**D.A. TSENOV ACADEMY OF ECONOMICS**
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# BUSINESS MODEL FOR COMPETITIVE OPEN SCIENCE

**ABSTRACT**

of a dissertation work for the award of an educational and scientific degree "doctor" in the field of higher education 3. Social, economic, and legal sciences
Professional field 3.8. Economics
Doctoral Programme „Application of Computing in Economics“

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*Prof. Krasimir Shishmanov, PhD*

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The dissertation was discussed and approved for defence pursuant to the Law on the Development of the Academic Staff and the Regulations for Its Implementation at D. A. Tsenov Academy of Economics – Svishtov by the Department of Business Informatics at the Faculty of Management and Marketing at D. A. Tsenov Academy of Economics – Svishtov. The author of the dissertation is a full-time doctoral student at the Department of Business Informatics at D. A. Tsenov Academy of Economics – Svishtov.

The dissertation consists of an introduction, three chapters, a conclusion, a list of references and appendices. It has 231 pages, main text – 163 pages, a conclusion – 3 pages, a list of references – 15 pages. The dissertation includes 8 tables and 24 figures. The list of references comprises a total of 148 literary sources in Cyrillic and Latin script.

The defence of the doctoral dissertation will be held on .....2024 at ..... in the Rectorate Conference Hall of D. A. Tsenov Academy of Economics – Svishtov.

All materials related to the defence are available on the internet page of D. A. Tsenov Academy of Economics – Svishtov.

## I. GENERAL CHARACTERISTICS OF THE DISSERTATION

### 1. Relevance of the topic

Scientific communication today is in electronic form and is developing in the world of digital communications, it is virtual, global, interactive, hypertextual, creative, which leads to strengthening the role of informal scientific communication.

Increased visibility of scientific research increased the rating of scientists, which leads to their confirmation in the scientific community, acceleration of academic development, etc.

The presence of Bulgarian scientific journals in Scopus and Web of Science is important for their visibility, citation and evaluation. Fast and adequate integration and adaptation is extremely important not only for survival, but also for raising the level of academic journals, aligning them with the requirements of Scopus and Web of Science.

The transition of a journal to the global databases and increasing its index requires the transformation of all business processes: planning, implementation of strategy, efforts of the whole team, consistent and purposeful actions.

Despite the constant study of the structure and quality of the information flow, the challenges related to the information support of scientific activity in Bulgarian universities, the issues of integration into the world scientific space remain practically unexplored.

### 2. Object and subject of the research

**The object** of research in the present work is the process of integration of Bulgarian scientific publications in the world scientific and information space.

**The subject** of the study is the adaptation of a scientific journal to Open Journal System (following the example of the "Business Management" journal).

### 3. Research thesis

The main research thesis of the dissertation is that Bulgarian scientific publications can be integrated into the world scientific and information space through an adaptive and open system that will help to improve the business processes related to the publication activity in a scientific journal. One of the approaches in this direction is the implementation of a web-based open source system for managing scientific journals (Open Journal System - OJS), developed by the Public Knowledge Project (PKP).

**4. Goals and tasks of the dissertation work**

The aim of the dissertation is to develop a strategy for adapting the business model of a scientific publication to the principles and requirements of the "Open Science" concept.

In connection with the implementation of the goal, the following research tasks are defined:

- *in a theoretical aspect:*

1. To analyze the essence and principles of the "Open Science" concept and the policies for the development of scientific research and scientific publications in Bulgaria, in conditions of globalization;

2. To research the peculiarities of the business models implemented in scientific publications;

- *in practical aspect:*

3. To define a strategy for the integration of a scientific publication in the world scientific and information space and to implement a web-based open source system for the management of scientific journals OJS.

4. To propose and systematize specific stages of adaptation of a scientific journal "Business Management" to a web-based open source system for managing scientific journals OJS.

5. The proposed strategy should be approved in a scientific journal "Business Management".

**5. Research methodology**

A number of scientific research methods and approaches were used in the dissertation research, including system analysis, comparative analysis, system approach, economic analysis, modeling method. In order to test the results of the scientific research, the methods and techniques of visualization and prototyping are used in the dissertation work.

The choice of methodologies in the present research is based on good practices for characterizing and framing concepts, in subsystems with complex integrity, implementing complex and multi-layered software solutions.

Functionalities, system and application characteristics, and good practices in the use of the environments subject to integration are researched through the method of systematic research.

Through the generalization method, a description of subsets of essential and possible integration functionalities is reached.

With methods of synthesis and binding, the information database and experimental approbation at the logical and physical level are designed.

Through methods of validation, significant positive aspects are presented when testing the theoretical and practical settings.

**6. Limiting parameters of the research**

The presented research is focused only on OJS and does not aim to cover all technologies, concepts, software models that can be used to implement a journal editorial system.

The study started in June 2021 and ran in two separate stages, from June 2021 to April 2022 and a second stage from April 2022 to the end of 2023 and does not affect changes in this area that occurred after the specified period.

In this dissertation, it is assumed as a limiting condition that the modeling and optimization of work or business processes based on the example of a scientific journal can be transferred relatively easily (to be valid) also in relation to other scientific journals in the given scientific organization , in this case Academy of Economics "D. A. Tsenov", Svishtov.

**Approbation**

The results of the research were reported and discussed at meetings of the "Business Informatics" department at the "D. A. Tsenov" Academy of Economics, at 9 international scientific conferences and forums in Georgia, Kazakhstan, Russia, Ukraine, incl. published in collections indexed in Scopus.

The methodology offers basic rules for practical application, as well as allowing for adaptation according to the specifics.

An author's approach is proposed - all processes, principles and critical moments in the current methodology have been empirically confirmed through the author's experience and adapted for the purposes of the current development. All the recommendations in the presented methodology are the result of a symbiosis of the above principles. The proposed author's method has been tested experimentally. The main results of the research have been implemented in the research work of "D. A. Tsenov" Academy of Economics, Svishto,v on a test server and will be implemented on an academic server.

The separation of stages in the research is related to the acceptance of the journal "Business Management" in Scopus and the naturally occurring necessary changes related to this indexation. The idea to develop a pilot model for the use of electronic open journal systems in a scientific journal, precisely using the journal "Business Management" as a model, preceded the inclusion of this very journal in Scopus, but it turned out to be a well-chosen prospect.

## II. STRUCTURE OF THE DISSERTATION

### 1. General description

The dissertation consists of 231 pages, of which 173 are main text, with 24 figures and 8 tables. Structurally, it includes an introduction, an exposition in three chapters, a conclusion, 8 appendices and a list of 148 literary and internet sources used (40 in Bulgarian).

A declaration of originality and authenticity is attached.

### 2. Contents of the dissertation

**Introduction**

Abbreviations and notations used

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List of tables

**Chapter One. Open science and the challenges to scientific activity in conditions of a transforming economy**

1.1. Exploring the impact of the Open Science initiative on the sharing of scientific resources

1.2. Challenges in Open Access publishing and intellectual property protection.

1.3. Systems for scientific electronic libraries, institutional repositories, electronic archives. Electronic journal systems

1.3.1. Electronic libraries, institutional repositories, electronic archives

1.3.2. Electronic journal systems

1.4. Unification and identification of scientists and scientific publications

1.4.1. Unification and identification of scientific publications

1.4.2. Formation of a publication profile of the scientific organization and scientists in the scientific networks

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**Chapter two. Building a scientific journal business model**

2.1. Business idea, business model and business strategy

2.1.1. Business models related to competition and company prosperity

2.1.2. The process of submitting and publishing an article in a scientific journal as a business model

2.2. Business strategy, roadmap, milestones as an element of strategy

2.3. Transition to a new business model

2.3.1. Preparation for transition to a new business model

2.3.2. Preparation and adaptation of a business model

**Chapter Three. Development of the business model based on the example of the "Business Management" journal**

3.1. Implementation of a business model of "Business Management" journal

3.2. Research methodology and stages of implementation

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3.1.5. Summary stage

3.1.6. Perspective stage

3.1.7. Conclusions and perspectives for further research

3.3. Experimental stage. Installation and technologies

3.4. Defining functions and roles

3.5. Setting up and operating the system. Statistical data

**Conclusion**

**Bibliography**

**Applications**

Declaration of originality and authenticity

## II. BRIEF EXPOSITION OF THE DISSERTATION

The **first chapter** examines the aspects, problems and challenges facing the scientific community in conditions of a transforming economy; the systems for scientific electronic libraries, institutional repositories, electronic archives, electronic journal systems are researched; unification and identification of scientists and scientific publications.

Paragraph one explores the impact of the Open Science Initiative on the sharing of scientific resources.

The pursuit of open science, the impact of the initiative of the world scientific community, which encompasses various movements aimed at sharing all kinds of resources in the field of science, confronts scientists, scientific organizations, the state and society with new challenges in conditions of a transforming economy.

**Open science** is often an umbrella term that includes various actions aimed at removing barriers to sharing any kind of output, resources, methods and tools, at every stage of the scientific research process: open access to publications, open research data, open source software, open collaboration, open peer review, open research notebook, open educational resources, open monographs, citizen science, and research crowdfunding are defined as the main features of open science.

