of the enterprise, which will help to clearly identify the need for change and to determine the strategic directions of development;

- implementation of knowledge management systems for storage and transfer of important information within the organisation, which will facilitate rapid response to changes in the environment [17, p. 80].

2. Resource-related support:

- use of software to plan and control the use of resources (such as production facilities, materials, human resources), which will optimise costs and increase productivity;

- implementation of electronic inventory and supply management systems to optimise the supply chain and to support the efficient use of resources [18, p. 181-182].

3. Organisational support:

- implementation of enterprise portals and communication platforms for the improvement of the efficiency of the co-operation and communication within the organisation;

- use of customer relationship management (CRM) and enterprise resource planning (ERP) systems in support of internal and external stakeholder management [19, p. 82].

In general, the use of ICT will allow the company to optimise management processes, ensure a quick and effective response to changes in the environment, improve interaction within the organisation and with external partners, which in turn will contribute to the achievement of strategic goals and the successful development of the company.

With regard to the diversification of printing companies. In the current environment, an important aspect of ensuring sustainable development and competitiveness in the market is the process of diversifying the activities of companies. Enterprises need not only to expand their product range, but also to adopt the latest technologies and develop innovative solutions in order to fully satisfy consumer needs and find new, more profitable markets [20, p. 217].

In the printing sector in particular, ICTs play an important role in the diversification of business activities. Using ICT makes it possible to improve production efficiency, optimise management processes, ensure quality interaction with customers and consumers, and influence the competitiveness of the enterprise [21, p. 91-92].

One of the most important areas of application of ICT in the printing industry has been the introduction of digital printing technologies. This enables companies to produce high quality products more quickly, to reduce costs and to optimise production processes. In addition, ICT helps to increase the volume of production, to fulfil individual orders and to expand the range of services offered. In the printing industry, the quality of the reproduction of various image elements, such as dots, lines and borders, is particularly important in digital printing. Full colour images are the result of the superimposition of monochrome halftone structures. The special feature of digital printing is the ability to print different copies on different materials very quickly. This makes it possible to reproduce colours accurately and to print short runs [22, p. 31]. This makes it possible for printing companies to efficiently produce high quality printed matter in a short period of time and to reduce production costs.

Printing companies can create unique and creative products that meet the needs of the modern marketplace through the use of specialised printing and design software. Impression and lithography technologies are popular in the printing industry because they allow for the production of high quality, high speed printed materials. More precisely, "impressing" is a printing process in which an image is transferred to paper using a heated roller to fuse toner from the image drum onto the surface of the paper. Laser printers and copiers use this type of printing.

“Lithography” is a printing process in which an image is transferred to a special plate made of stoneware and then transferred to a material to be printed (such as paper). This type of printing is used in printing houses and for the production of large runs of printed material.

To ensure high quality output, it is particularly important to define the customer’s proofing expectations, especially for pages and illustrations that can be labour-intensive due to their design. Reverse fonts and images, fine serifs, small multi-colour fonts and images, tables and borders, full-colour bars, full-bleed and die-cut backgrounds are all elements that can be difficult to print and cause quality problems. Printing problems may occur with sans serif fonts, thin serif fonts or small fonts due to inking problems. Printing problems can also be exacerbated with small images or multicoloured elements due to the need for precise ink delivery. If there are colour elements in the print material, it is important that the colours are reproduced accurately and without deviation, especially in the case of tables, borders or solid colour bars. Even the smallest error can have a significant impact on the quality of the product [23, p. 216].

In the printing industry, ICT also makes it easier to automate and manage processes. Companies can interact more effectively with suppliers and customers and allocate resources more efficiently through the use of specialised production, warehouse and logistics management software. ICT used in the printing industry also includes online platforms and electronic resources. They allow companies to promote their products, to carry out marketing campaigns and to attract new customers via the Internet. Electronic document management systems and the automation of ordering processes are also facilitated by e-platforms. Print quality control is another area where ICT plays an invaluable role in the printing industry. Modern technologies make it possible to visually inspect print quality. Small defects can be detected and eliminated, and variations in product quality can be reduced. Another important aspect supported by ICT is optimising the use of material resources. This has a direct impact on the company’s profitability by reducing waste and increasing productivity. ICT fosters innovative development in the printing industry. It contributes to improving the quality of products and expanding the capabilities of enterprises through the introduction of the latest printing technologies and the development of specialised software and hardware for printing [24]. In general, the use of ICT in the printing industry allows companies not only to maintain their competitiveness, but also to develop themselves, to expand their capabilities and to meet the requirements of the modern market.

On the corporatisation of the printing industry. Corporatisation is a way for companies to consolidate their operations for the purpose of larger projects and market expansion. Limited market capacity and lack of financial resources for large projects drive the need for consolidation.

