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USING MODERN INFORMATION TECHNOLOGIES IN PUBLISHING

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Abstract
The article discusses the use of modern information technologies in the publishing process. It covers the development of computer systems in publishing, including the automation of processes for creating, editing, and publishing text and graphic materials. Special emphasis is placed on the role of Desktop Publishing (DTP) systems in increasing the efficiency of the publishing process. The article analyzes the integration of information technologies into publishing processes and their impact on improving modern printing processes. Innovations in the printing process and publication creation are also discussed.

Keywords: information technologies, modern publishing process, desktop publishing, computer systems, DTP, printing.

Introduction

The rapid development of modern information technologies and their widespread use in the publishing industry have significantly increased the efficiency and quality of publishing processes today. The implementation of computer systems in publishing provides the opportunity to automate the creation, editing, publishing, and distribution of text and graphic materials. In particular, advanced technologies such as Desktop Publishing (DTP) have become crucial in increasing the speed of publication production while maintaining the creation of high-quality products.

This article analyzes the significance of modern information technologies in the publishing industry, examining how they improve publishing processes and the impact of new technologies on production efficiency. Additionally, the article discusses the integration of information technologies into publishing processes, their role in enhancing printing processes, and the innovations that have emerged as a result.

Literature Review and Methodology

The research conducted by Shaposhnikov A.S. and Myakyshev S.L. on modern information technologies in the publishing industry presents significant achievements in improving the efficiency of the publishing process.In Shaposhnikov A.S.'s work (2010), the important aspects of using computer systems in publishing are discussed. According to him, the implementation of information technologies in the publishing process plays a crucial role in managing information flows and processing information quickly and efficiently. Shaposhnikov highlights the important role of computer technologies and software in the

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development of modern publishing systems.In Myakyshev S.L.'s work, the role of information technologies in publishing and their impact on the production process are analyzed. Myakyshev demonstrates how information technologies are integrated into all stages of the publishing process, from preparing the text to producing printed materials. In his work, Myakyshev also explores changes in the field of electronic publishing and distribution of publications via the internet, which plays a crucial role in reaching new audiences for publishers.

Analysis and Results

Publishing activity involves the process of preparing and distributing books, magazines, newspapers, brochures, and advertising materials. Today, information technologies, such as methods for recording, storing, processing, and transmitting data, play an important role in the publishing and printing industries. Currently, organizations and companies engaged in publishing and printing actively use computer hardware and various software to carry out their operations. Among the most widely used technologies in this field, Desktop Publishing (DTP) systems hold a special place.A desktop publishing system is a system consisting of a computer, software for creating and designing text, editing images, a scanner, and a printing device. In the past, equipment that required large spaces and numerous specialized experts has now been transformed into smaller, more convenient devices. The main advantage of this system is that it allows for the creation of publications directly on the computer screen in WYSIWYG ("What You See Is What You Get") mode.

It is important to highlight the unique features of Desktop Publishing Systems (DTP), as they differ significantly from standard text editors. Firstly, DTP systems offer a high level of automation in publishing processes. This includes layout design for pages and text paragraphs, organizing multi-page documents (using a special file structure), editing images, and applying typographic effects. Secondly, when importing text or images into the software, special filters are used to adapt files to layout requirements and system needs. Additionally, all functions available in text editors—such as searching, editing, or spell checking—are also present in DTP systems, where they operate more efficiently and reliably.

№	Years	Using modern information technologies in publishing
	1980s	The first Macintosh computers (Apple) appeared. Hercules introduced the first monitor that could display fonts.
	1985s	PageMaker was the first professional software designed for publishing.
	1987s	Adobe releases the first version of the PostScript language. Ventura Publisher (now owned by Corel) and QuarkXPress appear.
	1988s	Computers became capable of processing color images, and QMS produced the first color laser printer.
	1990s	Multimedia computers and scalable fonts became available.
	1991s	Photoshop version 2.00 introduced the ability to edit color images.

Table 1. Chronology of the Application and Development of Computer Technologies in the Publishing Industry.[1]

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In the early 1990s, multimedia computers and scalable fonts became available, and in 1991, version 2.00 of Photoshop was released, enabling color image editing. This not only simplified image processing, which is one of the most complex tasks in book publishing, but also made it easier to check spelling, grammar, and stylistic errors.