Open science refers to efforts to make the results of publicly funded research more widely available in digital format to the scientific community, the business sector, or society at large.

Paragraph two of the dissertation explores and analyzes the challenges of Open Access publishing and intellectual property protection.

The European Commission allows the reuse of most of its content, and in February 2019 established the application of two of the Creative Commons licenses to its content by default.

Creative Commons public licenses are a standard set of terms that creators and other rights holders can use to make available original works of authorship and other materials that are protected by copyright and certain other rights specified in the text of the public license. Creative Commons licenses are a standard way for content creators to grant others permission to use their works.

Paragraph three explores online repositories and archives that offer the possibility to store, access, use and reuse research and scientific inputs and outputs (both articles and datasets) and accelerate the transfer of knowledge between researchers and between scientific fields, opening new ways of collaboration and new research methods (Force11, 2012).

Despite the encouragement to create open access repositories, the Directory of Open Access Repositories (OpenDOAR; http://v2.sherpa.ac.uk/opendoar/) has information on only eleven Bulgarian institutional repositories, one of them is of the "D. A. Tsenov" Academy of Economics, available at http://dlib.uni-svishtov.bg/

Electronic Open Journal Systems (EOJS) can be considered as open source software platforms that provide organization and decentralized remote management of the full cycle of the editorial and publishing process of electronic scientific journals, namely supporting submission, reviewing, stylistic correction, layout and publication of

articles with their subsequent storage, distribution and indexing on the Internet (Luparenko, 2017).

Examples of completed EOJS most commonly used in the scientific community in the 2000s are: Epublishing Toolkit (2002–2003), GAPworks (2006), SOPS (SciX Open Publishing Services) (2002–2004), Topaz, DiVA (Digitala Vetenskapliga Arkivet) (2000), Érudit, DpubS (Digital Publishing System) (2004), E-Journal (2006), Ambra, Open Journal Systems (OJS) (2002).

Since 2002, the Open Journal System (OJS) software platform, the result of the initiative of the Public Knowledge Project (University of British Columbia), has been successfully developed. OJS is freely distributed open source software and is distributed under the GNU General Public License (GNU project).

OJS covers all aspects of online journal publishing, from creating a journal website to operational tasks such as the author submission process, peer review, editing, publishing, archiving and indexing of the journal. OJS supports the entire process of journal activities, including monitoring the work of editors, reviewers, and authors, informing readers, and assisting with correspondence.

It is flexible and scalable, with the ability to be used for multiple journals, with each journal having its own URL. Both existing journals can be ported to the OJS platform, i.e. to create electronic versions as well as to create a new scientific journal.

OJS may allow a single editor to manage all activities of the journal and the journal website, or OJS may support an international team of editors with different responsibilities for multiple sections of the journal.

The many functionalities of OJS constitute a powerful tool to support publishing, which, together with its ease of use, affordability and popularity, allows not only the operational publication of scientific results, but also facilitates its dissemination to the global scientific community.

The transition to an automated publishing platform such as OJS or similar, entails a radical change in the entire editorial-publishing process, from article submission through all stages of review and editing to final acceptance and publication.

Assigning a unique digital identifier DOI (Digital Object Identifier) to each article increases the "visibility" of the article and gives unique information about the article, as well as about other associated attributes (metadata) in a structured form. The assignment of numerical indicators for the purpose of identification of scientific publications is the subject of paragraph four.

ORCID is a scholarly identification registry independent of majors, professional interests and national boundaries.

Assigning a unique identifier to each author - ORCID ID (Open Researcher and Contributor ID) enables, in addition to uniqueness, to connect with the scientometric

databases Scopus and Web of Science, as well as with other systems for identifying scientists.

The digital identifiers of scientists - ResearcherID, Scopus ID, Google Scholar enable the promotion of scientists and all structural subdivisions of the Higher Education Institution.

Registration and availability of the DOI of the articles and indicating the ORCID ID of the authors is an indicator of a high scientific level of the publication and the published articles.

In paragraph five of the first chapter, the Policies for the development and validation of scientific research in Bulgaria are presented.

One of the characteristics of the educational institution is its constant financial support from the state, which ensures and regulates active scientific activity. In recent years, the Ministry of Education and Science in Bulgaria has been paying more and more attention to the development of science in Bulgaria by introducing new processes and introducing funding, which should stimulate the activation of the work of the research sphere. Opportunities for the growth of academic data are gradually being provided, and thanks to this, Bulgarian universities are showing dynamic results in their research activities.

The basis for Bulgaria's integration into the global scientometric space is the adoption of normative documents that establish the basic principles and rules for conducting scientific activity, as well as financial instruments that stimulate scientists to disseminate the results of such activity in the international scientific community.

The scientific community in conditions of globalization and competitive environment is faced with many problems and challenges.

Each university strives to increase its rating, through objective data to quantify the publication activity of scientists, including good results in Scopus and WoS. The main problems in this evaluation are the insufficient number of Bulgarian journals indexed in Scopus1 and Web of Science. At the end of 2023, the reference shows a total number of 187, 117 of which active, of which 6 anthologies and 111 scientific journals. There are 70 inactive scientific journals and collections.

There are 68 of them in Scopus alone, as the journal "Business Management" already appears under number 387 (RIBD ID). There are 83 active journals in Web of Science.

To solve the problem of insufficient representation of the publications of scientists in Bulgaria in international scientometric databases in conditions of globalization and a competitive environment, the following are necessary:

[1] The reference is from the NACID website

- Creation of institutional repositories and electronic archives.

- Unification and identification of scientists and scientific publications.

- Policies for the development and validation of scientific research in Bulgaria.

- An active campaign for familiarization with scientometric systems and indicators.

- Registration in the scientific networks, and stimulating the maintenance of the profiles of the scientists and the scientific organizations themselves.

The **second chapter** is related to building and adapting a business model of a scientific journal.

Paragraph one examines business models related to competition and company prosperity.

There are many definitions of business model and business strategy, and the relationship between them. Based on the system approach, the business model interacts with various management tools: business idea, business plan, business strategy, business project.

We accept the definition of a business idea as: "an idea and intention of an individual for actions in a certain economic system with the aim of generating income" (Pavlov, 2011).

The Osterwalder's definition of a business model can be accepted as the most comprehensive: "a business model serves as a diagram that shows how an organization works, it transforms the company's strategic goals into a simplified model that clearly shows the functions of the business and can be used as a blueprint upon which it can be structured' (Osterwalder, 2004).

When defining the specific business model, the set of features that define the content of this term can be quite broad. The individual elements of the business model must be in sync, the dynamics between them is important. A business model is a system whose various characteristics interact to determine the company's success.

Summarizing the various aspects, we believe that **the business model is the result of creativity in the generation of a business idea, a plan that reveals the logic of company management, the elements and activities in a specific organizational system, the set of functions, and describes the way of creating value in the realization of this business idea.** [2]

The business model is closely related to the strategy, but it is not identical to the strategy.

[2] Proposed by the dissertation author

Strategy is the identification of the various methods a company uses to gain a long-term advantage over its competitors.

In his book "Competitive Strategy", Michael Porter presents **three** types of general strategies aimed at increasing competitiveness:

1) **leadership in cost reduction** - the company keeps costs lower than those of its competitors.

2) **differentiation** - to offer something unique in its own way.

3) **focusing** (special attention) on specific market segments: a certain group of customers, a certain part of the product or on a certain geographical market.

A company that wants to create a competitive advantage for itself must make strategic choices in order not to lose its image.

On this basis, a management decision is made to concentrate on the activities that are carriers of the competitive advantage and their maintenance and development in the future.

The most widespread is **the first model**, which can be achieved in only one way - by establishing an effective cost structure, while differentiation can be achieved in different ways.

The main strategies that we emphasize in this case are: diversification and focus (following the guidelines of the Ministry of Education and Culture to the requirements of Scopus).

**Differentiation through innovation** is taken as focusing on design, usability, personalized services. Adopting the differentiation method is an effective strategy for attracting customers (eg, offering authors a scientific journal indexed in Scopus). By developing a positive brand image, long-term loyalty from customers (article authors) is achieved.