Finding ways to improve business efficiency, finding promising areas for investment and expanding markets are the main motives for establishing corporations. A significant economic impact and sustainable business development can be achieved by bringing potential participants together in a corporation. Corporations can include different types of enterprises that complement each other and can offer advantages in terms of product quality, expanding markets and innovative technologies [25, p.67]. For example, a printing company may merge with a publishing company that has a highly skilled workforce and a stable market share. The aim is to develop together and secure competitive advantages. The integration of the members of the group implies the adherence to a common strategy and economic rules, the joint formation and use of resources. In the first stage of the merger, it is important to establish uniform economic rules for the members of the grouping, in particular regarding prices and paying for services.

Working with other companies may require new approaches to financing and payment, so payment policy is also important for the operation of the enterprise. Setting high standards and improving product quality can be achieved by centralising the quality management function within the enterprise. To ensure high standards and a positive image in the marketplace, improving the quality management system is also an important aspect of the enterprise’s activities. Higher product quality and performance can be achieved through the combined efforts of the members of the enterprise.

Enterprise development is complex and requires attention to detail. It is important to have in mind the importance of partnership and interaction between the participants in the achievement of common goals. There must be continuous improvement and adaptation of business strategies to changes in the market and customer needs.

Regarding the investments made by printing companies. In particular, the assessment of the investment attractiveness of an enterprise should include the comparison of the results of its measurement with the results of the measurement of the investment attractiveness of other enterprises or with the maximum possible value of the indicator, if it can be determined, in order to make a decision on the feasibility of the investment [26; 27].

ICT has a key role to play in enhancing the attractiveness of a printing company as an investment destination. The integration of ICT contributes to the improvement of a company’s internal processes, ensuring the efficient management of resources, the optimisation of production processes and the reduction of costs. Financial performance can be analysed, forecasts made and informed investment decisions made by using specialised software tools to manage investment activities.

The creation of digital platforms to attract investors is one of the main principles of increasing investment attractiveness through ICT. Online platforms help to increase investment and business development by allowing companies to present their capabilities and projects to a wide range of stakeholders. ICTs can also be used to

increase the transparency and accessibility of information about a company's investment opportunities, which is a factor in investor attraction.

The use of innovative technologies in the printing industry also has an impact on a company's investment attractiveness. A company can attract investors by demonstrating its willingness to innovate and develop through the use of modern printing equipment, continuous improvement of production processes and the introduction of the latest technologies.

The use of ICT in the financial management of a printing company helps to improve the processes of monitoring and analysing financial activities. This makes the company more attractive to potential investors. As a result, the reliability and stability of the company's financial position have an impact on its investment attractiveness.

Information and communication technologies also contribute to the development of electronic payment systems and financial services. This simplifies investment processes and cooperation with investors. The provision of convenient and secure communication with investors through the use of digital technologies contributes to the attraction of new investment and to the enhancement of the company's investment attractiveness.

Thus, by improving management efficiency, introducing innovative technologies and increasing financial transparency, the use of ICT in the printing industry enables companies to increase their investment attractiveness. New opportunities for attracting investment and stimulating economic growth in the printing industry are opening up with the development of information and communication technologies.

### CONCLUSIONS FROM THIS STUDY AND PROSPECTS FOR FURTHER RESEARCH IN THIS AREA

The printing industry is an important economic sector. It provides various types of printed products, including books, magazines, advertising materials and packaging. ICT is an increasingly important tool for improving the efficiency of the economic activities of printing companies in the modern world.

It should be noted that development is a continuous, irreversible and unique process that involves qualitative changes in the structure and functioning of the system in order to achieve the goals that have been set. This process is carried out by means of purposeful transformations that are constantly taking place and whose aim is the continuous improvement of the company's level of development. Managing a company requires a constant search for new areas to develop and implementing strategies aimed at achieving economic growth. In this context, information and communication technologies are an important tool that helps companies to optimise their internal processes, to increase their competitiveness and to achieve their strategic objectives. Companies can reach new levels of efficiency and compete successfully in the marketplace by integrating digital technologies into all areas of their business.

It is important to identify and implement a number of strategic directions in order to increase the efficiency of the economic activities of printing companies. The first one is the reorientation of the tasks of the management of the development of the printing companies in order to be able to ensure their competitiveness. This means the use of advanced technologies, the optimisation of processes and the improvement of customer interaction. Information and communication technologies, such as digital marketing strategies, online marketing and mobile applications, play a key role in this process. Defining development strategies for printing companies is the second area. This can include integrating with Europe, improving product quality, using ICT, innovating, extending productive links and addressing the issue of skilled labour. Optimising information, resources and organisational support for printing activities is the third aspect. This requires effective management of resources, analysing and structuring information, and motivating staff. ICT helps to ensure that all these processes are maintained at a high level. The fourth area is the diversification of printing companies' activities, which is a prerequisite for the introduction of the latest technologies and the use of ICT. This enables us to expand our product portfolio, increase production efficiency and improve customer contacts. The corporatisation of printing companies and the integration of ICT is the fifth aspect. This will have a positive impact on business consolidation, investment attraction and competitive advantage. Finally, investment attractiveness is enhanced by the use of ICT in the printing industry. It contributes to the optimisation of production processes, the reduction of costs and the acceleration of business development. In all of these areas, printing companies can become more competitive, more efficient and more successful in the marketplace.

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