

AREAS FOR IMPROVEMENT OF BUSINESS MODELS OF INDUSTRIAL ENTERPRISES IN THE CONDITIONS OF DIGITAL TRANSFORMATIONS

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Abstract

The article provides the analysis of the features of economic business models and the suggestions for their improvement. The O. Osterwalder and Y. Pigneur's business model was further developed in terms of expanding its structural elements and highlighting the "Technology" block, which allows to specify the business digitalisation processes (which are necessary in modern business conditions) as well as to present an integrated structure of interconnected components, clearly demonstrate the directions and types of changes of the existing business model and more clearly define the competitive advantages of the enterprise in the market. Possible software products for automating business processes of industrial enterprises are identified.

Keywords: communication business processes, industrial enterprises, digital transformation, software programs.

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1. Introduction

In the conditions of fierce competition, the "partial (local)" improvement of activity will not provide the stable position in the market and obtaining planned profit for modern domestic industrial enterprises. Strategically justified dramatic changes are necessary and they should be proactive. At the stage of implementing the complete business digitalization, it is necessary to change the organizational structure of enterprise management, to develop or customize a new business model for its own specific features.

Such scientists investigated issues of developing effective business models as Zudbinova (2014), Ivashchenko (2017), Revutska (2002), Ryabykina (2014), Sachynska (2015), Anthony, Johnson, Sinfield & Altman (2018), Skryl (2016), Soolyate (2010), Strekalova (2009), Frolova & Kravchenko (2012) and other. But the issue of implementing the specific structural elements into existing business models to meet new market requirements, in our opinion, remains insufficiently

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studied and requires further scientific justification.

The purpose of the article is to determine the areas for improving the business models of industrial enterprises in the context of business digitization. The following tasks are formulated in accordance with the purpose:

- to study the existing business models,
- to justify the suggestion for improving business models in terms of implementing digital technologies into the activities of industrial enterprises,
- to identify possible software products for their automation of business processes of industrial enterprises.

Critical analysis of information sources, methods of analysis, synthesis and generalization were used to achieve the objectives of the study.

2. The improvement of the O. Osterwalder and Y.Pigneur's business model

Now the most common business models are the models developed by Slywotzky (2006), Chesbrough et al. (2005), Johnson, Christensen & Kagermann (2009), Schweizer (2007), Osterwalder and Pigneur (2012) and other.

In particular, in his book "Value Migration" of Slywotzky (2006) – the managing director of the international consulting company Mercer Management Consulting –notes that in order to create a successful business model, a number of important decisions should be made in different dimensions. He believes that it is necessary to select those elements that will meet the priorities of consumers and to fit them properly – then the whole model will function as a whole. The basis of any business model is a set of basic provisions on the consumer and business economy, namely:

1. Highlighting key points that answer the questions: How do consumers change? What are their priorities? What are the key factors for profit generation in my business?
2. Determining the elements that are the most consistent with the priorities of consumers by blocks:
 - 2.1. Consumer choice.
 - 2.2. Coverage.
 - 2.3. Differentiation.
 - 2.4. Retention of created value.
3. The decision how the company will satisfy the abovementioned needs and gain profits by blocks:
 - 3.1. Procurement system.
 - 3.2. Manufacturing/operations system.

- 3.3. Demand for capital.
- 3.4. System of research and product development.
- 3.5. Organizational model.
- 3.6. Market-entry mechanisms.

Despite the fact that Slywotzky notes that while generating a business model within the abovementioned dimensions, some of them are more important, but the importance of the use of technological solutions remains outside his attention. This aspect, in our opinion, requires additional scientific research.

Johnson, Christensen and Kagermann (2009) propose to consider the business model as a combination of four interlocking elements or submodels that taken together create and deliver the value to consumers:

1. Customer value proposition (key consumers, the need to be satisfied; company offer).
2. Profit formula (revenue model; cost structure; margin model, resource velocity).
3. Key resources (personnel; technology, products; equipment; information; supply chains; partnerships, alliances, etc.).
4. Key processes (processes, rules, norms).

This business model is fully focused on ensuring the valuable needs of consumers in a more efficient way than that of competitors, but at the same time, it focuses the activity of enterprise on key processes (item 4). The latter, in our opinion, are to be supplemented and expanded in terms of considering communication business processes as specific ones, on the one hand, and key ones for globalized markets, on the other hand.

Osterwalder and Pigneur (2009) suggested the business model which takes into account four elements of above mentioned model and complemented it. It consists of nine blocks:

1. Key partners.
2. Key types of activities.
3. Key values.
4. Relationships with clients.
5. Customer segments.
6. Cost structure.
7. Key resources.
8. Channels.
9. Revenue flows.

These blocks take into account the modern needs of implementing digital business transformations to a greater extent than in the previous model. In

general, the advantages of using the considered models are their simplicity (accessibility for understanding), complexity (consistency of structural elements) and visibility (the managers of all levels better perceive schemes).

Taking into account the positive experience in implementing the abovementioned business models, we consider it necessary to improve existing activity business models while implementing digital technologies at the domestic industrial enterprises. Without diminishing the importance of the Osterwalder and Pigneur's suggestions, we propose to supplement their model with the "Technology" block, which, in our opinion, is essential for the effectiveness of the company and cannot be added or considered within the existing blocks.