The types of business models can be classified in different ways depending on the objectives pursued. The detailed study of the possible models related to competition and company prosperity showed that the following are applicable in this case:

- Porter's 5 forces
- Value creation chain according to Porter;
- Canvas adapted
- CCC (customer, company, competitor)

Porter's models are based on the idea in the study of the competitiveness of companies and nations (Porter, 1985; Porter, 1990) and the understanding that a company is successful only when machines, people, money are arranged in processes,

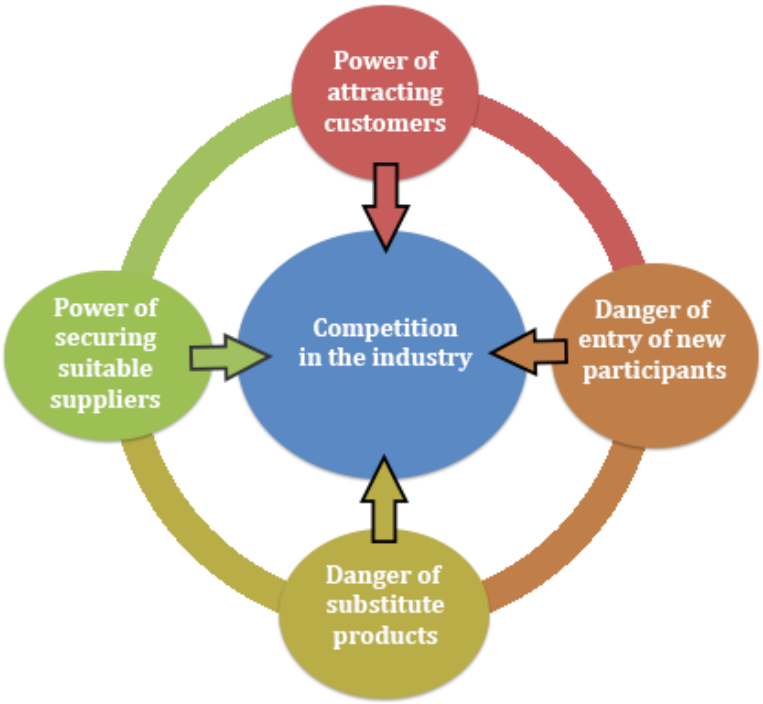
systems and activities, in one ecosystem for which the customer is willing to pay a certain price.

**Value chain** analysis helps to reveal, other things being equal, which are the internal factors in the company that can serve as a basis for the formation of a competitive advantage. The value chain proposed by Porter in a modern environment is evolving and moving from the linear management model to a network model that reflects network connections (Pil Frits K & Matthias Holweg, 2006), in this case developing the main components of the model: target, procedural, evaluative and effective components. Porter developed the **five forces analysis** (Fig. 1.) as a more rigorous version of the widely used SWOT analysis.

The framework focuses on the level of competition in an industry to assess a company's strategic position. Unlike a SWOT analysis, the five forces examine the business environment rather than examining the specific company itself. Along with PEST analysis, it touches more deeply on the O's (Opportunities) and T's (Threats) in SWOT.

Competitive strategy is defined as taking defensive or offensive actions to create a defensible position in the industry in order to successfully interact with the five market forces to extract the desired return on the firm's investment (Porter, 1980).

**Fig .1.** Porter's Five forces model / **Five competitive forces analysis**




ALeaving aside the details, the biggest and most important difference between competitive strategies boils down to whether a company aims to capture a large or small

market share, or whether the competitive advantage it pursues is related to achieving a low cost base or product distinction (Todorov, 2022).

Based on these criteria, Porter presents his famous concept of the **five competitive strategies**:

1. Strategy based on low costs - intended for a wide range of customers.

2. A strategy based on broad differentiation - seeks to **distinguish the product** compared to competing companies in order to reach a wide range of customers.

3. A strategy based on optimal value for money - offers customers more value for the price.

4. A strategy based on focus through low cost (or niche market) to concentrate on a small segment of buyers, overcoming the competition, by serving niche customers at a lower price than that of the competition.

5. A strategy based on focus through product differentiation (or niche market) - concentrates on distinguishing a small segment of buyers, overcoming the competition, by offering niche customers products specially tailored for them.

Usually, each business organization develops and adopts its own business model. Typically, the components of the model determine the value proposition to the customer and the pricing mechanism, as well as the structure of the supply chain (Todorov, 2022).

M. Porter's scientific research is perceived with great interest, because the so-called **"Porter's diamond"** or "Porter's rhombus" makes it possible to apply it in all spheres to identify products or services and industries that have a leading role in competitiveness between nations and regions.

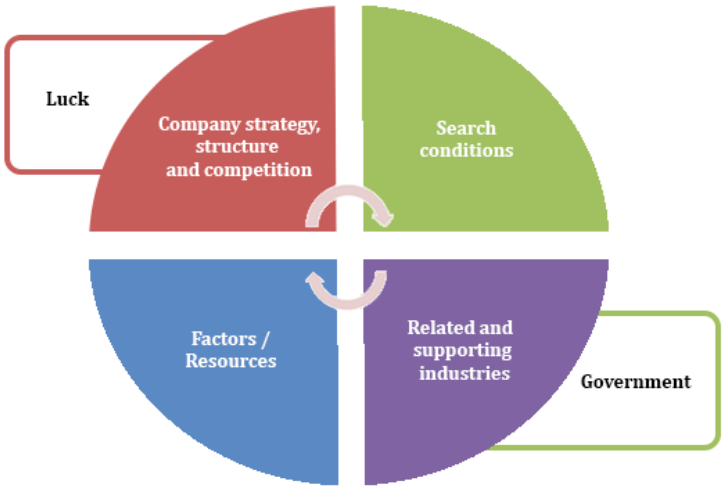



**Fig.2.** Porter's diamond (adapted by the author)

Porter's diamond (fig. 2.) is a self-organizing system, the components of which can be analyzed separately, but they are interconnected, and the development of one will always directly affect another.

This is a scheme in which the microeconomic indicators that influence the development of an economic unit are linked so that it is more competitive. The idea was originally conceived as a developing country method, but Porter realized that it was applicable to companies and small areas such as regions or communities.

The idea of Alexander Osterwalder and Yves Pigneur's for **Business Model Canvas (BMC)** is that a business model can be best described by nine basic building blocks: customer segments; customer-oriented value propositions; sales channels; customer relations; key resources; key activities; key partners; revenue streams; cost structure.

Although the Business Model Canvas plays a vital role in the creation and successful execution of a business model, the underlying factors and key attributes related to the Business Model Canvas are often overlooked in a journal publishing business model.

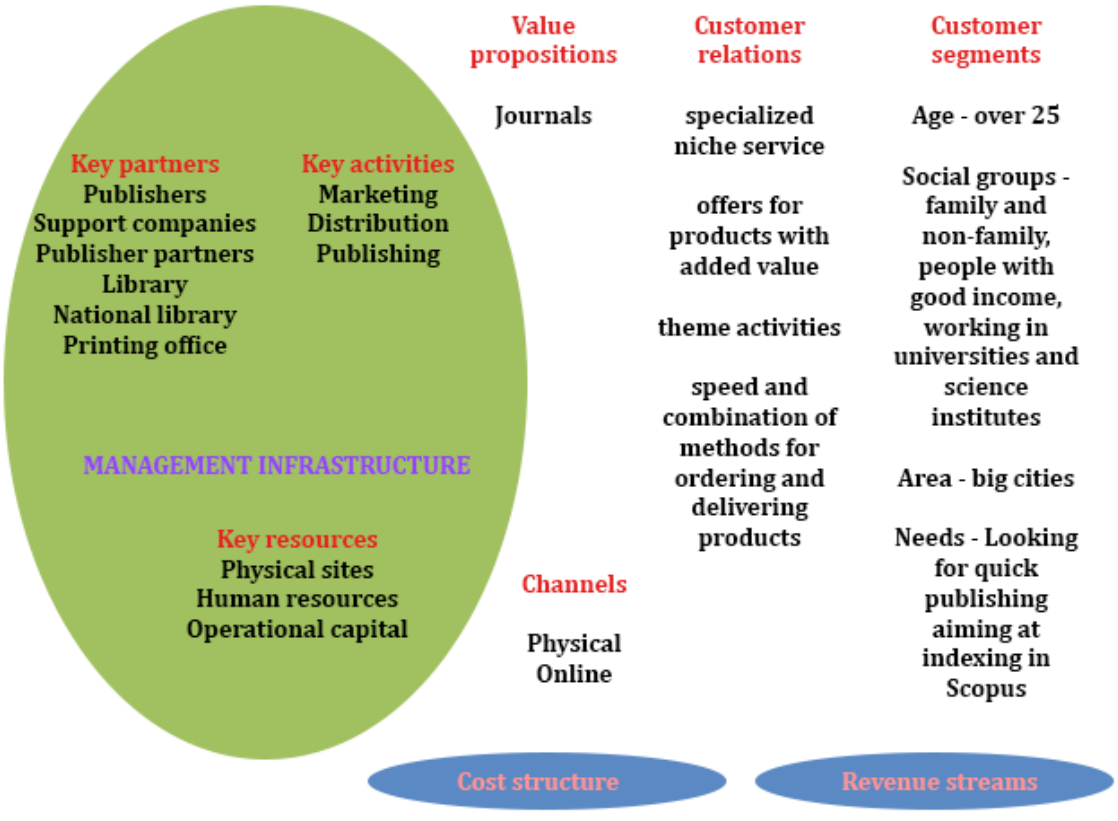



**Fig.3.** Business Model Canvas blocks (adapted by *https://next.canvanizer.com)*

*Source: https://next.canvanizer.com/demo/platform-design-canvas*

The nine blocks (Fig.3.) cover the four main areas of business: customers, supply, infrastructure and financial viability.