Today, in the desktop publishing (DTP) software market, PageMaker and QuarkXPress remain highly popular. PageMaker is no longer being developed (its final version is 7.0), while its competitor, InDesign, has undergone significant improvements and is rapidly evolving in the software market. Nevertheless, PageMaker still offers powerful tools for book design, a well-developed color processing mechanism, and a wide range of filters for importing and exporting text and graphic materials. Additionally, the software features scripting capabilities, which allow for the full automation of routine tasks across large volumes of pages.

The newer versions of InDesign are adapted for designing a wide range of document types. They support full-color printing and include newly introduced tools—for example, the software can automatically format imported data from various structured sources, including databases.

Almost all DTP (Desktop Publishing) systems support the preparation of Internet publications; however, their functionality is more limited compared to specialized web editors. Their main task is to create an electronic document in the required digital format, as closely as possible to the original version.

The modern publishing process consists of pre-press preparation and printing activities. The design or pre-press stage of a publication is carried out by publishing houses, while printing enterprises (such as printing presses, quick print companies, duplication laboratories, etc.) produce the required number of copies according to the specified design. In addition to traditional workflows, publishing houses today are increasingly operating as network publishers (or exclusively online).

Network publishing refers to a unique set of processes and technical tools used for creating various types of electronic content (text, graphics, audio, and video), managing access to and distribution of information, controlling content personalization processes, and supporting many other related functions.

In a network structure, professional publishers, graphic design bureaus, departmental publishers, technical providers, companies that offer intellectual and financial support, as well as consumers, are all involved. Network publishing is also delivered via websites or dedicated servers. Its distinguishing features include the distribution of publishing products through the network, a high level of interactivity for users, and rich, data-enhanced content.

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Figure1. Main Stages of the Publishing Process**.**

The first stage of the publishing process, as shown in Figure 1 above, involves the development of a creative concept. At this stage, the purpose of the publication and its target audience are clearly defined. The creative concept determines the overall style and design of the publication, as well as the harmony between text and images. When developing the concept, market analysis and audience needs are taken into consideration. The success of this stage ensures the proper functioning of all subsequent processes.

After the creative concept is developed, the second stage involves identifying technical capabilities. At this point, collaboration with a printing house (typography) is established, and technical specifications such as paper type and color printing options are assessed. For example, the type and quality of paper significantly influence the overall appearance of the publication and its durability over time. During this process, the technical resources and materials to be used in the preparation of the publication are determined.

Depending on the type of publication, different types of paper are selected. The quality, type, and thickness of the paper influence the appearance of the publication. For instance, soft and easy-to-read papers are used for books, while high-quality glossy papers are chosen for art publications. When selecting paper, its ecological cleanliness and other properties are also taken into account.

In text preparation, first, the texts are collected and then edited. During the editing process, spelling and punctuation errors are corrected, and the text is made clear and understandable. Before the design stage, the text is checked by professional editors. At this stage, the structure and content of the text are aligned with the concept.

Graphic materials are prepared, which include images, photos, and diagrams. Efforts are made to improve the quality of images, eliminate defects, such as retouching and cropping necessary parts. Graphic materials are prepared using special software and are ensured to be suitable for publication.

In the design and composition process, the text and graphic materials are integrated. The designer harmonizes the materials aesthetically at this stage, choosing their placement, colors, and fonts to ensure readability. The success of the design enhances the publication's readability and its impact on the user.

Once the design and composition are completed, the final version of the publication is reviewed by the editor. In this stage, errors in the text and design are identified and corrected. The editor checks the grammar, spelling, and style of the text, and rectifies any design errors. This process improves the overall quality of the publication.

The draft layout is the final form of the publication, prepared for submission to the printing press. At this stage, all text and graphic materials are integrated with high quality. The draft layout ensures the publication's print quality and is ready for the printing process.

In this phase, the prepared draft layout is sent to the printing press. The pre-press preparation process is completed, and all materials are ready for printing. The successful execution of this process determines the quality and timely release of the publication.

Conclusion

The use of modern information technologies, especially in the stages mentioned above, helps automate and streamline processes. Graphic design software, text editing tools, digital printing technologies, and other online platforms speed up the publishing process and allow for the quick creation of high-quality products. This not only saves time but also contributes to improving the quality of the publication.

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