Let us consider the expanded model of Osterwalder & Pigneur by case study of digitalization of communication business processes of industrial enterprises (figure 1):

1) "Key partners" of enterprise business now include the software development companies;

2) "Key types of activities" include all fields where the digitalisation of business processes can take place:

- document management,
- management,
- marketing,
- finances,
- manufacturing,
- quality management,
- external communication, etc;

3) "Key values" except existing advantages include the following:

- quality communications,
- reduction in the duration of business processes (time saving),
- increasing the level of enterprise management efficiency
- reducing the influence of "human factor" on the communications

quality;

4) "Relationships with clients" should comply with modern requirements:

- on-line consultation "24/7",
- maintaining relationships with consumers using a wide range of modern information and communication technology (including via mobile devices);

5) "Customer segments" can be expanded due to the markets globalization;

- 6) “Cost structure” expands due to the costs of:
 - new software,
 - new information and communication technology;
- 7) “Key resources” are used more effectively due to:
 - saving time on communications through automation and reducing the duration of business processes,
 - increase the efficiency of human resource involvement;
- 8) “Technologies” covers software (specialized software programs) and technological upgrading (implementation of the latest ICT);
- 9) “Channels” provide the expansion of the communication channels capacity, the use of modern communication channels with stakeholders;
- 10) “Revenue streams” are increasing due to accelerated sales by accelerating logistics and financial business operations.

Figure 1. Business model of digitalisation of communication business processes of industrial enterprises

Key partners	Key types of activities	Key values	Relationships with clients	Customer segments
software development companies	key business processes of the enterprise: -document management, -management, -marketing, -finances, -manufacturing, -quality management, -external communications	-quality communications , -reduction in the duration of business processes (time saving), - increasing the level of enterprise management efficiency , -reducing the influence of “human factor” on the communications quality	-on-line consultation “24/7”, -maintaining relationships with consumers using a wide range of modern information and communication technology (including via mobile devices)	are expanded due to the markets globalization

Cost structure	Key resources	Technologies (suggested by author)	Channels	Revenue streams
-costs of new software, - costs of new information and communication technology	-saving time on communications through automation and reducing the duration of business processes, -increase the efficiency of human resource involvement	software (specialized software programs), - technological upgrading (implementation of the latest ICT)	-expansion of the communication channels capacity, -the use of modern communication channels with stakeholders	- increasing the sales by accelerating logistics and financial business operations

Source: the Osterwalder & Pigneur's (2012) model improved by the author

The author's propositions allow expanding the scope of use of the Osterwalder & Pigneur's business model. In our opinion, the improved business model of digitalization of the communication business processes at industrial enterprises is quite general and therefore can be applied by business entities and other industries.

3. Software programs to ensure the implementation of automation of business processes of industrial enterprises.

One of the relevant areas of increasing the efficiency of industrial enterprises is the digitalization of business. As practice shows, automation of the processes of one department, with seven employees, saves approximately 1800-3600 working hours per year (Automation, 2020). In addition to saving resource costs, such innovations reduce the administrative burden, improve the quality of communication business processes and provide acceleration of the department as a whole.

We classified the available software programs (available for domestic producers) for the automation of the most common types of business processes of industrial enterprises in accordance with the key types of activities of business (table 1).

4. Conclusion and Recommendations

Thus, according to the results of the research, it is possible to conclude the following:

- analysis of the existing business models allowed to determine their advantages and disadvantages and justify the suggestions for improving the

Osterwalder and Pigneur’s business model in the context of implementing digital transformations into the activities of industrial enterprises;

- the Osterwalder & Pigneur’s business model was further developed in terms of expanding its structural elements and highlighting the “Technology” block, which allows to specify the business digitalization processes (which are necessary in modern business conditions), to present an integrated structure of interconnected components, and clearly demonstrate the directions and types of changes of the existing business model and more clearly define the competitive advantages of the enterprise in the market;

- the range of possible software products was determined to ensure the implementation of automation of business processes at the industrial enterprises.

The results of the research can be used in the activities of business entities for the improvement/development of business models as well as to become the basis for further methodological studies in the field of digital transformations of business.

Table 1. Types of business-processes of industrial enterprises and software programs for their automation

Type of activity	Types of business processes	Types of software programs
Document management	<ul style="list-style-type: none"> • registry and administrative office • document control • monitoring the execution of orders and instructions 	<ul style="list-style-type: none"> • BAS Document management CORP
Management	<ul style="list-style-type: none"> • economic and information security • work on legal issues • management of KPI • management accounting • budgeting and financial management • HR management • advanced training of staff • logistics 	<ul style="list-style-type: none"> • BAS Holding Management • BAS ERP • BAS Integrated Enterprise Management
Marketing	<ul style="list-style-type: none"> • marketing mix management • advertising management • sales management • customer relationship management 	<ul style="list-style-type: none"> • BAS Trade Management
Finances	<ul style="list-style-type: none"> • accounting 	<ul style="list-style-type: none"> • BAS Accounting

	<ul style="list-style-type: none"> • tax accounting • financial planning • invoice management with clients • payroll management • calculation of costs 	<ul style="list-style-type: none"> • BAS Accounting CORP
Manufacturing	<ul style="list-style-type: none"> • manufacturing processes management • stock management • supply chain management • managing production equipment 	<ul style="list-style-type: none"> • MES Operations management of enterprise
Quality management	<ul style="list-style-type: none"> • product quality control • business process quality management 	<ul style="list-style-type: none"> • PDM Engineering data management
External communications	<ul style="list-style-type: none"> • site management • attraction of new clients • interaction with branches • work in the PR field 	<ul style="list-style-type: none"> • BAS Trade Management • Integration module EDI – NETWORK

Source: compiled by author.

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