The first three define the management infrastructure (key partners, key activities, key resources). The key activities are problem solving, in the case of a service business model. They are the most important to make the business model work. Each of the elements influences the others, with the customer segment and the value proposition leading the way.

These interrelationships of the building blocks are presented in Figure 4 – the key partners provide inputs for the implementation of the key activities, but these activities rely on the key resources for their implementation. The value proposition, on the other hand, depends on the products and services that then derive from the key activities – this value proposition is then distributed to the customer through the distribution channels, but the customer who first receives the proposition must be segmented, to ensure that the right products and services are distributed to the right customer. The relationship with the customer must be maintained to encourage customer retention, which is also associated with more revenue. If all these building blocks are active, it would mean incurring costs throughout the process. One cannot isolate the building blocks to make a business model a connected concept.

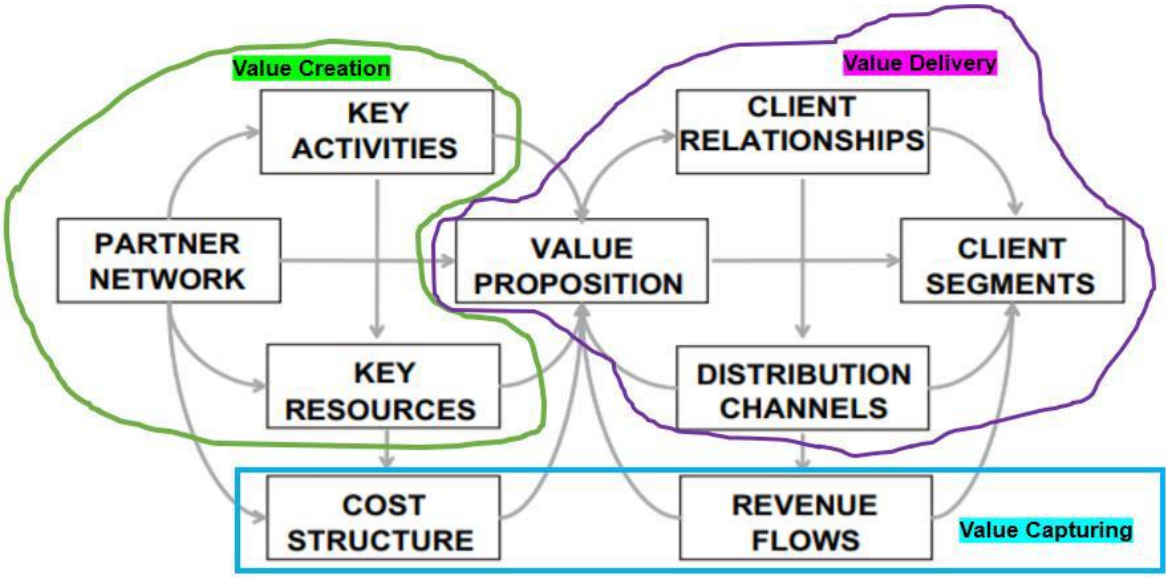



**Fig. 4.** Osterwalder's concept and business model relationships

*Source: adapted by Chesbrough, 2010:359*

As a rule of thumb, always start with the target users (and the value that will be delivered to them). A segment may not be attractive or may be added.

It is important to identify the customers, their requirements and their needs to provide targeted products and/or services, in our case: quality publication, in a rating

journal with IR, regular publication, transparency. Customers in our case are the authors of posts. Reaching readers through various channels is more about promoting and attracting future authors.

**Customer relationship**

This component of BMC has an important role in terms of not only creating strong customer relationships but also retaining them. Omnichannel access includes customer support across a range of platforms, and facilitates customers regardless of their demographics.

It continues with a **value proposition** - what real value is provided to the target consumers. Characteristics: novelty, effectiveness, customization, "Gets the job done", design, brand/condition, price, cost reduction, risk reduction, affordability, convenience/applicability, etc.

**Value proposition** is the component that includes everything related to providing high-quality products and services to customers, which actually helps in attracting more customers. With magazines, a value proposition assures customers that the products and services provided to them are of high quality compared to those offered by its competitors. This corresponds to the strict requirements of Scopus and WoS to determine exactly what is provided, in what way, under what conditions, and not least – how well the stated promises are kept in terms of time and quality.

**Key resources**

For a business model to work, key resources play a vital role. These are the assets every business model needs. Through them, value propositions are generated. A company's business model shows the type and amount of resources that are used by the company.

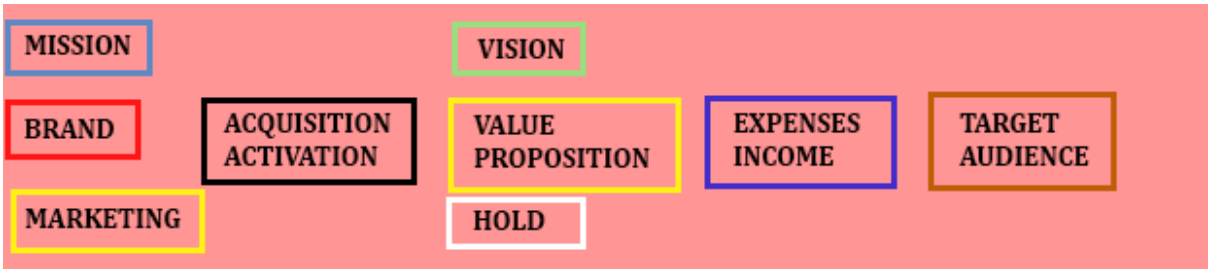



**Fig. 5.** Blocks of Business Model Canvas for digital marketing

Source: https://next.canvanizer.com/demo/digital-marketing-canvas

In the business spectrum, this component determines the type of materials, equipment, personnel, etc.

The adaptation of the business model (customer segments; value proposition; channels; customer relationships; revenue streams; key resources; key activities; key

partnerships; cost structure) allows to propose different options for the nine blocks of the Business Model Canvas, which to discuss with management.

**Revenue streams**

This BMC component focuses on what revenue a company earns from the company's individual customer segments. This component serves as a key component for customer-centric business models. It is vital to identify this component as money, and it is equally important that the revenue streams are clearly defined.

When discussing the income that a journal can realize, one must take into account the ownership of the journal, whose management in a state university does not have legal independence and is not authorized to make financial decisions. It is reasonable, and a certain financially measurable business approach is applied in scientific publications, especially those that have received the status of rating publications and entered the world scientometric databases. Achieving a certain level of quality also implies paying for that quality, recognized in the case of inclusion in Scopus. By introducing the OJS and optimizing the organizational-management structure, the recommendations of the Scopus experts are also implemented, which suggests considering the adoption of a certain publication fee.

Following the experience of leading journals, and this does not correspond to a compromise in the quality of the scientific publication, a fee can also be offered to speed up the review and publication process. Some journals also set a maximum number of pages for an article, which, if exceeded, incurs an additional fee. Such a model is also adopted in the acceptance and publication of articles in conference proceedings, again mostly indexed in the world scientometric databases.

The business model is not static. It must be nurtured, optimized and developed in order to remain competitive.

It is important to consider the fact that soon traditional business models may not help in this specific area, nor a hybrid model focused on certain components can promise successful revenue growth due to the interconnected behavior of business components, requirements and customer needs. An **optimal business model** designed for the scientific journal needs to be designed, which can include various components while providing flexibility of focus to help publishers stay in the market. Nevertheless, changing a business model or innovating it requires certain capabilities, such as adaptability and flexibility in decision-making. Business perspective also plays a vital role in making key decisions for a company. Creating or designing a business model cannot provide a guarantee of success, instead it requires research, discovery, adaptation, review and development until the so-called optimal business model is reached.

**Cost structure**

The costs are not technological, they are mainly administrative. There is an editor and deputy editor-in-chief who manage the editorial workflow, peer review and ethical oversight of the journal. Editors don't get paid, but they oversee the process and make sure it goes well. There is a part-time administrator and two computer programmers who manage the platform. So the biggest expense is full-time employees, if any.

There are copy costs, and essentially the costs are exactly the same as in a print environment: there are first copy costs and then processing costs.

**Economic effect**

There are different ways to analyze the business sustainability of any company, they may involve either answering some simple questions based on different core business activities or a detailed analysis of the business model. The first may include:

1. Identification of key stakeholders, i.e. profiling (differentiation) of interested parties.

2. Competition in market capture in terms of customer focus i.e. context mapping.

3. What drives or can make customers loyal, i.e. "main distribution".

4. How revenue will be generated

The applied Business Model Canvas is oriented towards the options for an online platform (Fig. 3) and digital marketing (Fig. 5).

The distribution of the key elements of BMC helps to cope with the market competition as these elements play a vital role in the smooth running of the business. This business model helps in focusing on the key areas to take a significant place in the market surrounded by competitors.

Each of the components is analyzed to highlight strengths and weaknesses in terms of successful business management. Each individual component plays a vital role in understanding a company's business model closely and effectively. It is important to know how these BMC components affect the success of a company while using a business model.

**The competitive triangle / the three Cs** (customer, company, competitor) reflects the fact of perception by the consumer of the value offered to him by a specific company and its main competitor. As an element of competitive advantage between the two companies, each of the elements of the primary or auxiliary activities, as well as the synergistic effect of their combination, can be accepted.

In business, companies often seek to adopt the approach of **business models portfolio** in order to improve efficiency. This is a relatively new approach in modern business strategies and includes, in addition to improving business models, the discovery of interactions and the creation of new business models.

The publishing process is a relatively standardized process, and with slight nuances, in general it includes the following main stages:

- Submission of an article according to the requirements and according to the template of the journal;
- Check for formal compliance by the editors; ethical standards
- Check for uniqueness (anti-plagiarism);
- Referral to reviewers;
- Editing the article according to the comments of the reviewers;
- Referral to spelling and style editing after acceptance of the article;
- Publishing.

Each of these stages contains a sequence of other processes, mostly operational, part of the internal processes.

Follows the current issue processing, generation, publication, offering immediate open or time-delayed access, according to accepted journal policy.

The articles are stored with the complete archive of submitted electronic materials, in the archive of the e-edition.

Slack and Lewis point out two important features of the operating model:

- It does not respect conventional functional boundaries – the operational model resembles an operational strategy, but applied to all functions and across the entire territory of the organization.
- There is a clear overlap between the business model and operational model realms. The main difference compared to the business model is that the operational model focuses more on how the overall business strategy is to be achieved.

Analyzing the operational model, Prof. Dr. Krasimir Todorov points out the fundamental difference between the business model and the operational model: "although to some extent the two models overlap, in terms of transparency they differ significantly". The business model is the visible part of the business that reveals the company's competitive position, it is presented to customers, it is usually published as part of the corporate strategy, but the operating model is the "secret competitive weapon" of the organization.

The operating model is the "know-how" of each company, which makes each company different from competitors, it is an answer to the question "how" the goal is reached in the overall business strategy, i.e. how the internal processes in the organization are organized in its way (action plan, road map) for becoming a competitive and effective player in the market.

Although these business models are expected to have more similarities within similar industry settings, when the model is broken down into its various parts, it turns

out to be very different in nature. These models are complex and very vulnerable to external and internal unexpected changes, and the variables that are susceptible to change must constantly be adjusted and updated in order for the firm to remain competitive.

The stages in the development of a journal in scientific organizations in Bulgaria, in accordance with the regulations (ZRAS, PZRAS) are usually the following:

- Submission/Approval in the National Reference List

- Submission/Approval for funding under the "Scientific Periodicals" program - as an assessment of good quality and achieved results (https://fni.bg)

- Submission/Approval for ERUHPlus.

- Application for indexation in Scopus/WoS (and inclusion in the NACID list of refereed and indexed journals[3] - https://randii.nacid.bg).

Approval for Scopus/WoS is most relevant at the moment, not only in Bulgaria, but also all over the world. Many universities provide dedicated funding for publication in peer-reviewed journals, including differentiated fee payments according to the quartile4 of the scientific journal.

This is a new direction in the scientific activity of universities, which must be approached methodically, but also strategically, in order to have results and possibly success in indexing, mainly in Scopus and Web of Science.

The specificity of publishing, as well as the publication of a specialized scientific publication, whose model and rating depends directly on its rating in Scopus, imposes new standards, some of them difficult to perceive, especially given the routine and sometimes conservatism in scientific publishing. Many years of hard work are usually invested in the promotion and selection of quality scientific articles to maintain a competitive scientific journal recognized among scientists. But before it gets to the list of Scopus and Web of Science, it is still not attractive enough, especially for foreign authors. A vicious circle is created - there is no interest because it is not in Scopus, and it is not in Scopus because there are not enough quality articles.

However, the acceptance of a scientific journal in the prestigious databases still requires a lot of effort, not only to maintain the standard, but also to improve the processes of acceptance and review, especially those related to ethical norms and transparency. Usually, the confirmation of admission to one of the prestigious scientometric databases is also accompanied by additional recommendations, which it is desirable to follow, given the constant monitoring.

[3] List of modern Bulgarian scientific publications, referenced and indexed in world-famous scientific information databases

[4] Scopus and Web of science are Q1-Q4

From this moment, the scientific journal moves to another level – it becomes sought after and attractive, and the efforts that were invested in advertising and popularization should be redirected to maintaining the level, selecting better quality articles and, above all, improving the internal processes.

The management goal of the journal has now been modified: to stay in Scopus and increase its rating; to increase the quality of the articles, to refine the selection, to monitor the ratio of authors, affiliation, etc.; citation of articles from different authors/organizations/countries. The quality and rating of the scientific journal is measured by its recognition in the world's scientometric bases.

The form of representation of the business model and the level of its detail are determined by the objectives of the modeling and the adopted point of view.

The research provides insight into how focusing on different BMC components can actually shift the business objective. Nevertheless, it highlights various components of BMC and their detailed objects and provides better individual understanding regarding the same. Business model analysis brings the BMC structure together with customer analytics as well as operational data. When these are combined, this research can be used to connect strategic insights on how to improve customer loyalty, retain, as well as grow in the market and sustain that growth.

**In paragraph 2.** Business Strategy, Roadmap and Stages, as an element of the strategy, the research is presented, which started in June 2021 and took place in two independent stages, from June 2021 to April 2022 and a second stage from April 2022 to the end of 2023.

The phasing is related to the acceptance of the journal "Business Management" into Scopus and the naturally occurring necessary changes related to this indexation. The idea to develop a pilot model for the use of electronic open journal systems in a scientific journal, precisely using the journal "Business Management" as a model, preceded the inclusion of this very journal in Scopus, but it turned out to be a well-chosen prospect.

The research methodology is based on a desk study. Basic tools in the analysis are logic and the systematic arrangement of empirical information. Inductive and deductive approaches have been applied to the study of the main work processes.

Additional data was collected from various secondary sources to enrich the primary data collected. A content analysis was performed to gain insights into the aim and objectives of the study.

For this purpose, a roadmap was created (Table 1. and Table 2), which includes the two separate stages with planned activities. The roadmap represents the planned division of resources in a specific time period in the implementation of the business idea.

**Table 1.** First stage of roadmap

| **FIRST STAGE**<br>**Analysis and evaluation of ongoing work processes** (June 2021 to April 2022) | |
|---|---|
| **ACTIVITIES** | **EXPECTED RESULTS** |
| A. Study of basic work processes. The activity includes gathering information about the work processes, about their legal regulation, about the organization, the people responsible, the deadlines and the document flow related to their implementation;<br>B. Assessment of administrative capacity to service work processes.<br>C. Identify areas for improvement of core work processes. Based on the research / monitoring, an assessment of the administrative capacity will be made and areas where improvements are needed will be identified in relation to the changes. | A. Prepare an analysis of the main work processes and identify areas of non-compliance with the requirement of effectiveness, efficiency and expediency;<br>B. The preparation of recommendations and a plan for improving basic work processes; |

Resource: author's development

In the activities of development and implementation of the platform, the need to include an analysis of the internal administrative processes in the scientific journal was outlined. After analyzing the legal framework and assessing the need, specific recommendations have been drawn up to overcome possible inconsistencies. The analysis includes the description of the work processes in their current state, as well as recommendations for their improvement. Within the framework of the activity, the needs for integrations of the platform with external information systems and the internal systems of the Academy of Economics and ensuring data exchange, review, tracking, control, validation and analysis of incoming and processed information, as well as the possibility of communication with external systems at national and international level. As a result of the analysis, a model is proposed, following good design and interaction practices.

**Table. 2.** Second stage of the proposed Roadmap

| **SECOND STAGE: Preparation of the functional analysis (April 2022 – December 2023)** | |
|---|---|
| **ACTIVITIES** | **EXPECTED RESULTS** |
| Analysis of the current state with regard to the relevance of the functions, the effectiveness and the efficiency of the activity, on the basis of which conclusions are formulated about the respective strengths and weaknesses. The analysis of the current situation starts with a study of documents and information and carrying out a desk study. These two methods were implemented in parallel over time. Based on the results of document and information analysis, key issues and areas are defined, which will | A. Identify **areas for improvement** based on the findings and conclusions of the analysis of the current state, good practices from our own and from other countries. Based on the findings and conclusions about the current state, the main areas for improvement are outlined. |

| | |
|---|---|
| be further refined based on focus group and/or observations. Through an expert assessment, the main findings and conclusions about strengths and weaknesses, relevance of functions, effectiveness and efficiency of the activity will be drawn.<br>The analysis of the relevance of the functions includes: identification of the areas, grouping of the functions of the responsible; identifying the functions of the departments and sectors related to the activity; analysis of the horizontal and vertical arrangement of the functions of the internal units and the organizational structuring of the internal units themselves, the presence of fully or partially duplicated functions; systematization of findings: strengths (accomplishments) and weaknesses (weaknesses and/or unused opportunities).<br>Performance analysis includes the following basic steps: identification and analysis of the mission and vision of the university structure; findings: strengths (accomplishments); weaknesses (weaknesses and/or unused opportunities).<br>The efficiency analysis includes the following basic steps: clarifying the indicators that the administration uses to measure the results of the activity, the resources used and the efficiency (the ratio between results and costs). The indicators that will be identified will be for: the results of the activity; the resources used; efficacy assessment;<br>Summary of current state analysis results. The current state analysis will conclude with systematized findings and conclusions regarding the relevance of the functions, effectiveness, efficiency and economy of the organizational structure. | Areas of improvement will focus on:<br>the relevance of functions;<br>the organizational structure;<br>the functions of internal units;<br>the effectiveness of the activity of the administrative structure: strategic planning; performance management; the fulfillment of the set goals;<br>the efficiency and economy of the activity of the administrative structure: improvement of the achieved results; improving the use of financial and human resources; optimizing the ratio between achieved results and used resources.<br><br>B. Formulation of **specific recommendations** for improvement of the relevant identified areas.<br>Suggestions for improvement will be formulated as specific opportunities aimed at improving the performance of functions, organizational structure, effectiveness, efficiency and economy.<br>Depending on the findings and conclusions drawn from the analysis of the current state and the identified areas for improvement, proposals for improvements will be made regarding: the relevance of the functions; the effectiveness of the activity; the efficiency and economy of the activity. |
| | |

Source: author's development

Paragraph 3. Transition to a new business model examines the overall change in already established procedures and work rules, including preparation for transition to a new business model, as well as preparation and adaptation of a business model for a scientific journal.

An important stage on the road to indexing of any scientific journal is the implementation of reliable, freely distributed, standardized software that realizes the

concept of open access to research results and provides an opportunity to increase the readership of any electronic scientific publication worldwide.

During the first stage (June 2021 to April 2022), measures have been taken to implement the Scopus recommendations, with the main efforts aimed at improvement in the following areas:

- strengthening peer review and editorial management;

- as indicators of the rigor of peer review and quality management of published content, the dates on which it was received, revised, accepted and published should be indicated in each article.

- strengthening the editorial team with established scholars from abroad in the field of economics and management, with experience in publishing in Scopus, as well as recognition and citation.

- signing a license agreement with Scopus to access content.

This is also the first step towards optimization of the business model and introduction of new requirements, corresponding to the aspiration not only to preserve the recognized status, but also targeted development, to the specific percentiles in Scopus.

In the second stage (April 2022 - December 2023), the structure and quality of the information flow in the periodicals in the Academy of Economics "D.A. Tsenov" in Svishtov are studied. Achieving the specific goal: compliance with Scopus criteria goes through optimizing business processes as well as internal procedures.

After researching and analyzing the functionalities of OJS, its flexibility and scalability, the possibilities of implementing the software and the possibility of using it for several journals, it was moved to develop and implement the pilot model to be implemented first for the journal “Business Management”.

The integration of "Business Management", and subsequently the other scientific periodicals of the Academy in the global scientific and information space, the transition to an automated publishing platform such as OJS or similar will lead to a radical change in the entire editorial-publishing process, from submitting the article through all review and editing stages until final acceptance and publication.

The business model offers the procedure for introducing a scientific journal into an Internet-based system for service, maintenance and management of electronic publications using OJS. It allows tracking the review and editing process of each submitted article until final publication.

Business process management implies dividing the activity into separate business processes, each process having its own diagram of the tasks to be performed. Each task has its own independent goal, but combined in a business process, the tasks work together to achieve the goal of the entire process. Business processes can cover every

single aspect of employee work, and accordingly, every single aspect of employee work can be tracked later.

A deployment plan is created, which continues with configuring the software according to the requirements laid out in the deployment plan. After training the operational staff, management and the editorial board for work, the start of real work with the software and a certain period of monitoring its work in real conditions follows.

The procedural component of the model describes seven stages of the procedure for implementing an electronic scientific journal using OJS: predictive, organizational, technical and technological, preparatory, practical, generalizing and prospective.

An organization chart was developed, as a projection of the elements of the business model in the sections of the road map.

Findings and Results: Value creation, specifically the business model building block of key activities and value delivery, as well as the business model building block of customer relationships, are business model areas undergoing the greatest transformation among the cases: 1) some technologies alone can enable managers to influence the creation and delivery of value in an integrated, rather than linear, way along the company's value chain. 2) managers combine more than one digital technology to transform the business model. Furthermore, the process of digital technology adoption and business model transformation faces various internal barriers such as lack of leadership, skills and poor change management and external barriers such as policy frameworks and regulations.

Originality/Value: A Business Model Canvas is applied to explore the concept of business model transformation resulting from the adoption of additional digital technologies beyond the nine cited in this research.

The transition to a new model meeting the criteria for inclusion in the prestigious databases requires a complete change in the already established, usually for the printed version of the magazine, procedure and work rules. From the analysis of the current state to the implementation of a new digital strategy, the best digital transformation is aimed at.

Achieving the specific goal: compliance with Scopus criteria goes through optimizing business processes as well as internal procedures. The implementation of online platforms, developed individually for a specific journal or using OJS lead to a fundamental change - from linear to network business models. Technologies do not change business, but change business processes, they build ecosystems by making all participants in the process interact with each other.

In this case, the user (author) does not measure the value himself, but accepts the assessment of the national requirements (resp. Scopus and WoS). Scopus and WoS evaluation teams are also users. Evaluation by evaluation teams follows standardized

procedures. However, this leads to improvements in the organization, following the Scopus / WoS acceptance criteria, and then maintaining these standards and refining each activity.

Developing a business model helps to structure information about the company, identify strengths and weaknesses and build a development strategy. Each team member easily sees both their place and the interrelationship with everyone else. This enables easy and fast interaction, flexibility, proposals for amendments that are innovative.

The introduction of publishing software (mainly for automation and tracking of the review process) is not only a technological solution, it leads to the change and optimization of business processes, changing the existing one and moving to a new business model.

The proposed business model, along with an implementation of the OJS technology model, develops and builds on Porter's linear value chain model, moving to a network model, business process collaboration, data storage, sharing and analysis, changing customer behavior and suppliers, as well as the organization of all network connectivity of this process.

The transition to OJS is a digital transformation that enables managers to strategize and coordinate operations, tracking the review and editing process of every single submitted article through to final publication.

Achieving efficiency requires synchronization of all involved in the process, creating a single ecosystem working to achieve the common goal, resulting from the transition from the analog to the digital era.

Our approach is to define a business model focused on internal processes. In this business model, publishing a journal represents a complex system of objects, processes, rules for carrying out specific activities, a development strategy, as well as criteria for evaluating the effectiveness of the system's functioning.

In the third chapter, **"Development of the business model based on the example of the journal "Business Management"**, the sequence of developing the business model based on the example of the journal "Business Management", the research methodology and stages of implementation are presented. Functions and roles, installation and technologies are defined.

The business model explores and proposes the procedure for introducing a scientific journal into an Internet-based system for service, maintenance and management of electronic publications using OJS, based on the example of the scientific journal "Business Management" of Academy of Economics "D.A. Tsenov".

The idea that became necessary is not only to develop a conceptual model, but to implement it in practice, to apply it to a specific scientific journal, and to make the implemented OJS the main platform for all scientific publications of Academy of

Economics "D.A. Tsenov". The pilot model of the "Business Management" scientific journal, developed and implemented on the Academy's server, is expected to become the model on which other journals will be implemented in practice.

The domestic and foreign experience in the use of electronic open journal systems was studied, as well as the evaluation in terms of software and technical and functional characteristics, service characteristics, maintenance and support. This made it possible to determine and choose a software platform that would satisfy the available financial and technical resources of the specific scientific institution.

The software chosen for construction and adaptation is Open Journal Systems (OJS), one that many editorial offices of academic journals implement (in Bulgaria 22, of which 5 are indexed in Scopus). The advantages are that it is easy to install and use, to adopt appropriate data replication, editing, archiving and publishing policies, and its functionalities are a powerful tool to support publishing.

The business model applied during the creation of the online platform is adapted according to the "Business Model Canvas", as a tool for strategic planning and analysis, and is in the context of the coordination of the strategy for the respective organization.

To achieve the goal of the research, there was an analysis of scientific, methodological and technical literature, normative and legal basis, standards regarding the functioning of electronic journals, international standards for research ethics and editorial and publishing ethics, open archive sites, institutional repositories, scientific libraries and journals, abstract and scientometric databases, online services that provide statistics on the use of the site, as well as social and professional electronic networks. The research is also the result of domestic and foreign practical experience of using systems for electronic open journals for information support of scientific and educational activities and own experience in creating and implementing OJS for the journal "Business Management".

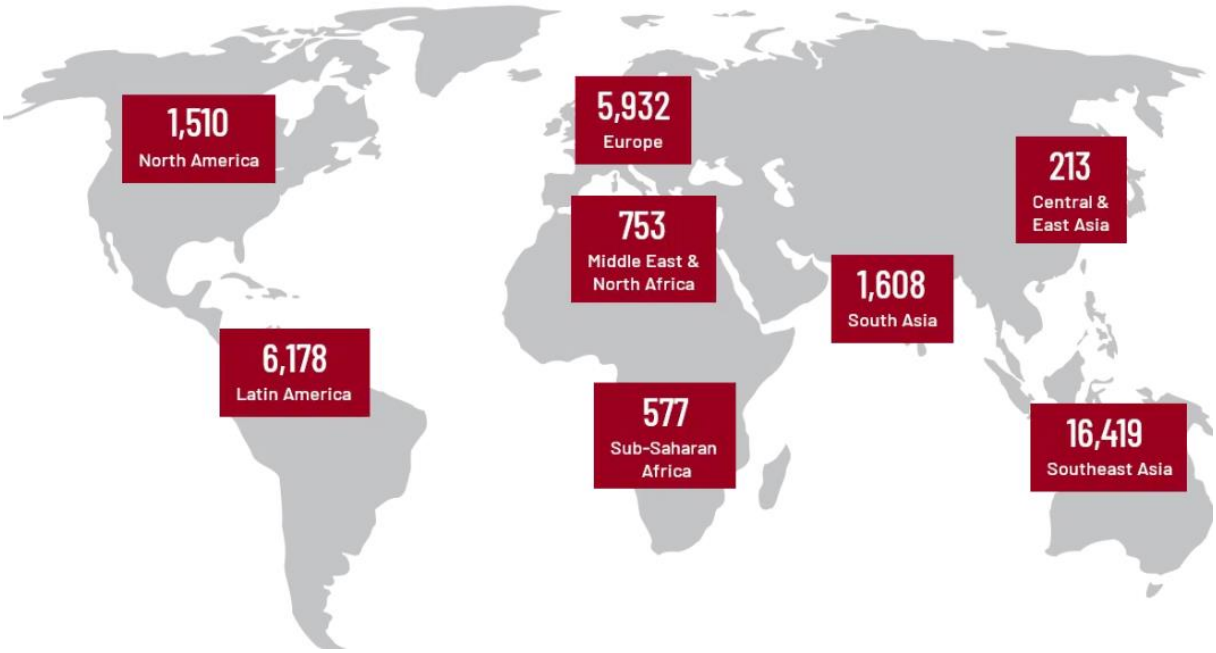



**Fig.6.** OJS installations

*Source:* PKP software

The business model, which is associated not so much with a new technological discovery and not so much with a technological novelty, as, for example, the transition to a new electronic platform for serving the process of publication and review, leads to a change of the existing business model and the confirmation of a new one.

In paragraph 3.2. *Research methodology and stages of implementation* describes the procedure for implementing an electronic scientific journal as an algorithm for implementing an ordered set of administrative-management and organizational measures and actions necessary to solve the task of creating and maintaining an electronic scientific publication on the software platform of defined open journaling system.

To determine the stages of implementation of an electronic scientific periodical using Open Journal Systems, an adapted version of the study (Quint-Rapoport, 2010) is applied, where seven main stages of formation of the institutional repository of the higher educational institution are distinguished: predictive , preparatory, organizational, technical and technological, practical, generalizing and progressive. The developed procedural component of the model adapts these seven stages and defines a procedure for the implementation of an electronic scientific journal with the help of OJS, realized in the following six stages: organizational-dispositional, preparatory, technological, practical, generalizing and progressive. Follows a specification of the content of activities at the level of a scientific institution at each stage of the electronic journal implementation procedure.

The overall adaptation and transition to OJS undoubtedly requires a complete change of the current rules and the adoption of new rules for organizing, reviewing and publishing scientific articles. On the basis of the defined structure, the real activities enabling the system management are implemented.

The conducted research allows to define the concept of "procedure for introducing an electronic scientific journal using electronic open journal systems" and to describe the content of the activity at each of its stages. The effectiveness of the proposed procedure is confirmed on the example of a scientific journal "Business Management", and the editing and publishing process of this journal is fully adapted with the help of OJS, which makes it possible to apply advanced global publishing standards, form new publishing policies, decentralize the duties of each editor, authors and expand the readership of the publication worldwide.

During the first stage of the Roadmap, the processes of acceptance, publication, issue of a journal are analyzed. The analysis showed a centralized approach to the periodicals, but at the same time a high degree of fragmentation of the processes, accompanied by frequent changes in the organizational collaborators of the periodicals.

Of particular importance is writing down and confirming hierarchical relationships and responsibilities. This allows to avoid duplication of activities and processes, as well as to facilitate the entire process of publishing the magazine.

In the process of the research, the need for the preparation of a register was outlined, in which each step would be reflected, in order to trace the changes. This also means to determine the direct responsible person who has the right to confirm, resp. allow transition to specific actions (or algorithm) before confirmation. In addition, structured change information in one place supports reporting and analysis. Everyone involved in the process should be familiar with it and instructed, and everyone should know their responsibilities - clearly spelled out.

This allows full traceability and control of processes, as well as optimization of financial, material and human resources.

An important stage is to determine the role of the university library in the process of integrating the documentary scientific resources of the Academy in the global scientific and information space.

Interaction with periodicals, indexing, archiving are processes that are yet to be analyzed in detail. The functions of the collaborators directly related to the paper edition in the printing base and the publishing complex, as well as the generation of the published issues in PDF, are to be defined. This includes prepress and layout processes, proofreader, printing.

The creation of an algorithm for automatic periodic data backup on an independent server (PKP Preservation Network) and maintenance of resources by the

administrators of an information department is an important stage to be analyzed and optimized. The PKP Preservation Network for digital preservation of OJS journals and the LOCKSS program offers decentralized and distributed storage, hassle-free permanent access and preservation of the authentic original version of the content. Magazines that are not part of another digital storage service (such as CLOCKSS or Portico) can be saved for long-term access.

In paragraph 3.3. Experimental stage. Installation and Technology presents the business model implemented for a scientific journal "Business Management" together with an adaptation of the OJS technology model, such as an integrated network model, business process collaboration, data storage, sharing and analysis, customer behavior change and suppliers, as well as the organization of all network connectivity of this process.

The adapted software is installed in a working version and presented to the main participants in the process. There is also planning for digital marketing, as well as adding all the technical documentation.

The following paragraphs of the third chapter 3.4. *Defining functions and roles* and 3.5. *Setting up and working with the system*, consider and analyze the main editorial tasks related to the acceptance of manuscripts, their review, literary editing, metadata processing, layout, publishing and dealing with users, are performed by the editorial staff, which may include the editor-in-chief, section editors, literary editors of all supported publishing languages, layout editor, proofreader, subscription manager, as well as editors responsible for further archiving, indexing, distribution and promotion of published content. In the editorial offices of small publications, one employee may be assigned to perform several of the above duties at the same time.

For the successful implementation of the project, a basic step-by-step program for the introduction of the electronic scientific journal has been developed, in which the scope of responsibilities and tasks of each of the participants in the process is regulated, the conditions for their implementation, the schedule for checking the work done and reporting are outlined.

After the initial installation of the system, there are predefined roles, standard for the work of most scientific organizations and journals. The organization can work with these predefined roles if they are consistent with its internal organization and rules, or change them and add new roles.

For each created role, it is possible to choose which of the stages in the process of publishing an article it has rights to - submit, review, edit, publish.

For each user of the system, their names, username and password, which will be used to log in to the system, email address and role must be entered. There are also additional fields that are recommended to be filled in for each user so that the

information is as detailed as possible - website, ORCID ID, phone, scientific organization, biography. Detailed instructions are in the Methodological recommendations for using a pilot model of electronic scientific publication on the Open Journal Systems platform (appendices 5 and 6).

Any database, no matter how unified, implies development and improvement, introduction of new structures, updating of existing ones, change in the scope of objects, new relative relations, etc.

In the specific case, the system is developed only in English, given the opening to international authors and reviewers, with the aim of unifying the process of submitting, tracking, reviewing articles for the journal.

When creating the design of the site, a layout as close as possible in terms of structure and design to the accepted design of the printed edition and the existing electronic version of the scientific journal was sought.

Since the system provides ready-made functionality for a journal - display the current issue, display a list of issues, display a list of publications in each issue, archive of the journal, details of each article with the metadata set, what remains is to edit the HTML and the CSS code so that the public site has a nice design matching the design of the magazine.

It is also possible to add your own static pages with additional information, such as Code of Ethics, Aims and Scope, Open Access Policy, in which the necessary information can be added.

Another possible improvement is in the design of the details page for each publication, separating the authors of the publication in a highlighted field and dividing the content into two columns, one containing the main metadata - DOI, keywords, JEL Classifications, abstract, and in the right column is a link to a PDF file for downloading the publication, date of publication, how to cite in other publications, license and in which issue it was published.


**Fig. 7.** Sample view of an article published in the journal

To provide further informational and analytical monitoring of the functioning of the electronic scientific publication based on Open Journal Systems, the site administrator must connect a number of internal statistical modules that will provide various data on the state of use of the resource and allow the generation of reports for the number of received, reviewed, accepted and rejected manuscripts, the number of published articles and issues, the number of registered users (authors, readers), views and readability of articles and the status of subscriptions.

A branched hierarchy of user access levels is implemented in Open Journal Systems, which allows to flexibly distribute or consolidate editorial tasks among users, as well as to limit their access to different parts of the system, in accordance with expected characteristics of the editorial process. Because a single OJS installation can support multiple logs, users can be registered in different roles to more than one log on the same site.

By default, visitors to the journal are allowed to register themselves as a reader, author and/or reviewer. However, if necessary, the Manager can disable this feature and personally enroll users in the desired role upon request.

## CONCLUSIONS

*The concept of free, open access to scientific information leads to a radical change in the traditional scheme of dissemination of scientific knowledge.*

The organization and conduct of scientific activities in the modern information society is changing radically, ICTs form new mechanisms of interaction in the scientific community.

*The transition to an automated publishing platform like OJS leads to a radical change in the entire editorial-publishing process, from the submission of the article through all stages of review and editing to final acceptance and publication.*

At the same time, in the research, competitiveness is understood as a form of organization and offering services to satisfy the real needs of scientists in order to increase the rating of the scientist and the scientific organization.

The dissertation examines the problem of using electronic open journal systems in scientific journals, with the aim of updating in response to the requirements of scientometric databases; identifies opportunities for adapting foreign experience in the field of entrepreneurship development in scientific activity in Bulgarian practice and develops appropriate recommendations, identifies problems and obstacles in the existing system for stimulating the development of scientific activity in Bulgaria.

Through the implementation of OJS, the main research thesis of the dissertation has been proven, that Bulgarian scientific publications can be integrated into the world scientific and information space through an adaptable and open system that will help to improve the business processes related to the publication activity in a scientific journal.

After being accepted into Scopus, the journal automatically moves to another level – the demand is now greater than the supply. Its quality and rating is measured by its recognition in the world's scientometric databases. The efforts that have been invested in advertising and promotion should be redirected to maintaining the level, selecting better quality articles and, above all, improving internal processes.

The integration of "Business Management", and subsequently the other periodicals of the Academy in the world scientific and information space, the transition to an automated publishing platform such as OJS or similar leads to a radical change in the entire editorial-publishing process, from submitting the article through all stages of review and editing until final acceptance and publication.

In this case, the user (author) does not measure the value himself, but accepts the assessment of the national requirements (resp. Scopus and WoS). Evaluation teams in Scopus and WoS, which follow standardized procedures, are also users. However, this leads to improvements in the organization, first following the Scopus / WoS acceptance criteria, and then maintaining these standards, as well as refining internal processes.

**Applicability and utility**

Not only the popularization, but also the future implementation of various aspects and individual components of the particular system is a real possibility. The proposed functional model of the application is universal within a university.

The modeling and optimization of work or business processes based on the example of a scientific journal can be transferred relatively easily (to be valid) also in relation to other scientific journals in the given scientific organization, in this case "D.A. Tsenov" Academy of Economics, Svishtov.

In accordance with the goal and set tasks of the dissertation research, the following main results were obtained:

1. the essence and principles of the "Open Science" concept and the policies for the development of scientific research and scientific publications in Bulgaria in conditions of globalization are analyzed;

2. the peculiarities of the business models implemented in the scientific publications were researched;

3. a strategy is defined for the integration of a scientific publication in the world scientific and information space and implementation of OJS;

4. specific stages of adaptation of the scientific journal "Business Management" to OJS have been proposed and systematized;

5. the proposed strategy has been approbated in a scientific journal "Business Management".

6. the conceptual and terminological apparatus of the research is clarified; the experience of using OJS in the local and international scientific and educational space is summarized; the programmatic, technical and functional characteristics of OJS were analyzed in order to select appropriate means to support scientific research; an organizational model for using OJS in scientific research and a procedure for introducing an electronic scientific journal using OJS are developed.

7. The work gives the author's vision of the essence of the concept of "business model".

8. The stages in the development of a scientific journal from the point of view of acceptance and recognition in the Bulgarian and world scientific space are defined.

9. A software prototype was developed based on the one proposed universal, functional model in order to establish the success and applicability of the model.

10. prepared recommendations for researchers to find, send, review and edit scientific articles in the electronic scientific journal, which works on the basis of Open Journal Systems;

11. the design of the site was developed, its technical support was provided, as well as related functional and statistical modules for the purpose of additional informational and analytical monitoring.

In the conclusion of the dissertation, problem areas are formulated, in which possible new functionality is explored in detail.

We have been guided by the concept of free, open access to scientific information, which leads to a radical change in the traditional scheme of dissemination of scientific knowledge. Network informal communication between scientists and the pursuit of open access to scientific knowledge leads to the establishment of new conditions of intellectual interaction between scientists in their joint research work.

The results of the conducted research are the basis for the following conclusions:

1. Systems for electronic open journals should be understood as open source software platforms that provide organization and decentralized remote management of the full cycle of the process of editing and publishing electronic scientific journals, namely, support for the processes of submission, review, literature editing, proofreading, layout and publication of articles and their further storage, distribution and indexing on the Internet.

2. As a result of the analysis of characteristics such as a) initial data and information for technical support and project support; b) software and technical features and characteristics of the service; c) functional characteristics, the use of the Open Journal Systems software platform is recommended.

3. It is expedient to use OJS in the process of scientific research according to the developed organizational model, which consists of objective, procedural, evaluation and result components.

Based on the results of the research, recommendations were developed for the academic staff to implement the editorial-publishing process using OJS. Emphasis is directed in a more detailed description which provides the integration relations.

Despite the good potential of the Academy in the development of scientific activity, the stability of the development of scientific journals depends on their development and integration into a single organizational structure.

The results of implementing an open science business model directly impact:

1. for scientists: visibility; trust; citability; financing; network connectivity.

2. for academic and research organizations: funding; quality; cost effectiveness; speeding up the research process; interdisciplinarity; education and qualification.

Open access facilitates interdisciplinary research by providing information and discovering opportunities to more easily connect scientists from different disciplines. Searched information is acquired faster through text and data mining technologies.

The scientific results obtained during the research can be applied in the activities of the Academy of Economics, Ministry of Education and Culture, as well as other departments and organizations.

It is proposed to develop a mechanism for the promotion of scientific research activity, to invest in the development of human capital, as well as in the establishment of a "Publishing Council" at "D.A. Tsenov" Academy of Economics, which will coordinate the policies of the Academy in scientific activity and all scientific publications (journals, collections, monographs).

The materials from the dissertation research can be used in the process of training doctoral students and in the preparation of specialists from economic and management specialties at the Academy. They can serve as a basis for the implementation and maintenance of electronic scientific journals of scientific institutions and higher education institutions.

## IV. DISSERTATION CONTRIBUTIONS REFERENCE

The theoretical and practical significance of the work and its main contributions are expressed in the following:

1. An in-depth analysis of a problem business area is conducted and problems that can be solved by software technologies are identified.

2. Modern software platforms have been studied and an optimal option for successful implementation has been proposed.

3. Universal, functional models of a web application processing data in real time are proposed, which can be used as a basis for the development of a software application serving the needs of a scientific publishing house / journal and largely solving their technological problems.

4. developed and described method for using electronic open journals;

A software prototype was developed based on the proposed universal, functional model in order to establish the success and applicability of the model. By the time the research was completed, the prototype had been running for more than six months successfully in a production environment with minimal maintenance.

*Note:* The conceptual and physical implementation of the main ideas laid down in the dissertation research have found real approval in the Academy of Economics "D. A. Tsenov":

## V. LIST OF DISSERTATION PUBLICATIONS

Шишманов, Кр., Александров, М. (2023). *Бизнес модел за адаптация на списание и преход към автоматизирана издателска платформа OJS.* Учим управлять и учимся управлять: Восьмой сб. науч. тр. / Кузбас. гос. технический ун-том. Т. Ф. Горбачева; сост. и науч. ред. К.В. Востриков. – Кемерово: Кемерово. гос. тех. ун-т. им. Т. Ф. Горбачева, 2023. – 393 с. 21 февраля 2023 г. Кемерово, с.6-16

Шишманов, Кр., Александров, М. (2022). *Интегриране на българските научни периодични издания в световното научно и информационно пространство: проблеми и предстоящи решения.* Учим управлять и учимся управлять: Восьмой сб. науч. тр. / Кузбас. гос. технический ун-том. Т. Ф. Горбачева; сост. и науч. ред. К.В. Востриков. – Кемерово: Кемерово. гос. тех. ун-т. им. Т. Ф. Горбачева, 2022. – 305 с. 24 февраля 2022 г. Кемерово, с.5-14

Aleksandrov, M. (2022). *Strategy for building and adapting a journal model through OJS.* Proceedings of the VI International Conference on Sustainable Transport System and Maritime Logistics. ISBN 978-9941-492-80-8, pp. 29-32 p.

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